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Third Phase Environmental Investigation

El Dorado Refinery
El Dorado, Kansas

Prepared for:

El Paso Merchant Energy-Petroleum Company

Two North Nevada Avenue
Colorado Springs, Colorado 80903

MWH
BUILDING A BETTER WORLD

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1 Site Layout

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LIST OF ACRONYMS AND ABBREVIATIONS

AHA	Asphalt Handling Area
BER	KDHE Bureau of Environmental Remediation
bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
EPH	Extractable Petroleum Hydrocarbon
EPME-PC	El Paso Merchant Energy – Petroleum Company
Fina	American Petrofina Oil and Chemical Company
HF	Hydrofluoric
IDW	Investigation-Derived Waste
KDHE	Kansas Department of Health and Environment
LNAPL	Light Non-Aqueous Phase Liquid
MADEP	Massachusetts Department of Environmental Protection
MPA	Main Process Area
NGVD	National Geodetic Vertical Datum
NRCS	Natural Resources Conservation Service
Pester	Pester Refining Company
PID	Photo-Ionization Detector
ppe	personal protective equipment
ppmv	parts per million by volume
PVC	Polyvinyl Chloride
QAPP	Quality Assurance Project Plan
ROSE	Residual Oil Supercritical Extraction
Site	El Dorado Refinery
SOPs	Standard Operating procedures
STF	South Tank Farm
Sunbelt	Sunbelt Environmental Management, Inc.
TCLP	Toxic Characteristic Leaching Procedure
TEC	Threshold-Effect Concentration
TPH-DRO	Total Petroleum Hydrocarbon – Diesel Range Organics
TPH-GRO	Total Petroleum Hydrocarbon – Gasoline Range Organics
USCS	United Soil Classification System
VOCs	Volatile Organic Compounds
VPH	Volatile Petroleum Hydrocarbon
WBWR	West Branch Walnut River
Work Plan	Work Plan for Third Phase Environmental Investigation
XRF	X-ray fluorescence

1.0 INTRODUCTION

This report presents the results of the environmental investigation (Third Phase Investigation) that was conducted at the El Paso Merchant Energy – Petroleum Company (EPME-PC), El Dorado Refinery located in El Dorado, Kansas (Site). The investigation was conducted in accordance with the "Work Plan for Third Phase Environmental Investigation, El Paso Merchant Energy – Petroleum Company, El Dorado Refinery, El Dorado, Kansas" (Work Plan) (MWH, 2006). The following presents a chronology of events that have occurred related to the scoping of the Third Phase Investigation and subsequent approvals by the Kansas Department of Health and Environment (KDHE):

- Work Plan—September 2006.
- KDHE approval letter—January 10, 2007.
- Meeting to discuss preliminary findings and supplemental investigation plans—June 18, 2008.
- Supplemental investigation work plan, letter from EPME-PC to KDHE—July 9, 2008
- KDHE response and approval letter response to July 9, 2008 letter—July 18, 2008.
- EPME-PC response to July 18, 2008 letter—October 22, 2008.

1.1 Purpose and Goals

The purpose of the investigation was to further characterize the soils, groundwater, surface water, and sediments at the Site. Additional investigation was needed in order to evaluate potential source areas and to gather data to support future remediation and risk assessment efforts. Areas of particular interest included the former process and chemical handling areas, various tank areas, piping runs, and stormwater and wastewater ponds.

Specific goals of the investigation effort were as follows:

- Identify and delineate source areas potentially contributing to the observed groundwater impacts.
- Delineate shallow and/or deep soil impacts.

- Further delineate dissolved-phase impacts and extent of light non-aqueous phase liquids (LNAPL) in groundwater.
- Assess potential impacts to river and creek sediments and surface water.
- Establish background soil parameter concentrations for representative soil series at the Site.
- Assess possible impacts to sediments and underlying soils in the facility wastewater/stormwater ponds.
- Collect the bulk of data necessary for future risk assessment and remedial design tasks.

1.2 Site Description

The Site is located to the north of the City of El Dorado, Kansas. The Site is located in portions of Sections 26, 27, and 34, Township 25 South, Range 5 East, Butler County, Kansas. **Figure 1** shows the Site location on a topographic map of the vicinity. The Site includes the former process area for the refinery (referred to herein as the Main Process Area, or MPA), vacant property to the west (referred to herein as the Asphalt Handling Area, or AHA), wastewater/stormwater ponds to the east, and the former tank farm located due south of the refinery (referred to herein as the South Tank Farm, or STF). The West Branch Walnut River (WBWR) defines the northeastern boundary of the Site. The Site does not include the adjacent Pester Burn Pond Superfund site, which is located north of the wastewater/stormwater ponds.

Topeka Street and a residential area are located to the east of the STF. Vacant land abuts the western boundary of the Site and the Site is bounded to the south by residential and commercial properties. A Site layout is shown on **Figure 2**.

1.3 Site History

The El Dorado Refinery was constructed in 1917 for the Pester Refining Company (Pester). Petro Atlas purchased the refinery in 1958, and within six months, sold the refinery to American Petrofina Oil and Chemical Company (Fina). Fina owned the refinery and surrounding property between 1958 and 1977. In 1977, Pester purchased the property from Fina and continued to operate the refinery until filing Chapter 11 bankruptcy on

February 25, 1985. The crude unit and most of the other operational units were shut down in March 1985.

On April 10, 1986, Coastal Derby Refining Company purchased the land and equipment at the refinery from Pester, excluding the Burn Pond. At that time, the major process units at the refinery included crude oil distillation, hydrodesulfurization, catalytic reforming, fluid catalytic cracking, hydrofluoric (HF) alkylation, and Residual Oil Supercritical Extraction (ROSE).

The refinery produced regular and unleaded gasoline, #2 fuel oil, #6 fuel oil, propane, and asphalt. An asphalt blending facility was operated at the Site until September 2004. EPME-PC currently operates a stormwater treatment facility at the Site.

1.4 Project History

Previous investigations at the Site began in 1986 when Sunbelt Environmental Management, Inc. (Sunbelt) of Oklahoma City, Oklahoma was retained by Pester. Sunbelt performed a Site investigation and field study of Pester's production facilities for the KDHE. Results of this investigation/study were presented in the report entitled: "Preliminary Field Summary for Investigation of The Pester Refining Company at El Dorado, Kansas, prepared by Sunbelt Environmental Management, Inc. and Mid West Analytical Labs, Inc., March 1987."

In response to Consent Order Number 03-E0021 between EPME-PC and the KDHE, Shaw Environmental, Inc. and Brown & Caldwell were retained to perform an investigation for the Site. The results of this investigation are presented in the report entitled: "First Phase Comprehensive Investigation Report for the Coastal El Dorado Refinery, El Dorado, Kansas, prepared by Brown & Caldwell and Shaw Environmental, Inc., January 22, 2004" (First Phase Report).

MWH was retained by EPME-PC in August 2004 to prepare a work plan for a second phase investigation (Second Phase Investigation). The plan, which was entitled, "Final Work Plan for Second Phase Environmental Investigation, El Dorado Refinery, El Dorado,

Kansas (MWH, 2005b)" was approved by the KDHE on March 22, 2005. The Second Phase Investigation was conducted during 2005, and a report entitled, "Second Phase Environmental Investigation Report, El Dorado Refinery, El Dorado, Kansas (MWH, 2005a)", was submitted to KDHE on October 15, 2005. KDHE approved the report in a letter dated January 12, 2006. The following work has been performed subsequent to the completion of the Second Phase Investigation:

- Site Demolition: primary structures and the majority of associated piping have been decontaminated, demolished, and removed from the Site (2006).
- Groundwater Interceptor Trench Installation: prevented impacted groundwater and LNAPL from discharging to the WBWR (2006).
- Third Phase Investigation Work Plan.
- Groundwater (semi-annual)/NPDES Monitoring (quarterly) - ongoing

1.5 Report Organization

The Standard Operating Procedures (SOPs), health & safety protocols, and the Quality Assurance Project Plan (QAPP) presented in the Work Plan were followed during the Third Phase Investigation, except where noted herein.

Section 2 provides a general summary of the Site conditions which include geology, soil, hydrogeology, and surface water. Section 3 provides an overview of the Third Phase Investigation components. Sections 4 through 11 describe the investigation methods and findings. Section 12 provides a discussion of the findings. Section 13 provides a summary of the findings and conclusions. Section 14 provides the recommendations for future actions. Section 15 presents a list of references cited in this report.

2.0 SITE CONDITIONS

2.1 Topography

The Site is located in the Flint Hills Uplands physiographic province (KGS, 2009). The Flint Hills Uplands are characterized by rolling hills and rocky soil. The highest surface elevations at the Site are approximately 1,339 feet National Geodetic Vertical Datum (NGVD) at the northwest corner of the AHA and 1,336 feet NGVD at the southwest corner of the STF. The lowest surface elevation at the Site, 1,287 feet NGVD, is located east of the wastewater/stormwater ponds adjacent to the WBWR. The overall Site topography slopes from west to east, towards the WBWR. The northwest corner of the STF slopes towards the STF Creek to the west. The southern 1/3 of the STF slopes towards the STF Creek to the north-northeast.

2.2 Soil

Soils in the vicinity of the Site are comprised of valley sediments, which consist primarily of clay, silt, sand, and gravel, in which poorly developed paleo-soils are present a few feet below the modern surface (Aber 1991). Modern soils tend to be thick, heavy, and poorly drained in the river valleys, but tend to be thin, variable, and permeable in the uplands. Sediments deposited along the WBWR and its tributaries consist mainly of locally derived material, including pebbles of limestone and chert (Leonard, 1972).

Based on the available information from the NRCS, nine primary soil series (not including Oil Wasteland) are represented both on-Site and in the immediate vicinity. The seven soil series are shown on **Figure 3**, and were described in detail in the Work Plan. The soils on-Site are:

- Labette Silty Clay Loam
- Labette-Dwight Complex
- Labette-Sogn Silty Clay Loams
- Norge Silt Loam
- Sogn Soils

- Verdigris Silt Loam, Occasionally Flooded
- Verdigris Soils, Frequently Flooded

Alluvium and weathered bedrock residuum from the surface to the top of bedrock are described in boring logs as predominantly silty clay with a thickness ranging from approximately 0 to 26 feet. Weathered bedrock residuum is typically comprised of limestone fragments and/or clay.

2.3 Geology

The Site is underlain by Lower Permian Age bedrock units of the Chase Group, which are comprised of layers of limestone, cherty limestone, dolomitic limestone, dolomite, and shale (Aber, 1991). The uplands around El Dorado consist of the Doyle Shale Formation and the Barnestone Limestone Formation. The Townada Limestone and Holmesville Shale Members of the Doyle Shale Formation outcrop in the Site vicinity (Zeller, 1968). Underlying the Doyle Shale Formation is the Barnestone Limestone Formation, which is comprised of the Fort Riley Limestone, Oketo Shale, and the Florence Limestone Members. Underlying the Barnestone Limestone Formation is the Blue Springs Shale Member of the Matfield Shale. **Figure 4** presents the natural gamma logs completed in 2005, which show the relationship between the formations beneath the Site.

2.4 Surface Water

The WBWR abuts the northeastern portion of the Site. The river bed is composed of silt, sand, and gravel overlying bedrock, with an average bank height of approximately 15 feet (KFFGC, 1978). An intermittent drainage (STF Creek) crosses the STF area and flows into the WBWR approximately 1,800 feet east of the STF. A series of wastewater/stormwater treatment ponds are located at the northeastern portion of the Site. Water is treated in the ponds and then discharged via an outfall into the WBWR under an NPDES Permit.

Groundwater springs are present at the southeastern portion of the AHA (AHA Spring), at the base of the former catalytic cracking unit in the MPA (CC Spring) and to the east of the Pester Ponds, adjacent to the WBWR (Pester Spring). A groundwater spring may also be the source of the ponded water at the northwest portion of the STF.

Hydrocarbon seeps have been observed along the western bank of the WBWR adjacent to both the Pester Ponds and the Site wastewater/stormwater ponds. A hydrocarbon seep was also observed at the STF Creek, at the approximate center of the STF.

A groundwater interceptor trench was installed adjacent to the Pester Site as part of the CERCLA corrective action at that site. A groundwater interceptor trench was also installed to the east of the Site wastewater/stormwater ponds in 2006 by EPME-PC. The location of the Site interceptor trench is shown on **Figure 2**. An operations and maintenance report is submitted quarterly for the interceptor trench.

2.5 Hydrogeology

Groundwater encountered beneath the Site includes both unconfined and confined groundwater, as well as areas of localized, perched groundwater. **Figure 5** presents a representative west-to-east geologic cross-section of the Site. The cross-section depicts the three upper-most water-bearing zones that have been identified beneath the Site. These include:

- The unconfined, shallow groundwater-bearing zone under water table conditions (occurs within alluvium, weathered/fractured Doyle Shale and the Fort Riley Limestone, collectively referred to as the Shallow System)
- The confined to partially confined groundwater encountered within fractures at the base of the Fort Riley Limestone Member
- Confined groundwater within the Florence Limestone Member

The groundwater in the Florence Limestone is confined by the presence of the Oketo Shale directly above the unit. Natural gamma logs (**Figure 4**) and field observations indicate that the groundwater at the base of the Fort Riley Limestone is confined by more competent, central portions of the Fort Riley Limestone. Based on slug test data and field observations, the most transmissive of the water-bearing zones is the highly fractured and weathered upper Fort Riley Limestone (part of the Shallow System) underlying the residuum and alluvium.

Groundwater flux estimates made during the Second Phase Investigation for the water bearing zones in the vicinity of the stormwater/wastewater ponds included the following:

- Shallow Zone: 2.64 ft^3/min
- Deep Fort Riley Limestone: 0.0006539 ft^3/min
- Florence Limestone: 0.6034 ft^3/min

As shown by the flux estimates, the flux in the Shallow Zone is approximately 4,000 times that in the competent Fort Riley Limestone and 4 times that in the Florence Limestone.

Groundwater impacts are largely confined to the Shallow System. The presence of the Oketo Shale between the Fort Riley Limestone and the Florence Limestone units and the upward groundwater gradients in the vicinity of the WBWR between the Florence, Fort Riley, and Shallow System have prevented contaminants from migrating from the Shallow System into deeper formations.

3.0 OVERVIEW OF THIRD PHASE INVESTIGATION

This section presents an overview of the Third Phase Investigation, including a review of the purpose of the investigation as well as a summary of the investigation components. Additional details of each component are presented in later sections.

3.1 Overview

The Second Phase Investigation was focused largely on the Site hydrogeology, overall groundwater quality, and potential contaminant migration pathways. The results of that investigation provided a good understanding of the Site hydrogeology and provided the data necessary to design an interim measure (interceptor trench) to prevent hydrocarbons from discharging to the WBWR. The Third Phase Investigation continued the systematic characterization of the Site and focused on supplying the bulk of the data needed to conduct a risk assessment and future remedial actions, as warranted. The investigation focused on the following areas of the Site and on the media listed below:

- MPA – Soils, groundwater, and pond sediment
- AHA – Asphaltic waste materials, soils, groundwater, and sediment from the AHA Spring
- STF – Soils, groundwater, and creek sediment and surface water
- Wastewater/Stormwater Ponds – Pond sediment and underlying soils
- West Branch Walnut River – sediment and surface water

The location of each area is shown on **Figure 2**. Descriptions of the goals and objectives of the investigations of each of these areas are presented below. Specific field and laboratory methods and protocols that were followed as part of the investigation were presented in the Work Plan. The locations of all borings and monitoring wells are presented on **Plate 1**.

3.2 Main Process Area

Although the approximate extent of the hydrocarbon impact in groundwater was identified in the Second Phase Investigation, an additional assessment of potential source areas within

the MPA was performed in the Third Phase Investigation. This assessment focused on former locations of tanks and process units, and in potentially impacted areas adjacent to former pipelines. Media sampled included soils (both surficial and deep), groundwater, and pond sediment.

The X-ray fluorescence (XRF) screening and limited surface soil sampling conducted as part of the Second Phase Investigation indicated the potential presence of metals in soils in certain areas of the MPA. Soils were sampled on a Site-wide basis in the Third Phase Investigation and analyzed for metals and petroleum hydrocarbon constituents. In general, soils in the vicinity of most tanks, process units, and in potentially impacted areas adjacent to former pipeline locations were sampled. Soil samples were collected both in the unsaturated and the saturated zones to assess maximum concentrations within the potential source areas.

Additional groundwater monitoring wells were installed both in and around the MPA. These wells were sampled in order to better characterize the sources and extent of groundwater impacts. A listing of all monitoring well construction details is presented in **Table 1**. **Tables 2a** and **2b** present groundwater elevation data, and **Table 3** presents groundwater field-measured parameters.

Pond sediment and underlying soil from both the Marley Pond and the Stormwater Pond (also called the Spray Pond) located in the eastern portion of the MPA were sampled. The sediment and soil sample locations from the ponds are shown on **Figure 6**.

3.3 Asphalt Handling Area

The AHA was formerly utilized for managing asphaltic and other materials (both solids and liquids) generated during the refinery operation. Currently, the area contains numerous piles of apparent asphaltic material. In the southeastern region of the AHA, there is a bermed area where it is believed that liquids and semi-solids were managed. According to facility personnel, liquids were formerly solidified/stabilized in the pond and the resulting material was spread in the AHA area. Given the limited access in the area, a backhoe was utilized to evaluate the extent of waste and impacted soils within the AHA. Waste samples

were collected and characterized in order to evaluate future disposal and/or remediation options. In addition, soil samples were collected to assess the extent of soil impacts in the area. Groundwater monitoring wells were also installed at the AHA to assess whether wastes within the AHA had impacted groundwater. A sediment sample was also collected from the AHA Spring located at the southeast corner of the AHA shown on **Figure 7**.

3.4 South Tank Farm Area

Additional assessments of potential source areas within the STF were performed. These assessments focused on former locations of tanks and potentially impacted areas adjacent to former pipelines. Media sampled included soils (both surficial and deep), groundwater, surface water in a ponded water area at the northwest portion of the STF, and surface water and sediments from the STF Creek.

Soils were sampled on a Site-wide basis and analyzed for metals and petroleum hydrocarbon constituents. Soil samples were collected both in the unsaturated and the saturated zones to assess maximum concentrations within the potential source areas. In addition, sediment samples from along the STF Creek at the southern portion of the STF were collected. The sediment sample locations are shown on **Figure 8**. Sediment samples from the STF Creek were collected at an upstream location, downstream at the property boundary, and in the approximate center of the STF. The STF Creek upstream sample was collected to aid in establishing background sediment data and the downstream sample was collected to evaluate the potential for off-Site migration of impacted sediments.

Surface water samples were collected from the STF Creek and from an impounded water area at the northwest portion of the STF. Additional groundwater monitoring wells were installed in potential source areas within the STF. The focus of the groundwater investigation was on impacted areas identified during the Second Phase Investigation.

3.5 West Branch Walnut River

Surface water and sediment samples were collected from the WBWR. Sediments were collected in areas upstream, downstream, and adjacent to the Site. The WBWR upstream

samples were collected to aid in establishing background sediment data. The WBWR sampling locations are shown on **Figure 7**.

3.6 Wastewater/Stormwater Ponds

Sediment characterization was conducted in the facility wastewater/stormwater ponds. The sediment sample locations from the ponds are shown on **Figure 6**. Data from the pond sediment characterization will be utilized to plan for the upcoming pond closure. Soil samples were also collected beneath the sediments in order to assess potential vertical migration of metals and petroleum constituents from the ponds into underlying soils.

4.0 RIVER AND CREEK SEDIMENT SAMPLING AND ANALYSIS

This section presents details of the river and creek sediment sampling investigation. Sediment was sampled from the WBWR, the STF Creek, and the AHA Spring. This section describes the sampling program, the relevant field methods, and a summary of laboratory analyses and findings.

4.1 River, Creek, and Spring Sediment Sampling

4.1.1 West Branch Walnut River

Sediment sampling was conducted at the five WBWR sampling transect locations shown on **Figure 7**. Four of these locations (samples SED-01 though SED-04) were adjacent to the refinery property, with one placed next to the Pester Burn Superfund Site (sample SED-04) and the other three near the wastewater/stormwater ponds. The fifth location (samples SED-05A through SED-05E) was the background location, which was located upstream from the refinery property. Each sampling transect was divided into five equal sections. One aliquot was collected from the approximate center of each section. At the background transect, each aliquot was submitted separately for analysis. At each transect (except in the background location), the aliquot located closest to the western bank of the river was retained for analysis of volatile organic compounds (VOC). In addition, at each transect (except in the background location), aliquots were composited into a single sample for analysis of other parameters. Each aliquot was collected from the upper 6 inches of the riverbed. A sample was not collected if sediment was not present along a transect. The sampling was conducted during low flow conditions so that wading was feasible.

Five discrete stream bank soil samples (samples RB-01 through RB-05) were collected in the location of the primary hydrocarbon seep along the WBWR (**Figure 14**). The samples were collected with clean, stainless-steel hand trowels from the outer six inches of stream bank in areas with observed hydrocarbon staining. Each of the stream bank soil samples were submitted for the Modified Skinner List VOCs, SVOCs, and metals; and TPH-GRO and TPH-DRO. Samples for MADEPEPH and MADEPVPH analysis were also collected from location RB-03.

4.1.2 Intermittent South Tank Farm Creek

Sediment sampling was conducted at five locations within the creek. The sample locations are shown on **Figure 8**. At each location, a single grab sample of the upper six inches of sediment was collected in the approximate center of the creek. Three of these locations (samples SED-11, STF-CR-W-0-6, and STF-CR-E-0-6) were located near the southern tank scars in the STF area. One location (sample SED-12) was the background location, which was located upstream; and one location (sample SED-10) was downstream just before the STF Creek flows off the property.

4.1.3 Asphalt Handling Area Spring

One grab sample (sample SED-13) was collected from the approximate center of a groundwater spring, which is located at the southeast corner of the AHA. The location where the sediment was sampled is shown on **Figure 7**.

4.2 Sampling Methods

Sediment sampling was conducted in accordance with the Work Plan. The river and creek were waded, as necessary. Prior to sampling, the river/creek was measured with a tape measure at the transect location and the sediment thickness was measured at each location using a probe or coring device. If the sediment was not thick enough along the transect location, a sediment sample was gathered a few feet upstream/downstream of the transect location. A stainless-steel hand auger was utilized to collect the sediment samples. For locations selected for VOC and total petroleum hydrocarbon – gasoline range organics (TPH-GRO) analyses, the samples were collected with TerraCore samplers. For composite samples, up to five sample aliquots were collected at each transect and then composited in a stainless-steel bowl. The composite samples were analyzed for metals, SVOCs, and total petroleum hydrocarbon – diesel range organics (TPH-DRO). Composite samples were placed into 4-oz. and/or 8-oz. amber glass wide-mouth jars for analysis. The samples were immediately placed on ice and every evening sent via overnight delivery to TestAmerica Laboratory (TAL) located in Buffalo, New York. The samples were shipped with the proper chain of custody (COC) documentation. The sampling tools were decontaminated after each sample was collected.

Each location was surveyed using a handheld GPS unit as described in the Work Plan. The GPS unit possessed sub-meter accuracy, with higher accuracy depending upon weather conditions, assuring accurate placement on the maps.

Sample Designation Each sample was given a unique sample identification, which consisted of a location identifier and/or sample type identifier. One field duplicate sample was collected for every twenty samples (i.e., a frequency of 5%). The sample identification for the duplicate sample included the above numbering scheme along with a fictitious number starting at 50. For example, a field duplicate sample collected from SED-03 would be reported as SED-03-50.

4.3 Laboratory Analysis

4.3.1 Methods

All of the sediment samples collected from the WBWR, STF Creek, and AHA Spring were analyzed for the modified Skinner List analytes (presented in the Work Plan), TPH-GRO, and TPH-DRO. The Skinner List was modified to exclude trivalent and hexavalent chromium (only total chromium was analyzed), cyanide (not detected in prior sampling at the Site), and non-standard, optional analytes (e.g., inoene). Sample containers and volumes, preservatives, holding times, and quality assurance/quality control measures were followed as presented in the Work Plan. One field duplicate and one matrix spike/matrix spike duplicate sample set were collected from each of the WBWR, and the STF Creek. A summary of the analytical data validation is presented in **Appendix A**. Sediment analytical data are included in **Appendix B** and are summarized on **Tables 4a** through **4d**.

4.3.2 Analytical Results

In accordance with the KDHE Sediment Policy (BSR-ARS-04S), sediment samples from the WBWR and the creek were compared with background concentrations (in sediment) and to the threshold effect concentrations (TEC) from the document "*Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems*" (MacDonald, et al, 2000).

The locations and analytical results of the collected sediment samples are shown on **Figure 7** and **8**, and the analytical results of the sediment samples are shown in **Tables 4a** through **4d**. Analytical laboratory reports are presented in **Appendix B** for the river and creek sediment samples. There were 298 sample results that were above the laboratory reporting limits, of those, five were above the TECs. The river/creek sediment sample results above the Sediment Standard TEC values are summarized as follows:

- Metals:
  - One exceedance of lead in SED-10 (45.9 mg/kg) above the TEC of 35.8 mg/kg.
  - Four exceedances of nickel in SED-10 (22.9 mg/kg), SED-11 (23.2 mg/kg), SED-12-Dup (23.9 mg/kg), and STF-CR-W (0-6) (28.7 mg/kg) above the TEC of 22.7 mg/kg.
- Semi-volatile organic compounds (SVOC): Except for pyrene (660 µg/kg, SED-11), which exceeds the TEC of 195 µg/kg, none of the detected SVOC levels exceeded TECs. Bis(2-ethylhexyl)phthalate was detected in samples SED-10 (180 µg/kg) and SED-11 (230 µg/kg). However, no TEC is available for bis(2-ethylhexyl)phthalate.
- Volatile organic compounds: No VOC TECs are available. VOCs detected above laboratory reporting limits included: Benzene (SED-03, 9 µg/kg and SED-11, 1,900 µg/kg), ethylbenzene (SED-11, 310 µg/kg), total xylenes (SED-03, 13 µg/kg and SED-11, 550 µg/kg), and methyl ethyl ketone (MEK, a common lab contaminant) (background samples SED-05D, 9 µg/kg and SED-05E, 6 µg/kg).
- Total petroleum hydrocarbons: No TPH TECs are available. TPH-GRO levels were detected above laboratory reporting limits in SED-10 (86 mg/kg) and SED-11 (150 mg/kg). TPH-DRO levels were detected above laboratory reporting limits in samples SED-01 (10 mg/kg), SED-02 (130 mg/kg), SED-10 (11 mg/kg), SED-11 (510 mg/kg), and STFCR-W (34 mg/kg).

4.3.3 Data Discussion

The collected data were compared to individual background values from sample locations and to the applicable Sediment Standard TEC values. **Figure 7** and **8** show the river/creek sediment sample exceedances. The background sediment samples (samples SED-05A through SED-05E) did not exceed any of the Sediment Standard TEC values. The WBWR

river sediment samples (samples SED-01 through SED-04) also did not exceed any of the Sediment Standard TEC values. Four out of five of the STF Creek sediment samples had exceedances of the Sediment Standard TEC values for lead and/or nickel. However, comparable lead and nickel values were detected in the background location, SED-12.

4.4 Deviations

Background data were insufficient for statistical comparison. Therefore, data were compared with individual background levels.

5.0 SURFACE WATER SAMPLING AND ANALYSIS

5.1 Introduction

A 1,600 foot long groundwater interceptor trench was installed along the WBWR in 2006 to prevent hydrocarbon seeps along the bank of the WBWR (**Figure 2**). Surface water sampling was conducted in June 2005 and again in November 2006, prior to the initiation of the trench operation, which began on December 5, 2006. In a letter dated October 30, 2007, KDHE-BER requested that surface water sampling continue on an annual basis for the foreseeable future during base-flow conditions. Surface water sampling was scheduled to occur in December 2008; however, adverse field conditions warranted delaying the sampling until February 2009 as approved by the KDHE. Surface water sampling was subsequently conducted on February 5, 2009 in conjunction with the Third Phase Investigation. WBWR surface water sample locations are shown on **Figure 9** and the WBWR data are presented in Section 5.5.

Surface water samples were also collected from the STF Creek and from the ponded water area at the northwest portion of the STF. These surface water sample locations are shown on **Figure 10** and are discussed in Section 5.6.

5.2 Methods

All five surface water samples were collected by wading into the river. While collecting samples, field personnel stood downstream of the sample location to prevent possible cross-contamination. A single grab sample was collected using a Wildco® Alpha Van Dorn thief sampler (Van Dorn sampler). The Van Dorn sampler is best used for discrete point sampling at a given depth. The surface water samples were collected at approximately one foot below the surface of the water (or just below the surface of the water if total depth to streambed was less than one foot) and poured directly into the appropriate sample containers, labeled, and placed into a cooler containing ice for preservation. Samples were transported to the analytical laboratory via overnight delivery service under chain-of-custody control. The Van Dorn sampler was decontaminated between sampling locations using a non-phosphate detergent (Alconox®) and rinsed with de-ionized water.

Each location was surveyed using a handheld GPS unit as described in the Work Plan. The GPS unit possessed sub-meter accuracy, with higher accuracy depending upon weather conditions, assuring accurate placement on the maps.

5.3 Laboratory Analysis

All of the surface water samples collected from the five locations in February 2009 were analyzed for VOCs, SVOCs, metals, and cyanide, as presented in **Table 5**. In addition, all samples were analyzed for general chemistry parameters (alkalinity, chloride, nitrate, sulfate, total dissolved solids, etc.) and TPH in order to evaluate general water quality and to compare the results from the surface water collected during this event to the surface water samples collected during the Second Phase Environmental Investigation conducted in 2005 and the 2006 sampling event.

Laboratory analytical methods are included in the QAPP of the Phase II Environmental Investigation Work Plan. To meet the low-level Kansas Surface Water Quality Standards (SWQS) for several SVOCs, a number of the polyaromatic hydrocarbons (PAHs) were analyzed by Method 8270 SIM (Simultaneous Ion Monitoring). All surface water sample analyses were conducted by TestAmerica Laboratory in Buffalo, New York.

All collected data were validated as part of quality assurance/quality control procedures. A discussion of the data validation is provided in **Appendix A**. Based on the results of data validation, all data are considered valid as qualified and useable for evaluation against project-specific data quality objectives (DQOs).

5.4 KDHE Screening Levels

As stated in the KDHE-BER letter dated January 12, 2006, surface water sample results are to be compared to "…the most stringent numeric criteria for the various use categories as adopted by reference in K.A.R. 28-16-28e(d), including many U.S. Environmental Protection Agency (EPA) criteria for specific use categories as promulgated in 40 C.F. R. Part 131.36." In those instances where a surface water quality standard has not been established for a given parameter, then KDHE-BER recommended using EPA Region 5

Ecological Screening Levels (ESLs) for screening purposes, available at http://www.epa.gov/Region5/rcraca/edql.htm.

Surface water analytical results collected on February 5, 2009 were compared to the Kansas SWQS Table of Numeric Criteria prepared by the KDHE – Bureau of Water, revised December 6, 2004. The EPA Region 5 ESLs were referenced when a Kansas SWQS standard was not available or when values were lower. SWQS values are referred to herein as "Screening Levels". Analytical data detected above laboratory reporting limits are summarized in Table 5 for the 2009 surface water samples. Table 5 also presents the analytes for which results exceeded the Screening Levels.

5.5 WBWR Sampling and Analysis

5.5.1 WBWR Sampling Locations

Surface water samples were collected from Transects #1 through #5 within the WBWR as part of the Third Phase Investigation (**Figure 9**). The sample locations were as follows:

- Transect #1 – Located north of the Site, adjacent to the Pester property (referred to as Transect-1 in the 2005 sampling event and as T1 in the 2006 sampling event).
- Transect #2 – Located adjacent to the Site, near the north end of the wastewater/stormwater ponds (referred to as Transect-2 in the 2005 sampling event and as T2 in the 2006 sampling event).
- Transect #3 – Located adjacent to the Site at the main seep area (referred to as Transect-3 in the 2005 sampling event and as T3 in the 2006 sampling event).
- Transect #4 – Located adjacent to the Site, near the south end of the wastewater/stormwater ponds (referred to as Transect-4 in the 2005 sampling event and as T4 in the 2006 sampling event).
- Transect #5 – Located upgradient of Pester, north of the Site (this Transect was not sampled in the 2005 sampling event and was referred to as T5 in the 2006 sampling event.)

Staff gauges were initially installed at the Site at Transects #2 through #4. There is also a staff gauge present north of the Site, at the north end of the Pester property (Pester Staff

Gauge, Transect #1). These staff gauges coincide with the locations of surface water samples collected during the Second Phase Investigation surface water sampling event. The staff gauges at Transects #2 and #3 were subsequently destroyed during flooding events. Approval to discontinue staff gauge measurements and to not replace the destroyed staff gauges was granted by KDHE on July 18, 2008.

Surface water samples from Transects #2, #3, and #4 were collected at the same locations during all three surface water sampling events (2005, 2006, and 2009). Transect #1 samples were collected to the east of the Pester site in 2005 and to the north in 2006 and 2009. No Transect #5 samples were collected in 2005. The sampling locations along each transect were selected using a modified United States Geological Survey (USGS) equal discharge increment (EDI) method. The EDI method is a flow-weighted technique that is utilized to estimate the mass of constituents passing through a river cross-section. The portion of the stream nearest to the facility representing 25% of the cumulative flow was selected for sampling. Minor adjustments were made to the selection of the sample point in February 2009 based upon conditions encountered, such as obstructions at the stream surface, shallow channel depth, reduced channel width, and ice in the stream.

In a letter dated October 30, 2007 the KDHE-BER requested that surface water sampling be conducted on an annual basis during a period when conditions best represent base-flow. The February 5, 2009 sampling event occurred during a low-flow period for the WBWR. The USGS monitors and records the river stage hourly at USGS Stream Gauging Station 07146800, which is located on the WBWR approximately 0.8 miles downstream of the Site. The data are available by accessing their website. Flood stage at this station is 21 feet. The average daily gauge height for February 5, 2009 was approximately 6.1 feet, well below flood stage, indicating low-flow river conditions.

5.5.2 2009 WBWR Data Summary

Field Parameters

Measurements of temperature, pH, conductivity, oxidation-reduction potential (ORP), and specific conductivity were measured in the field during sampling. Field notes of water

quality parameters for the surface water samples collected in the field on February 5, 2009 are included in **Appendix C**. Results of the collected field parameters are discussed below.

- The field readings collected directly from the WBWR for pH ranged from 6.23 in Transect #1 to 7.60 in Transect #2.
- Specific conductivity, measured in microSiemens per centimeter (µS/cm), ranged from 782 µS/cm in Transect #4 to 838 µS/cm in Transect #5.
- ORP, measured in millivolts (mV), ranged from 203.9 mV in Transect #3 to 238.7 mV in Transect #5.
- Turbidity was qualitatively described as clear to slightly cloudy.

Laboratory analytical reports for the surface water samples collected on February 5, 2009 are included in **Appendix B**. Analytical detections above laboratory reporting limits are summarized in Table 5. The analytical results for the surface water samples were compared with the applicable Screening Levels.

Analytical results detected above laboratory reporting limits are discussed below (estimated values below laboratory reporting limits are not discussed).

Volatile Organic Compounds

No VOCs were detected above laboratory reporting limits in the surface water samples.

Metals

- Barium was detected in the surface water samples collected from all five locations in the WBWR. Barium concentrations ranged from 201B µg/L at upgradient Transect #1 to 222B µg/L at upgradient Transect #5. All concentrations were below the Screening Level of 1,000 µg/L. Barium, however, was also detected in the associated sample blank.
- Calcium was detected in the surface water samples collected from all five locations in the WBWR. Calcium concentrations ranged from 83,900B µg/L at upgradient Transect #1 to 88,000B µg/L at Transect #2. There is no applicable Screening Level for calcium. Calcium however, was also detected in the associated sample blank.

- Iron was detected in the surface water samples collected from all five locations in the WBWR. Iron concentrations ranged from 296 µg/L at upgradient Transect #1 to 1,750 µg/L at upgradient Transect #5. There is no applicable Screening Level for iron.
- Magnesium was detected in the surface water samples collected from all five locations in the WBWR. Magnesium concentrations ranged from 21,100 µg/L at upgradient Transect #1 to 22,200 µg/L at Transect #2. There is no applicable surface water Screening Level for magnesium.
- Manganese was detected in the surface water samples collected from all five locations in the WBWR. Manganese concentrations ranged from 86.2 B µg/L at Transect #3 to 252 µg/L at upgradient Transect #5. There is no applicable Screening Level for manganese. Manganese was also detected in the associated sample blank.
- Mercury was detected in the surface water samples collected from upgradient Transect #1 and Transects #2 and #4. The values for the samples at upgradient Transect #1 (1.1 µg/L), Transect #2 (0.5 µg/L), and Transect #4 (0.3 µg/L) all exceeded the Screening Level for mercury of 0.146 µg/L.
- Sodium was detected in the surface water samples collected from all five locations in the WBWR. Sodium concentrations ranged from 59,200 µg/L at upgradient Transect #1 to 62,600 µg/L at Transect #2. There is no applicable Screening Level for sodium.

General Chemistry

- Alkalinity ranged from 294 mg/L in the surface water sample collected at Transect #4 to 303 mg/L at upgradient Transect #5.
- Chloride was detected in the surface water samples collected from all five locations in the WBWR. Chloride concentrations ranged from 95 mg/L (upgradient Transect #1 and Transect #4) to 98 mg/L (upgradient Transect #5). Chloride concentrations were below the Screening Level of 250 mg/L in the surface water samples collected from all five locations.
- Cyanide was detected in the surface water sample collected at Transect #3. The cyanide concentration at that transect (0.0132 mg/L) exceeded the cyanide Screening Level of 0.0052 mg/L.

- Fluoride was detected in the surface water samples collected from all five transects in the WBWR. Fluoride concentrations ranged from 0.18 mg/L (Transect #1) to 0.2 mg/L (Transect #4 and upgradient Transect #5). Fluoride concentrations were below the Screening Level of 1.0 mg/L in the samples collected from all five transects of the WBWR.
- Nitrate was detected in the surface water samples collected from all five transects in the WBWR. Nitrate concentrations ranged from 0.475 B mg/L in the surface water sample collected at upgradient Transect #5 to 0.596 B mg/L in the samples collected from Transects #3 and #4. Nitrate concentrations were below the Screening Level of 10 mg/L in the surface water samples collected from the WBWR. Nitrate was also detected in the associated sample blank.
- Sulfate was detected in the surface water samples collected from all five transects in the WBWR. Sulfate concentrations ranged from 31.6 B mg/L in the sample collected from Transect #3 to 39.3 J mg/L in the sample collected at Transect #2. Sulfate concentrations were below the Screening Level of 250 mg/L in the surface water samples collected from all five transects. Sulfate was also detected in the associated sample blank for samples collected at Transects #3 and #4.
- Total dissolved solids (TDS) ranged from 443 mg/L in the surface water sample collected at Transect #3 to 464 mg/L in the sample collected at Transect #4. There is no surface water standard established for TDS in either the Kansas SWQS or the EPA Region 5 ESLs.

No TPH-DRO, TPH-GRO, or SVOCs were detected above laboratory reporting limits in the February 5, 2009 surface water samples.

5.5.3 2005/2006/2009 WBWR Data Comparison Summary

Historical analytical data detected above laboratory reporting limits are summarized in Table 5. The differences in analytical results between the surface water samples collected in June 2005, November 2006, and February 2009 are summarized below:

Volatile Organic Compounds

- At Transect #3, located at the main seep area, benzene was detected at 2.2 µg/L in 2006. Benzene was not detected above reporting limits in either 2005 or 2009.
- Methyl tert-butyl ether (MTBE) was not detected above the reporting limit (<5.0 µg/L) in 2005 or 2009. MTBE was detected at concentrations of 2.8 µg/L (Transect #2), 2.1 µg/L (Transect #3), and 1.2 µg/L (Transect #4) in 2006.
- Methylene chloride was not detected above reporting limits in 2005 or 2009. In 2006, methylene chloride was detected at 1.1 µg/L (upgradient Transect #1), 1.6 µg/L (Transect #4), and 1.3 µg/L (upgradient Transect #5). Although it was not detected in the method blank, the presence of methylene chloride is often attributed to laboratory contamination.

Semi-volatile Organic Compounds

- No SVOCs were detected above laboratory reporting limits (Method 8270) in 2005 or in 2009. Three SVOCs were detected above laboratory reporting limits (Method 8270 SIM) in 2006. 1-methylnapthalene was detected in Transect #2 (.04 µg/L), Transect #3 (0.49 µg/L), and Transect #4 (0.13 µg/L). 2-methylnapthalene was detected in Transect #3 (0.2 µg/L). Naphthalene was detected in Transect #2 (0.03 µg/L) and Transect #3 (0.1 µg/L).

Total Petroleum Hydrocarbons

- TPH (>C10) levels of 55 µg/L (Transect #1) and 34 µg/L (Transect #4) were detected in the surface water samples collected from the WBWR in 2005. TPH-GRO was detected at a concentration of 44 µg/L in the sample collected from Transect #3 in 2006. TPH was not detected in any of the surface water samples collected from the WBWR during the 2009 event.

Metals

- Arsenic was detected above the reporting limit in 2005 at Transect #2 (5 µg/L); however, this detection was below the Screening Level of 10 µg/L. Arsenic was not detected above the reporting limit in 2006.

- Barium was detected at all five transects in 2005, 2006, and 2009. No barium concentrations exceeded the Screening Level of 1,000 μg/L.
- Mercury was detected at four transects in 2005 (0. 63 μg/L at upgradient Transect #1, 1.4 μg/L at Transect #2, 6.3J μg/L at Transect #3, and 2.6 μg/L at Transect #4) and at three transects in 2009 (1.1 μg/L at upgradient Transect #1, 0.5 μg/L at Transect #2, and 0.3 μg/L at Transect #4). All of these concentrations were above the Screening Level for mercury of 0.146 μg/L. There was no mercury detected above the reporting limits in 2006.
- Vanadium was detected at levels above the Screening Level (12 μg/L) in Transect #1 (15 μg/L), Transect #2 (13 μg/L), Transect #3 (13 μg/L), and Transect #4 (15 μg/L) collected in 2005. However, no vanadium levels were detected above laboratory reporting levels in any of the samples collected in 2006 and 2009.
- Total chromium, cobalt, copper, nickel, and zinc were detected above laboratory reporting limits in all samples.
- Although there are not any Screening Levels associated with calcium, iron, magnesium, manganese, potassium, and sodium, the concentrations for these six metals increased considerably between June 2005 and November 2006; and decreased considerably from November 2006 to February 2009.

General Chemistry

- Chloride was detected at all transects in 2005, 2006, and 2009. No chloride concentrations were above the Screening Level (250 mg/L) in 2005 or in 2009. Chloride concentrations were detected above the Screening Level at all transects in 2006 (754 mg/L at upgradient Transect #1, 818 mg/L at Transect #2, 695 mg/L at Transect #3, 464 mg/L at Transect #4, and 774 mg/L at upgradient Transect #5).
- Cyanide was detected above the Screening Level (0.0052 mg/L) at Transect #3 (0.0132 mg/L) in February 2009. Cyanide had not previously been detected at the Site.
- Total dissolved solids (TDS) ranged from 290 mg/L to 310 mg/L in 2005, from 1,130 to 1,310 in 2006, and from 443 mg/L to 464 mg/L in 2009. There is no established Screening Level for TDS.

5.6 STF Surface Water Samples

5.6.1 STF Sampling Locations

Surface water samples were collected from three locations in the STF area during the June 2005 sampling event: Transect-5 (downstream), Transect-6 (center of STF), and Transect-7 (upgradient). These three transects were located along the STF Creek. The June 2005 Transect-5 sample location differs from the Transect #5 (2006 and 2009) sample location, which is located in the WBWR. To avoid confusion between the Transect-5 and Transect #5 locations, the 2005 transects are referred to herein after as STF-5, STF-6, and STF-7, for Transect-5, Transect-6, and Transect-7, respectively. The analytical data detected above laboratory reporting limits for these samples are summarized in Table 5. These results were discussed in the Phase II Environmental Investigation (MWH, 2006).

On February 25, 2009, as part of the Third Phase Investigation, surface water samples were collected from two locations in the STF as depicted on **Figure 9**. Sample SW-POND was collected from the ponded water area at the northwest corner of the STF. Sample SW-CREEK was collected from the STF Creek, at the approximate center of the STF (same location as STF-6).

Samples SW-POND and SW-CREEK were both collected using a Van Dorn sampler following sampling techniques outlined in Section 5.2 above. These surface water samples were analyzed for a limited range of analytes, including VOCs and TPH to assess potential organic impacts. A discussion of these surface water samples is included in Section 5.6.2.

5.6.2 2009 STF Data Summary

Field Parameters

Measurements of temperature, pH, conductivity, oxidation-reduction potential (ORP), and specific conductivity were measured in the field during sampling. Field notes of water quality parameters for the surface water samples that were collected in the field on February 25, 2009 are included in **Appendix C**. Results of the collected field parameters are discussed below.

- The field readings collected directly from the STF for pH ranged from 7.95 in the SW-CREEK location to 8.59 in the SW-POND location.
- Specific conductivity, measured in µS/cm ranged from 1,077 µS/cm in the SW-POND location to 1,934 µS/cm in the SW-CREEK location.
- ORP, measured in millivolts (mV), ranged from 2.1 mV in SW-CREEK to 22.2 mV in SW-POND.

Laboratory analytical reports for the surface water samples collected on February 25, 2009 are included in **Appendix B**. Analytical data detected above laboratory reporting limits are summarized in **Table 5**. The analytical results for the surface water samples were compared with the applicable Screening Levels.

Analytical results detected above laboratory reporting limits are discussed below (estimated values below laboratory reporting limits are not discussed).

Volatile Organic Compounds

- Benzene was detected in the surface water sample collected from the SW-CREEK location in the STF. The value for the sample (1.8 µg/L) did not exceed the Screening Level for benzene of 5 µg/L.
- Methyl tert-butyl ether was detected (1.7 µg/L) in the surface water sample collected from the SW-CREEK location in the STF. There is no surface water standard established for methyl tert-butyl ether in either the Kansas SWQS or the EPA Region 5 ESLs.

Total Petroleum Hydrocarbons

- TPH as diesel fuel was not detected above laboratory reporting limits in the samples. However, an estimated level (0.13J µg/L) was measured in the surface water sample SW-POND. There is no surface water standard established for PHC as diesel fuel in either the Kansas SWQS or the EPA Region 5 ESLs.
- TPH as gasoline was not detected above laboratory reporting limits in the samples. However, estimated levels were measured in the surface water samples collected from both the SW-POND location (0.0057J µg/L) and the SW-CREEK location

(0.013J µg/L). There is no surface water standard established for PHC as gasoline in either the Kansas SWQS or the EPA Region 5 ESLs.

General Chemistry

- Alkalinity ranged from 320 mg/L in the surface water sample collected from the SW-POND, to 352 mg/L in the surface water sample collected from the SW-CREEK.
- Chloride was detected in the surface water samples collected from both sampling locations. Chloride concentrations ranged from 50D mg/L in SW-POND, to 450D mg/L in SW-CREEK. The concentration in the SW-CREEK sample exceeded the Screening Level of 250 mg/L.
- Sulfate was detected in the surface water samples collected from both sampling locations. Sulfate concentrations ranged from 30.4DB mg/L in the SW-CREEK sample, to 208DB mg/L in the SW-POND sample. Sulfate concentrations in both samples were below the Screening Level of 250 mg/L.
- Total dissolved solids (TDS) ranged from 643 mg/L in the SW-POND sample, to 1,080 mg/L in the SW-CREEK sample. There is no surface water standard established for TDS in either the Kansas SWQS or the EPA Region 5 ESLs.

5.6.3 2005/2009 STF Data Comparison Summary

Historical analytical data detected are summarized in **Table 5**. The differences in analytical results between the surface water samples collected in June 2005 and February 2009 are summarized below:

Volatile Organic Compounds

- Benzene (1.8 µg/L) was detected in the SW-CREEK sample in 2009. The SW-CREEK location is the same as STF-6, which was sampled in June 2005. Benzene was not detected above the laboratory reporting limit (<1 µg/L) in 2005.
- Methyl tert-butyl ether (1.7 µg/L) was detected in the SW-CREEK sample in 2009. Methyl tert-butyl ether was not detected above the laboratory reporting limit (<5 µg/L) in 2005.

Semi-Volatile Organic Compounds

- No SVOCs were detected above laboratory reporting limits in 2005. Surface water samples collected in February 2009 were not analyzed for SVOCs.

Total Petroleum Hydrocarbons

- TPH C28 – C35 was detected in STF-5, STF-6, and STF-7 in the 2005 sampling event. An estimated level (0.13J µg/L) of PHC as diesel fuel (up to C28) was measured in the SW-Pond sample in 2009. Estimated levels of PHC as gasoline (0.0057J µg/L and 0.013J µg/L, respectively) were measured in both the SW-POND and SW-CREEK samples in 2009.

Metals

- 2009 samples SW-POND and SW-CREEK were not analyzed for metals. 2005 samples STF-5, STF-6, and STF-7 were analyzed for metals. Barium, calcium, iron, magnesium, manganese, potassium, and sodium were detected in each sampling location.

General Chemistry

- Alkalinity was detected in all STF sampling locations in 2005 and 2009. There is no surface water standard established for alkalinity in either the Kansas SWQS or the EPA Region 5 ESLs.
- Chloride was detected in all STF sampling locations in 2005 and 2009. The concentration in the SW-CREEK sampling location (450D mg/L) exceeded the Screening Level of 250 mg/L. Concentrations from the same sampling location in 2005, STF-6, (350 mg/L) also exceeded the Screening Level of 250 mg/L.
- TDS ranged from 740 mg/L in 2005, to 1080 mg/L in 2009. There is no established Screening Level for TDS.

5.7 Data Discussion

Surface water sampling was conducted on February 5, 2009, several years after the installation and startup of the interceptor trench at the Site (December, 2006). Based on the available surface water elevation data, the 2009 surface water sampling event was conducted during low discharge conditions.

5.7.1 WBWR Data Discussion

Analytical results were compared to the Kansas Surface Water Quality Standards Table of Numeric Criteria prepared by KDHE. EPA Region 5 ESLs were referenced when a Kansas SWQS was not available or when values were lower. **Figure 9** shows surface water sample locations and results for the northern area, and **Figure 10** shows surface water sample locations and results for the southern area.

Calcium, iron, magnesium, manganese, potassium sodium, and vanadium were detected in all five samples collected from the WBWR in 2009; however, there is no applicable Screening Level for these analytes. Barium was detected in the surface water samples collected from all five locations in the WBWR, but concentrations were below the Screening Level of 1,000 µg/L.

Mercury was detected in the surface water samples collected from Transects #1, #2, and #4. Concentrations for all three samples exceeded the Screening Level for mercury (0.146 µg/L). However, there were no detections of mercury in the sediment samples collected within the WBWR and there were no detections of mercury in any of the groundwater samples collected during the investigation. Therefore, it is likely that the source of the detected mercury is from upgradient of the Site.

Cyanide was detected above the screening level (0.0052 mg/L) at Transect #3 (0.0132 mg/L) during the February 2009 event. Cyanide was not detected in previous surface water sampling events in 2005 or 2006.

TDS levels measured in 2009 samples (up to 464 mg/L), were substantially lower than the 2006 samples (up to 1,310 mg/L) and are considered consistent with expected values for stream surface water samples.

No VOCs were detected above laboratory reporting limits in the surface water samples collected from the WBWR in February 2009. In addition, no SVOCs, TPH-DRO or TPH-GRO levels were detected above laboratory reporting limits.

5.7.2 STF Data Discussion

The surface water samples collected in February 2009 in the STF were analyzed for VOCs, Petroleum Hydrocarbons, and General Chemistry parameters. Analytes detected in the samples included: chloride, sulfate, PHC as diesel fuel, PHC as gasoline, benzene, and methyl tert-butyl ether. Except for the chloride sample collected from the SW-Creek location, all detected parameters were below their respective Screening Levels. The samples collected from STF-6 (the same as 2009 SW-Creek location) and STF-7 in 2005 also exceeded the Screening Level for chloride.

6.0 POND SEDIMENT SAMPLING AND ANALYSIS

The facility contains ten ponds, including the Marley Pond, Spray Pond, and the Wastewater/Stormwater Ponds, which serve various water storage and treatment functions. The locations of the ponds are shown on **Figure 6.** The facility ponds currently receive stormwater, though historically many of the ponds also received various process-related wastewater streams. EPME-PC plans to close the facility ponds as part of future Site demolition and remediation activities. Therefore, the pond sediments needed to be characterized to assess chemical content plus solid waste status. Sample locations are shown on **Figure 6**.

The pond sediment characterization program was based on the KDHE Bureau of Environmental Remediation (BER) guidance concerning verification sampling of non-hazardous industrial wastewater ponds (KDHE, 2005). This guidance specifies a composite sampling approach that involves sampling the pond floor, sidewalls, and inflow/outflow pipe areas. The guidance suggests collecting a prescribed number of floor composites, depending on the area of the pond.

Descriptions of the sampling program are presented in the following subsections for each pond.

6.1 Methods

Sediment sampling was conducted in accordance with the Work Plan. AMS Core barrel samplers with polyvinyl chloride (PVC) sample sleeves were utilized for the collection of all samples. The pond sediment samples required the use of a small two-person pontoon boat in order to reach the designated sample locations. Prior to sampling, the sediment thickness was measured at each location using a measuring rod. The pond sediment thickness measurements are shown on **Figure 11** and were found to range between zero and approximately 50 inches. The core barrel was pushed through the pond sediment to the sediment/soil interface. Once the sediment core was collected, the core was taken to shore where it was logged and screened with a photoionization detector (PID) by an MWH geologist. For each location, the aliquot (e.g., A, B, C, or D) with the highest PID reading

was selected for sampling for VOC analysis. The selected aliquot core sample was placed in a stainless steel bowl and the VOC, TPH-GRO, and Massachusetts Department of Environmental Protection (MADEP) volatile petroleum hydrocarbons MADEPVPH samples were collected first. The remaining sediment was composited with the sediment from the other aliquots in a stainless steel bowl. The composite samples were analyzed for metals, SVOCs, TPH-DRO, and MADEP extractable petroleum hydrocarbons (MADEPEPH). Selected samples were also analyzed for TCLP parameters. TerraCore samplers were used for VOC and TPH-GRO samples, a 40-ml glass vial preserved with methanol was used for the MADEPVPH, and 4oz. or 8oz. amber glass wide mouth jars were utilized for the other analyzed parameters. The samples were immediately placed on ice and every evening sent via overnight delivery to TestAmerica Laboratory in Buffalo, New York, under chain-of-custody control. The sampling tools were decontaminated after each sample collected.

Pond floor aliquots were composites of recovered sediment cores and were representative of the full depth of sediment in a given location. If the sediment depths exceeded 24 inches, then aliquots were collected from both the upper 12 inches and the lower 12 inches and were composited into depth-specific pond floor samples.

Sidewall aliquots were collected from one foot below the current water level. Two of the sidewall aliquots were collected as close as practicable to the inflow/outflow locations.

Pond sediment sample designations are shown on **Figure 6**.

6.2 Marley Pond and Spray Pond

The Marley Pond and the Spray Pond have areas of roughly 24,000 and 17,000 square feet, respectively, and are shown on **Figures 6 and 11**. Based on the Work Plan, two composite samples of sediment were collected from each pond.

The first samples collected from the Marley and Spray ponds (samples PB-SED-16 and PB-SED-14, respectively) were floor composites of four aliquots, each collected from one quadrant of the pond (**Figure 6**).

The second set of samples collected from the Marley and Spray Ponds (samples SED-17 and SED-15, respectively) were sidewall composites of up to four aliquots, which were collected from each pond sidewall (**Figure 6**). Discrete samples were collected from one out of every four aliquots for VOC analysis.

6.3 Wastewater/Stormwater Ponds

The facility wastewater/stormwater ponds were sampled individually in the same manner as described above for the Marley and Spray Ponds. The ponds were sampled as shown on **Figure 6**. The largest pond, West Oxidation Pond, has an area of approximately 257,000 square feet (**Figure 11**) and was divided into four separate sections for sampling. A total of four pond bottom composite samples (samples PB-SED-30, PB-SED-32, PB-SED-34, and PB-SED-36) and four sidewall composite samples (samples SED-31B, SED-33B, SED-35B, and SED-37) were collected for analysis from the West Oxidation pond.

A summary of the pond sampling locations is provided below.

Pond Sediment Sampling Location Summary

Polishing Pond	
Pond Bottom Composite	*PB-SED-18*
Sidewall Composite	*SED-19*
Discrete Samples for VOCs	*PB-SED-18D74-78, SED-19D*
Primary Pond	
Pond Bottom Composite	*PB-SED-39*
Sidewall Composite	*SED-38*
Discrete Samples for VOCs	*PB-SED-39D, SED-38D*
Southeast Pond	
Pond Bottom Composite	*PB-SED-28*
Sidewall Composite	*SED-29*
Discrete Samples for VOCs	*PB-SED-28D, SED-29D*
Equalization Basin	
Pond Bottom Composite	*PB-SED-26*
Sidewall Composite	*SED-27*
Discrete Samples for VOCs	*PB-SED-26B-66-78, PB-SED-26B-88-100, SED-27B*

Aeration Pond #1	
Pond Bottom Composite	*PB-SED-24*
Sidewall Composite	*SED-25*
Discrete Samples for VOCs	*PB-SED-24B-156-162, SED-25B*
Aeration Pond #2	
Pond Bottom Composite	*PB-SED-22*
Sidewall Composite	*SED-23*
Discrete Samples for VOCs	*PB-SED-22D-158-164, SED-23D*
Aeration Pond #3	
Pond Bottom Composite	*PB-SED-20*
Sidewall Composite	*SED-21*
Discrete Samples for VOCs	*PB-SED-20D-144-160, SED-21D*
West Oxidation Pond	
Pond Bottom Composite	*PB-SED-30, PB-SED-32, PB-SED-34, PB-SED-36*
Sidewall Composite	*SED-31, SED-33, SED-35, SED-37*
Discrete Samples for VOCs	*PB-SED-3OD, PB-SED-32D, PB-SED-34D, PB-SED-36D, SED-31B, SED-33B, SED-35B, SED-37B*
Marley Pond	
Pond Bottom Composite	*PB-SED-16*
Sidewall Composite	*SED-17*
Discrete Samples for VOCs	*PB-SED-16D-47-59, PB-SED-16D-84-96, SED-17D*
Spray Pond	
Pond Bottom Composite	*PB-SED-14*
Sidewall Composite	*SED-15*
Discrete Samples for VOCs	*PB-SED-14A-28-40, PB-SED-14A-58-70, SED-15A*

6.4 Laboratory Analyses

6.4.1 Methods

The samples from the sediment sampling program were analyzed for the modified Skinner List compounds, TPH-GRO, and TPH-DRO. In addition, pond bottom sediment samples (samples PB-SED-14A-28-40, PB-SED-14A-58-70, PB-SED-16D-84-96, PB-SED-18D-74-78, PB-SED-20D-144-160, PB-SED-22D-158-164, PB-SED-24B-156-162, PB-SED-26B-66-78, PB-SED-26B-88-100, PB-SED-28D, PB-SED-30D, PB-SED-34D PB-SED-

36D, and PB-SED-39D) were also analyzed for toxic characteristic leaching procedure (TCLP) volatiles, semi-volatiles, and metals. TCLP data will be used to support closure evaluations for the ponds.

Sample containers and volumes, preservatives, holding times, and quality assurance/quality control measures are presented in the Work Plan. One field duplicate and one matrix spike/matrix spike duplicate sample set were collected from the West Oxidation Pond.

The more conservative of the two KDHE Tier 2 Risk-Based Standards for Kansas (RSK; June 2007 revision) including Non-Residential Soil Pathway and Soil to Groundwater Pathway was selected for comparison with pond sediment data, and are referred to herein as Screening Levels.

6.4.2 Analytical Results

The sediment sample results from the wastewater/stormwater ponds are shown in **Tables 6a** through **6g** and **Figure 12**. **Figure 12** presents analytical data that were detected above laboratory reporting limits. Estimated (J) analytical values were presented for samples on **Figure 12** only if at least one sample contained a detectable level of an analyte. Analytical laboratory reports are presented in **Appendix B** for the pond sediment samples. There were 95 samples that contained analytes above the Screening Levels. The pond sediment sample results above the Screening Levels are summarized as follows (including "J" or estimated values):

- Metals: There were two exceedances of lead in PB-SED-30 (2,440 mg/kg) and PB-SED-36 (1,160 mg/kg).
- Semi-volatile Organic Compounds:
  - There were six exceedances of anthracene. The maximum concentration was 57,000D µg/kg in sample PB-SED-14-BOS.
  - There were four exceedances of benzo(a)anthracene. The maximum concentration was 93,000 µg/kg in sample SED-37.
  - There were sixteen exceedances of benzo(a)pyrene. The maximum concentration was 56,000 µg/kg in SED-37.

  - There were three exceedances of benzo(b)fluoranthene. The maximum concentration was 46,000 µg/kg in sample SED-37.
  - There were seventeen exceedances of chrysene. The maximum concentration was 210,000 µg/kg in sample SED-37.
  - There was one exceedance of dibenzo(a,h)anthracene in PB-SED-32 (2,900J µg/kg).
  - There were seven exceedances of naphthalene. The maximum concentration was 33,000J µg/kg in PB-SED-14-BOS.
  - There was one exceedance of pyrene in SED-37 (150,000 µg/kg).
- Volatile Organic Compounds:
  - There were fifteen exceedances of benzene. The maximum concentration was 5,500J µg/kg in sample PB-SED-26B-66-78.
  - There were three exceedances of carbon disulfide. The maximum concentration was 1,800J µg/kg in sample PB-SED-28D.
- Total Petroleum Hydrocarbons:
  - There were eight exceedances of TPH-DRO. The maximum concentration was 61,000 mg/kg in sample PB-SED-14-BOS.
  - There were eleven exceedances of TPH-GRO. The maximum concentration was 2,400 mg/kg in PB-SED-14A-58-70.
- None of the TCLP analysis samples exceeded the toxicity characteristic limit (40 CFR Part 261.24 Table 1).

6.4.3 Data Discussion

The collected data were compared to the applicable KDHE Tier 2 Non-residential RSK values. **Figure 12** show the pond sediment sample analytical results.

The exceedances (including estimated values) for sediment in each pond are as follows:

- Marley Pond – benzo(a)pyrene, chrysene, benzene, naphthalene, and TPH-GRO
- Spray Pond – anthracene, benzo(a)pyrene, chrysene, pyrene, benzene, carbon disulfide, naphthalene, TPH-GRO, and TPH-DRO
- Primary Pond - benzo(a)pyrene, chrysene, benzene, and TPH-GRO

- West Oxidation Pond - lead, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenz(a,h)anthracene, pyrene, benzene, naphthalene, carbon disulfide, TPH-GRO, and TPH-DRO
- Southeast Pond - carbon disulfide
- Equalization Basin – benzo(a)pyrene, chrysene, benzene, TPH-GRO, and TPH-DRO
- Aeration Pond #1 – benzene
- Aeration Pond # 2 - no exceedances
- Aeration Pond #3 – benzene
- Polishing Pond - no exceedances

None of the TCLP analysis samples exceeded the toxicity characteristic limit (40 CFR Part 261.24 Table 1).

Figure 11 shows the measured sediment thicknesses and estimated volume in each pond. The following sediment volumes in bank cubic feet were calculated:

- Spray Pond: 27,321 ft^3
- Marley Pond: 24,957 ft^3
- Primary Pond: 8,041 ft^3
- West Oxidation Pond: 112,139 ft^3
- Polishing Pond: 5,296 ft^3
- Aeration Pond #3: 26,576 ft^3
- Aeration Pond #2: 2,877 ft^3
- Aeration Pond #1: 3,284 ft^3
- Equalization Basin: 15,039 ft^3
- Southeast Pond: 25,909 ft^3

TOTAL: 251,439 ft^3

6.5 Deviations

There were no deviations from the Work Plan.

7.0 POND SOIL SAMPLING AND ANALYSIS

The pond boring program was completed to characterize the soil beneath the sediment in the facility ponds and to collect soil samples for laboratory analysis. The purpose of the pond boring program was to establish the extent of possible leaching from the pond sediments into the underlying soils. The pond boring locations are shown on **Figure 6**.

7.1 Methods

The pond borings were drilled with a direct push rig (GeoProbe® 420M) on a pontoon boat. Borings were advanced through the pond sediment and into the soil. Continuous cores were collected in butyl acetate liners and the recovered core was logged in accordance with the Unified soil Classification System (USCS) protocol by an MWH geologist. The core was also screened in one-foot intervals with an organic vapor analyzer equipped with a photo-ionization detector (PID). Samples for laboratory analysis were collected based on field observations (i.e., PID readings, staining, free product, and odor). The pond soil sampling was conducted during two separate events that occurred in November 2008 and May 2009. During the first event, it was noted that pond sediments were being inadvertently smeared into the shallow soil. Therefore, only deep soil samples were collected from this event for analysis. During the second event, measures were taken to prevent dragging sediments into underlying soils with the core barrel (described below). Samples for TPH-GRO and VOC analysis were collected first with TerraCore samplers. Samples for analysis of metals, SVOCs, and TPH-DRO were placed into 4oz. or 8oz. amber glass wide-mouth jars. The samples were immediately labeled and placed on ice and every evening sent via overnight delivery to the laboratory with COC documentation. The sampling tools were decontaminated after each sample collected.

Additional pond borings were drilled in May 2009 with a direct push rig (GeoProbe® 420M) on a pontoon boat to collect samples of the soil immediately beneath the pond sediment. Borings were advanced through the pond sediment and into the soil with a solid center drive point in the cutting shoe. The dual tube system was also wrapped in Visqueen while pushing through the sediment and approximately one to two feet into the soil. Once the desired depth was reached, the center drive point was removed from the shoe and the

system was advanced four feet into the underlying soil to collect a sample. This procedure was followed to prevent dragging the sediment down into the underlying soil. The first two feet (two to four feet below top of soil) of soil were collected from each boring and additional samples were collected based on field observations (i.e., PID readings, staining, free product, and odor). The additional soil samples were collected and handled in the same manner as described above.

Sample Designation

For this program, each sample has a unique sample identification, and consists of a Site identifier, sample type identifier, and depth identifier. The corresponding soil designation and the sample depth interval identifies soil samples. During the first pond soil boring event, sample depths were referenced from the pond surface water level. For example, a pond soil sample collected between 10 and 12 feet below the pond surface water level was designated PSB-04-10-12. During the second pond soil boring event, sample depths were referenced from the top of the pond soil surface. For example, a pond soil sample collected between 2 and 4 feet below the top of the pond soil surface was designated PSB-30-2-4. One field duplicate sample was collected for every twenty samples (i.e., a frequency of 5%). The sample identification for the duplicate sample included the above numbering scheme along with a fictitious number starting at 50. For example, a field duplicate sample collected from PSB-28-8.5-10 was reported as PSB-28-50.

7.2 Laboratory analyses

7.2.1 Methods

The samples from the soil sampling program were analyzed for the modified Skinner List volatiles, semivolatiles, and metals; and TPH-GRO and TPH-DRO. Sample containers and volumes, preservatives, holding times, and quality assurance/quality control measures were performed in accordance with the Work Plan.

The more conservative of the KDHE RSK Tier 2 Non-residential Soil Standards and the Soil to Groundwater Standards was used for comparison with pond soil data.

7.2.2 Analytical Results

The soil sample results from the wastewater/stormwater ponds are shown in **Tables 7a** through **7g** and **Figure 13**. There were 635 sample results that were above the laboratory reporting limits, of those, 25 were above the KDHE Tier 2 RSK Non-residential Soil or Soil to Groundwater Standards. **Tables 7a** through **7g**, **Figure 13**, and the following discussion of the pond soil sample analytical results reference the top of pond soil as the ground surface. **Figure 13** presents analytical data that were detected above laboratory reporting limits. Estimated (J) analytical values were presented for samples on **Figure 13** only if at least one sample contained a detectable level of an analyte.

The sample intervals for the pond soil boring samples collected during the first event have been corrected for the top of pond soil surface encountered in each boring. The pond soil sample results above the KDHE Tier 2 RSK Non-residential (Soil or Soil to Groundwater Pathway) values (including estimated values) are as follows:

- Metals did not have any exceedances.
- Semi-Volatile Organic Compounds: Two exceedances of pyridine in PSB-19-11.75-13.73 (140J µg/kg) and PSB-23-2.5-4.5 (130J µg/kg).
- Volatile Organic Compounds: Thirteen exceedances of benzene in PSB-06-3.75-5.75 (830J µg/kg), PSB-12-2-4 (280 µg/kg), PSB-22-2.25-4.25 (260J µg/kg), PSB-27-2-4 (740 µg/kg), PSB-27-7.5-9.5 (180 µg/kg), PSB-28-2-4 (820J µg/kg), PSB-28-10-12 (290 µg/kg), PSB-30-7-8.5 (330 µg/kg), PSB-31-2-4 (2,500JD µg/kg), PSB-32-2-4 (87 µg/kg), PSB-34-2-4 (6,500D µg/kg), PSB-35-2-4 (730 µg/kg), and PSB-36-2-4 (84J µg/kg).
- Total Petroleum Hydrocarbons: Ten exceedances of TPH-GRO in PSB-05-2.8-4.8 (370 mg/kg), PSB-06-3.75-5.75 (1,400 mg/kg), PSB-12-2-4 (750 mg/kg), PSB-19-11.75-13.75 (520 mg/kg), PSB-23-2.5-4.5 (340 mg/kg), PSB-27-2-4 (280 mg/kg), PSB-28-2-4 (470 mg/kg, PSB-30-7-8.5 (150D mg/kg), PSB-31-2-4 (380D mg/kg), and PSB-34-2-4 (310D mg/kg).

7.2.3 Data Discussion

The collected data were compared to the applicable KDHE Tier 2 RSK Non-residential values. **Tables 7a** through **7g** and **Figure 13** show the pond soil sample analytical results.

The exceedances for each pond are as follows:

- Marley Pond - benzene
- Spray Pond – benzene, and TPH-GRO
- Primary Pond – benzene, and TPH-GRO
- West Oxidation Pond – pyridine, Benzene, and TPH-GRO
- Southeast Pond - no exceedances
- Equalization Basin - no exceedances
- Aeration Pond #1 – benzene, and TPH-GRO
- Aeration Pond # 2 - no exceedances
- Aeration Pond #3 – benzene, and TPH-GRO
- Polishing Pond – TPH-GRO

Soils observed in pond soil borings were primarily described as silty clay (lean clay) overlying fractured limestone. Soil thicknesses were observed to range from 2.5 feet (PSB-21 and PSB-23) to 13 feet (PSB-15). Significant vertical migration of hydrocarbon constituents from the pond sediments into underlying soils would not be expected given the general low permeability of silty clay. However, based on analytical data, soil headspace gas readings, and field observations, some vertical leaching appeared to have occurred through the silty clay into the underlying fractured limestone at Aeration Pond #1, Aeration Pond #3, and the Spray Pond. Specific borings include PSB-06 (Aeration Pond #3), PSB-08 (Aeration Pond #3), PSB-12 (Aeration Pond #1), and PSB-28 (Spray Pond).

In the Polishing Pond, the Spray Pond, and the West Oxidation pond, the hydrocarbon impacts appeared to be largely due to migration of contaminated groundwater from upgradient sources rather than vertical migration of hydrocarbons from the pond sediment. This is evidenced by the PID readings and observations in borings PSB-05 (Polishing Pond), PSB-19 (West Oxidation Pond), PSB-22 (West Oxidation Pond), PSB-23 (West

Oxidation Pond), PSB-26 (Primary Pond), PSB-27 (Spray Pond), and PSB-30 (West Oxidation Pond) where higher levels of hydrocarbon impact were observed in the fractured limestone than in the overlying silty clay.

7.3 Deviations

There were not any deviations from the Work Plan.

8.0 SITE WIDE SOIL SAMPLING AND ANALYSIS

8.1 Background Soil

8.1.1 Sampling

The area in the vicinity of the refinery has a history of oil production activities. In fact, some areas near the refinery are classified by the Natural Resources Conservation Service (NRCS) as "Oil Wasteland" (Figure 3). Therefore, one important aspect of the soils characterization program was to establish background metals concentrations for the primary soil series represented on-Site. These data were used for comparison with soil analytical data from the Site.

Figure 3 shows the NRCS soil series at the Site. Five samples from each of the primary soil types at the Site were collected in the locations shown on **Figures 14** and **15**. Sampling consisted of collecting a grab sample with a clean, stainless steel hand auger from approximately 0.5 to 1.5 feet below ground surface (bgs) at each location. Additional samples were collected at each location for geotechnical analysis. The samples for geotechnical analysis were placed into 1-liter, zip-lock bags and thoroughly mixed. The samples for laboratory analysis were collected out of the zip-lock bags and placed into 8-oz amber glass wide mouth jars. Sample collection methodologies detailed in the Work Plan were followed.

8.1.2 Analysis

Background soil samples were submitted via overnight delivery under COC control to TestAmerica Labs in Buffalo, New York. The samples were analyzed for Skinner List metals. Analytical results are summarized on **Table 8** and the laboratory reports are included in **Appendix B**.

One representative soil sample from each of the primary soil types was also collected for geotechnical testing to confirm soil characteristics. The geotechnical testing was performed by GSI Services, Inc. of Wichita, Kansas.

Geotechnical testing included:

- Atterberg Limits
- Sieve Analysis
- Specific Gravity
- Moisture Content

Sample containers and volumes, preservatives, holding times, and quality assurance/quality control measures followed during the investigation were presented in the Work Plan.

8.1.3 Data Evaluation

The ProUCL software was used to compare background metal concentrations to metal levels detected in shallow soils during the Third Phase Investigation. The ProUCL evaluation, which is included in **Appendix D**, included the following steps:

1) Characterization of background and Site data sets The data were extracted, compiled and separated into detect and non-detect values based on the qualifier flags. Duplicate samples were removed. Data were input into the ProUCL format.
2) Calculate Summary Statistics Basic statistics were estimated for both the background and Site data sets. These help to characterize the data available; however, the summary statistics only apply to detect values.
3) Goodness-of-Fit (GOF) Tests The background and Site datasets were tested for goodness of fit to see if they followed a normal, log-normal or gamma distribution. This is important since the outlier tests and methods to estimate ND values using regression on order statistics (ROS) methods require that the data follow a normal distribution.
4) Outlier Tests Require that data follow a normal distribution. Box Plots were considered as a method to identify outliers.
5) Estimating ND Values with ROS methods This involves extrapolating non-detects based upon certain distributional assumptions about detected and nondetected observations.
6) Two-sample Hypothesis Testing Approach to compare the parameters and distributions of two populations based upon data sets collected from each.

Based on the test results described in **Appendix D** and the box plot comparisons, the concentrations of the following metals at the Site exceed background levels: arsenic, barium, cadmium, chromium, lead, magnesium, mercury, nickel, potassium and zinc. The results of the background evaluation are discussed further in Section 8.4.3.

8.2 On-Site Soil Sampling

The following subsections present the details of the on-Site soil sampling program. Sample locations, drilling techniques, sampling methods, analytical test methods, and analytical results are all presented herein.

8.2.1 Sample Locations

Borings that were drilled at the Site as part of the Third Phase Investigation are shown on **Figures 14** and **15** for the northern and southern portions of the Site, respectively. Borehole logs and well completion forms are included in **Appendix E**. In order to evaluate potential source areas at the Site, the boring locations were biased to former tank areas, potentially impacted areas along removed pipelines, and former process areas based on data from prior investigations and from information collected about prior Site use.

8.2.2 Methods

Soil borings were drilled to assess impacts in both the vadose and the saturated zones. Borings were drilled with either a direct push rig (GeoProbe®) or a hollow-stem auger rig (Failing and CME). Borings were typically advanced to the top of competent bedrock or until refusal. The direct push rig was generally used in areas that contained greater thicknesses of overburden on top of bedrock. A tricone bit was used to break through the limestone in certain areas.

When drilling refusal occurred above 2 feet bgs, a field decision was made to either utilize the shortened sample interval or move the sample location. Continuous cores were collected in all borings. The recovered core was screened using techniques described in the next section, with an organic vapor analyzer equipped with a photo-ionization detector (PID). The 0 to 2 feet bgs interval was collected in the majority of the borings for laboratory analysis (samples were not collected in the supplemental borings, TW-81

through TW-131). Additional sample intervals were collected from both the unsaturated and the saturated zones in selected borings based on field observations (i.e. PID readings, staining, free product, and odor). The PID readings are summarized on the boring logs in **Appendix E** and in four-foot vertical intervals (i.e., 0 to 4 feet, 4 to 8 feet, etc.) on soil headspace gas maps in **Appendix F**.

The area surrounding a former flare at the northern portion of the MPA was sampled in June 2006 prior to construction of a land farm in that area. The land farm was utilized for management of excess soil generated during the installation of the interim measure groundwater interceptor trench along the eastern property boundary. Samples were collected from 20 locations in the area and tested for volatiles, semivolatiles, TPH-GRO and TPH-DRO, and metals. These data are presented in **Appendix G**. As shown by the data in **Appendix G**, other than arsenic in one sample (72 mg/kg, sample A1-1.5-2) and lead in three samples (up to 1,600 mg/kg, sample D3-0.75-1), no Screening Level exceedances were detected in the samples.

The inset map on **Figure 15** shows the location where buried materials were encountered in the north central portion of the STF. Sixteen shallow borings were drilled (STFPSB-01 through STFPSB-16) in one day near the area to assess the extent of the buried materials. The burial area was discovered when USA Environment, LP (USA) was digging an exploratory trench to locate pipelines. The burial area contained a variety of debris including material that is typically associated with tank bottoms. The 16 shallow borings were installed on 20-foot centers with a Geoprobe® to a maximum depth of eight feet, transecting the burial area. Soil samples were collected continuously at each boring location, logged, and screened with a PID at one-foot intervals by an MWH geologist. One sample of the material was collected and submitted for laboratory analysis for the Modified Skinner List VOCs, SVOCs, and metals; and TPH-GRO and TPH-DRO.

Additional shallow (0.5 to 1.5 feet) soil samples were collected from within the former large tank berm areas at the Site. In the locations shown on **Figures 14** and **15**, samples were collected using clean hand augers or with a direct-push rig.

Borings were converted into temporary wells when potentially impacted groundwater was encountered during drilling. There were 137 borings converted to temporary wells as part of the investigation. The temporary well locations are shown on **Figures 14** and **15**. Temporary well installation procedures are discussed in Section 10.2.

Samples from each of the representative soil types shown on **Figure 3** within the sampling areas shown on **Figures 14** and **15** were collected for geotechnical testing in order to confirm soil types across the Site.

Additional Field Protocols Presented in the Work Plan

A Central Mine Equipment (or similar) split barrel sampling system was utilized to continuously collect soils when drilling with the hollow-stem auger. Direct push soil sampling was conducted by advancing a soil probe into the subsurface using a hydraulic ram. Soils collected with the direct push rig were continuously sampled and contained in butyl acetate liners. The sampler was retrieved from the borehole and opened to expose the liner containing the soil sample. Soils were logged in accordance with the Unified Soil Classification System (USCS) protocol by a MWH geologist.

Soil headspace gas was monitored in the field from ground surface to total boring depths using a PID. Each sample core was split down the middle. Half of the core was divided into 1-foot and 2-foot composites, then placed into zip lock bags. The zip-lock bags were allowed to sit at ambient temperature for a minimum of 20 minutes, and were screened with a PID calibrated to an isobutylene standard. The remaining, undisturbed half of the soil core was utilized as needed for sample collection purposes.

Soil samples collected for VOC analysis were collected in accordance with USEPA Method 5035 to prevent loss of volatiles. TerraCore samplers were utilized, and the filled, capped samplers were immediately placed on ice. TerraCore samplers were also used for TPH-GRO samples. A 40-ml glass vial preserved with methanol was used for the MADEPVPH samples. Soil samples collected for other analyses were placed in decontaminated stainless steel bowls and homogenized prior to placement in 4oz. or 8oz. amber glass wide mouth jars. After collection, the samples were immediately placed on ice and every evening sent

via overnight delivery to TestAmerica Laboratory in Buffalo, New York, under chain-of-custody control.

Borings were designated consecutively beginning with SB-1 if not completed as a temporary well and with TW-1 if completed as a temporary well. Borings converted to temporary wells were assigned a well designation as discussed in Section 10.2. In addition, numerous shallow borings (0 to 2 feet) were advanced to evaluate the extent of shallow impact at the Site. Shallow borings were designated consecutively beginning with BH-001. Each sample was given a unique sample identification, and consisted of a Site identifier, sample type identifier, and depth identifier, when appropriate. The corresponding boring designation and the sample depth interval identify soil samples collected from borings. For example, a soil sample collected between 0 and 2 feet in boring SB-14 was designated SB-14-0-2. One field duplicate sample was collected for every twenty samples (i.e., a frequency of 5%). The sample identification for the duplicate sample included the above numbering scheme along with a fictitious number starting at 50. For example, a field duplicate sample collected from SB-14 was reported as SB-14-50. Boring logs are presented in **Appendix E**.

Borings not converted to monitoring wells were abandoned by either filling with hydrated bentonite or cement/bentonite grout. The surface depression was filled with top soil or fill material to the existing ground surface. Soil cuttings were transported to the landfarm at the northern portion of the Site. The boring and temporary well locations were surveyed by Carlson-Baughman, of Hays, Kansas.

The field equipment was used and maintained according to the manufacturer's directions. General guidelines on calibration and operating procedures for typical field equipment were described in the Work Plan. Field personnel recorded PID readings in the field notebook used to document field procedures. The instrument was calibrated prior to use according to the manufacturer's specifications. The instrument calibration was checked at the end of each day of use and any time meter drift was suspected. All calibration information was recorded in the field book.

8.3 Geotechnical Testing

8.3.1 Methods

A total of five (non-background) samples were collected for geotechnical analysis of:

- Atterberg Limits
- Sieve Analysis
- Specific Gravity
- Moisture Content

The geotechnical testing was conducted by GSI Services, Inc. Sample containers and volumes, preservatives, holding times, and quality assurance/quality control measures are presented in the Work Plan

8.3.2 Geotechnical Testing Results

The geotechnical results of the soil samples are in **Appendix H**. The soil samples tested were found to be lean or fat clays (CL or CH) with specific gravity range from 2.59 to 2.71. The average plastic limit was 21%, the average liquid limit was 50%, and the average plasticity index was 29%. The average percent water content was 30%. The 15 background soil samples and the five samples from "nonbackground" areas had very similar geotechnical results.

8.4 Laboratory Analyses

8.4.1 Methods

The majority of samples collected were analyzed for the modified Skinner List metals, TPH-GRO and TPH-DRO, and benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX). Approximately ten percent of the samples were analyzed for the modified Skinner List volatiles, semi-volatiles, and metals; TPH-GRO and TPH-DRO; and hydrocarbon fraction analysis by the MADEPVPH and MADEPEPH methods. Samples collected below the groundwater table were largely analyzed only for TPH-GRO and TPH-DRO to support remedial action planning. In addition, selected samples from heavily impacted areas were analyzed for TCLP metals, volatiles, and semivolatiles.

8.4.2 Analytical Results

The soil samples from the borings are shown in **Tables 7a** through **7g.** There were 198 sample results that were above the KDHE RSK Non-residential Soil Standards (Screening Levels). The soil sample results (including estimated values) above Screening Levels are summarized below.

- Metals:
  - There were nineteen exceedances of lead. The maximum concentration was 28,000 mg/kg in sample SB-25-4-6.
  - There were two exceedances of arsenic in STFPSB-2-4 (243 mg/kg) and in A1-1.5-2 (72 mg/kg).
- Semi-Volatile Organic Compounds:
  - There was one exceedance of anthracene in SB-23-0-2 (18,000 µg/kg).
  - There were two exceedances of chrysene. The maximum concentration was 8,200DJ µg/kg in sample SB-35-0-2-Dup.
  - There were six exceedances of naphthalene. The maximum concentration was 290,000J µg/kg in sample STFPSB-02-2-4.
- Volatile Organic Compounds:
  - There were sixty-nine exceedances of benzene. The maximum concentration was 500,000D µg/kg in sample TW-55-4-6.
  - There was one exceedance of chloroform in SB-11-6-8 (1,200 µg/kg).
  - There were three exceedances of ethylbenzene. The maximum concentration was 84,000D µg/kg in sample TW-33-4-4.5.
  - There were six exceedances of methyl tert-butyl ether (tert-butyl methyl ether). The maximum concentration was 41,000D µg/kg in sample TW-38-10-12.5.
- Total Petroleum Hydrocarbons:
  - There were three exceedances of TPH-DRO. The maximum concentration was 34,000 mg/kg in sample SB-09-0-2.
  - There were eighty-seven exceedances of TPH-GRO. The maximum concentration was 9,400J mg/kg in sample SB-26-5-8.

8.4.3 Data Discussion

The boring logs (**Appendix E**) and the geotechnical test results (**Appendix H**) describe the unconsolidated material as lean or fat clay (CL or CH). As noted on the boring logs, the unconsolidated material overlies weathered bedrock. **Figure 16** shows the depth to bedrock observed in the boreholes, giving the approximate thickness of the shallow alluvial/unconsolidated material on Site. The depth to bedrock ranges from zero feet at localized outcrops (primarily at the western and southwest portions of the Site) and in the STF Creek, to over 25 feet near the MPA and STF border. The depth to bedrock in the MPA is generally greater than in the STF area. **Figure 17** shows the top of bedrock structure-contour map, which depicts two main paleovalleys beneath the unconsolidated material that could be preferential flow paths for groundwater. Coarse-grained materials and rock fragments are often found on top of bedrock within paleovalleys, which increase permeability in these areas. One paleovalley trends southwest-to-northeast from the northern portion of the STF to the middle of the wastewater/stormwater ponds. The second paleovalley, which is located in the southern portion of the STF, trends west to east. The cross-sections (**Figures 18** through **34**) depict the relationship between the unconsolidated material, top of bedrock, and the groundwater. **Figure 35** depicts the Groundwater Potentiometric Surface Map – 2009, and **Figure 36** presents the Bedrock Structure-Contour Map and Shallow Groundwater Potentiometric Surface Map – 2009.

Soil sample analytical data for metals were statistically compared with Site-specific background values. This evaluation is included in **Appendix D**. As shown in **Appendix D**, the following metals exceeded background levels in on-Site soils: arsenic, barium, cadmium, chromium, lead, magnesium, mercury, nickel, potassium, and zinc.

Soil data were also compared with the applicable KDHE Tier 2 Non-residential RSK values (Screening Levels). Screening Level exceedances for the Site areas are as follows:

- MPA – 2-methylnaphthalene, anthracene, benzene, ethylbenzene chloroform, chrysene, TPH-DRO, TPH-GRO, and naphthalene,
- STF – Benzene, ethylbenzene, TPH-DRO, TPH-GRO, MTBE, and naphthalene,

None of the samples submitted for TCLP analysis exceeded the maximum toxicity criteria (40 CFR Part 261.24 Table 1).

Figures 37 and **38** present 0 to 32 foot composite soil headspace gas data maps for the northern and southern portions of the Site. Soil headspace gas levels in soil qualitatively illustrate the locations of volatile impacts in both saturated and unsaturated zone soils. The figures show that the majority of the elevated PID measurements were located in the MPA. Darker shading beneath the water/stormwater pond can also be seen with the impacts likely following the preferential flow paths of the fractured bedrock and the paleovalleys. The primary areas of VOC impact indicated at the STF by **Figures 37** and **38** are in the former tank dike area in the northwest corner and due south of the STF Creek in the southwest portion of the area.

The soil headspace gas and organic analytical data map series are presented on **Figures 39** through **54**. These maps show soil headspace gas and organic analytical data in four-foot vertical intervals (i.e., 0 to 4 feet, 4 to 8 feet, etc.) at the Site. Data points used for the preparation of the soil headspace gas maps are presented on the maps in **Appendix F**. The soil headspace gas and organic analytical data maps only show analytical data above Screening Levels.

Figure 39 shows the northern 0 to 4 foot interval map. The map shows numerous locations of organic constituent Screening Level exceedances in the MPA, AHA, and the northern portion of the STF. This is indicative of multiple shallow hydrocarbon releases in these areas. Shallow impacts in the AHA are likely due to management (stabilization, mixing and spreading) of liquid asphaltic wastes in this area. The southern 0 to 4 foot map (**Figure 40**) shows more localized shallow release sites adjacent to former tank locations south of the STF Creek.

Impacts due to source area releases and vertical migration of VOCs are illustrated in **Figures 39** through **Figure 54**. As shown on **Figure 53** (28 to 32 foot interval), the maximum vertical migration of VOCs occurred through bedrock in the vicinity of the AHA liquids pit and within the former tank farm in the northwest corner of the STF.

Lead levels detected above Screening Levels in soil are shown on **Figure 56.** As shown on **Figure 56,** soils impacted with lead are located at the southern, northern, and east-central portions of the MPA and the northern portion of the STF. Lead concentrations up to 2,020 mg/kg (STFPSB-02) and 28,000 mg/kg (SB-25) were detected in the STF and the MPA areas, respectively. Above pH 6, lead sorbs strongly to high cation exchange soils (such as the clay underlying the Site) and is relatively immobile (EPA, 1992). The immobility of the absorbed lead in soil is further evidenced by the fact that none of the groundwater samples collected contained dissolved lead levels above Screening Levels (discussed in Section 10).

Elevated lead (2,020 mg/kg,), TPH-DRO (27,000 mg/kg), TPH-GRO (2,900 mg/kg) were detected in the waste sample STFPSB 02 (2 to 4 feet), which was collected in the buried waste area in the northern portion of the STF. Based on observations made in the borings in this area, the area of the waste is approximately 2,000 square feet and the depth is approximately 5 feet. Based on the lack of Screening Level exceedances detected in the soil sample collected beneath the burial area (STFPSB-02, 5 to 7 feet), the waste in the burial pit has not leached significantly into underlying soils.

8.5 Deviations

Statistical evaluations of background data were conducted using the EPA ProUCL Program rather than the method proposed in the Work Plan. The approach utilized was consistent with the methods that were approved by the KDHE for use in the Site Risk Assessment.

9.0 ASPHALT HANDLING AREA SAMPLING AND ANALYSIS

The AHA is an area that has historically been used for handling excess liquid and solid asphaltic materials from the refining operation. The approximate extent of the AHA is shown on **Figure 55**. These materials were placed into a liquid storage pit at the Site and subsequently solidified, and stockpiled around the pit. The AHA investigation included trenching the stabilized soil material and the liquid storage pit with a backhoe, field screening of waste and soil, and analytical testing. Sampling of the sediment adjacent to the AHA Spring located at the southeast portion of the AHA, and installation and sampling of groundwater wells in the AHA are discussed in Sections 4 and 10, respectively.

9.1 Sampling Locations

The current configuration of the AHA includes a number of material piles and one liquid storage pit. The pit dimensions are approximately 245 feet by 160 feet by 8 feet. The area was inaccessible to drilling equipment. Accordingly, a backhoe was utilized to access the soils/wastes for sampling. A number of backhoe trench locations were randomly selected and are shown on **Figure 55**.

9.2 Field Methods

Each exploratory trench was extended through the material piles to the approximate top of bedrock or to backhoe refusal, whichever occurred first as described in the Work Plan. The intent of the trenching was to collect samples for waste characterization, evaluate the extent of the waste material, and to evaluate potential migration of the waste into soils and bedrock within the AHA. A track-hoe was used to trench the material piles. The track-hoe bucket was decontaminated with a pressure washer between each trench.

Soils in the trench were logged in accordance with the USCS protocol by an MWH geologist. Notes collected during the trench installation are included in **Appendix C**. Samples for soil headspace gas were monitored in the field from ground surface to total excavation depths with a PID. Composite soil samples from each two foot interval of trench depth were collected and placed into zip lock bags. The zip lock bags were allowed to sit at ambient (or in the heated field vehicle during cold weather days) temperature for a

minimum of 20 minutes, and then screened with a PID calibrated to an isobutylene standard. The PID readings are summarized in the field notes/field logs and are in **Appendix C**. Three composite soil samples from each trench (one from the top, middle, and bottom of the trench) were collected for analytical testing.

Soil samples collected for VOC and TPH-GRO analysis were collected in accordance with USEPA Method 5035 to prevent loss of volatiles. TerraCore samplers were utilized, and the filled, capped samplers were immediately placed on ice. A 40-ml glass vial preserved with methanol was used for the MADEPVPH samples. Soil samples collected for other analyses were placed in decontaminated stainless steel bowls and homogenized prior to placement in 4oz. or 8oz. amber glass wide mouth jars. After collection, the samples were immediately placed on ice and every evening sent via overnight delivery to TestAmerica Laboratory in Buffalo, New York, under chain-of-custody control.

For this program, each sample has a unique sample identification, and consists of a Site identifier, sample type identifier, and depth identifier, if appropriate. The corresponding material designation and the sample depth interval identify the samples collected. For example a soil sample collected from Trench 2 between 1 and 2 feet from the surface had the designation of TR-2-1-2. One field duplicate sample was collected for every twenty samples (i.e., a frequency of 5%). The sample identification for the duplicate sample includes the above numbering scheme along with a fictitious number starting at 50. For example a field duplicate sample collected from Trench 2 was reported as TR-2-50.

After collection of samples, all trenches were backfilled with excavation spoils to the original ground surface to avoid creating a safety hazard. Soils were field compacted with the backhoe bucket.

Each trench location was surveyed using a handheld GPS unit as described in the Work Plan. The GPS unit possessed sub-meter accuracy, with higher accuracy depending upon weather conditions, assuring accurate placement on the maps.

The field equipment was used and maintained according to the manufacturer's directions. General guidelines on calibration and operating procedures for typical field equipment were described in the Work Plan. Field personnel recorded PID readings in the field notebook used to document field procedures. The instrument was calibrated prior to use according to the manufacturer's specifications. The instrument calibration was checked at the end of each day of use and any time meter drift was suspected. All calibration information was recorded in a field book.

9.3 Laboratory Analyses

9.3.1 Methods

The majority of samples collected were analyzed for the modified Skinner List metals, TPH-GRO and TPH-DRO, and BTEX. Approximately ten percent of the samples were analyzed for the modified Skinner List volatiles, semi-volatiles, metals; TPH-DRO and TPH-GRO; and hydrocarbon fraction analysis by the MADEP VPH and EPH hydrocarbon fraction methods. In addition, selected samples from heavily impacted areas were analyzed for TCLP metals, volatiles, and semi-volatiles.

9.3.2 Analytical Results

The analytical results for the soil samples from the trenches are shown in **Tables 9a** through **9g**. Analytical laboratory reports are presented in **Appendix B** for the AHA samples. **Figure 55** presents analytical data that were detected above Screening Levels.

Fifty-five samples contained analytes above the KDHE Tier 2 RSK Non-residential Soil or Soil to Groundwater Standards (Screening Levels). The soil sample results (including estimated values) are summarized below.

- Metals: One exceedance of lead in TR-10-2-3 (6,370 mg/kg)
- Semi-volatile Organic Compounds:
  - There was one exceedance of 2,4 dinitophenol in TR-05-2-4 (12,000 µg/kg).
  - There were three exceedances of benzo(a)anthracene. The maximum concentration was 44,000J µg/kg in sample TR-11-4-5.

  - There were twenty-four exceedances of benzo(a)pyrene. The maximum concentration was 35,000J µg/kg in sample TR-11-4-5.
  - There were seventeen exceedances of chrysene. The maximum concentration was 81,000 µg/kg in sample TR-10-2-3.
  - There were four exceedances of dibenzo(a,h)anthracene. The maximum concentration was 8,500J µg/kg TR-10-2-3.
  - There was one exceedance of naphthalene in TR-11-4-5 (10,000J µg/kg).
- Volatile Organic Compounds:
- There were two exceedances of benzene in TR-03-4-6 (82 µg/kg), and TR-11-4-5 (1,100DJ µg/kg).
- Total Petroleum Hydrocarbons:
  - There was one exceedance of TPH-DRO in TR-03-4-6 (17,000 mg/kg)
  - There was one exceedance of TPH-GRO in TR-11-4-5 (220 mg/kg)

9.3.3 Data Discussion

A backhoe was used to trench through the material piles in the AHA to the approximate top of bedrock or to backhoe refusal. Since bedrock in the AHA occurs between approximately 1.9 and 8 feet below ground surface, soil samples were not collected beneath each material pile.

The collected data was compared to Site-specific background values and to the applicable Screening Levels.

None of the samples submitted for the TCLP analysis exceeded the maximum toxicity characteristic levels (40 CFR Part 261.24 Table 1).

The estimated volume of waste within the AHA pit is 313,425 bank cubic feet. The estimated volume within the piles surrounding pit, based on field observations and the areas observed on **Figure 55**, is 548,181 bank cubic feet.

9.4 Deviations

There were no deviations from the Work Plan.

10.0 GROUNDWATER SAMPLING AND ANALYSIS

This section presents the groundwater investigation component of the Third Phase Investigation. Subjects presented in this section include monitoring well locations, installation methods, sampling, and analytical methods and results.

10.1 Monitoring Well Location

There were 68 existing wells at the site prior to the Third Phase Investigation. There were 137 new monitoring wells installed as part of the Third Phase investigation. The additional groundwater monitoring wells were installed at the Site as part of the Third Phase Investigation in order to further delineate the extent of dissolved phase and light non-aqueous phase liquid (LNAPL) plumes detected during the Second Phase Investigation. In addition, data from new monitoring wells were utilized in conjunction with the data collected from the soil borings (described in Section 6), to delineate potential source areas. **Figures 14** and **15, and Plate 1,** show the locations of borings and wells installed as part of the Third Phase Investigation.

The majority of the new monitoring wells were installed near former tank locations and process areas, which are potential source areas for soil and groundwater impacts. In other locations, wells were installed to provide better delineation of known dissolved phase contaminant plumes.

All wells were surveyed by a state-licensed surveyor. The top of well casing and ground surface adjacent to each well was surveyed to determine northing and easting coordinates, as well as elevation. These data are presented in **Table 1**. Table 1 also presents the monitoring well construction details for all of the wells on Site.

10.2 Monitoring Well Installation

All of the new monitoring wells were installed as temporary wells, with the option of conversion at a later date to permanent monitoring wells. **Figures 14** and **15** show the locations of the new monitoring wells. Recommendations for which wells to retain as permanent wells are provided in Section 14.

Prior to the start of the Third Phase Investigation field work activities, proposed monitoring well locations were assigned consecutively numbered names beginning with TW-01. Of the 138 TW locations which were drilled, 127 locations were completed as monitoring wells. Ten of the SB soil boring locations (SB-04, SB-08, SB-09, SB-11, SB-14, SB-17, SB-30, SB-36, SB-37, and SB-38) were also completed as permanent monitoring wells.

A truck-mounted, hollow-stem auger rig or a direct push rig was utilized to advance borings within the unconsolidated material and into the weathered portion of the Fort Riley Limestone at the Site. Soil samples were continuously collected with a Central Mine Equipment (or similar) split barrel sampling system. Soils were logged in accordance with the USCS protocol by an MWH geologist. After drilling, any borings not converted into wells (e.g., dry holes) were backfilled with hydrated bentonite chips or cement/bentonite grout in accordance with the Kansas water well construction regulations.

One hundred twenty-seven monitoring wells were installed with a hollow-stem auger or a direct-push rig and were constructed of 2-inch, Schedule 40 PVC casing. Each well screen was between 5 and 15 feet in length and was 0.01-inch slot. The well screen extended across the groundwater table at the time of drilling within the unconsolidated material and/or weathered bedrock (under water table conditions). Well screen locations in deeper bedrock wells were located based on field observations of fracture locations, hydrocarbon staining, and PID readings. PVC blank casing extend from the top of the well screen to the ground surface. The annular space between the borehole wall and the well screen was filled with appropriately sized silica sand from the bottom of the borehole to approximately one to two feet above the top of the well screen. Approximately two feet of hydrated bentonite pellets were placed above the silica sand. Shallow (designated with an “S”) and deep (designated with a “D”) well clusters were located at the northwest portion of the STF within the Fort Riley Limestone. The well clusters were installed to evaluate potential vertical groundwater gradients in the area.

Ten monitoring wells installed with a direct push rig were constructed with 1-inch, PVC casing. Each well screen was between 3 and 15 feet in length and was 0.01-inch slot. The well screen extended across the groundwater table at the time of drilling within the

unconsolidated material and/or weathered bedrock. PVC blank casing extend from the top of the well screen to the ground surface. The annular space between the borehole wall and the well screen was filled with appropriately sized silica sand from the bottom of the borehole to approximately two feet above the top of the well screen. Approximately two feet of hydrated bentonite pellets were placed above the silica sand.

Boring and well completion logs are included in **Appendix E**. A summary of well completion information is presented on **Table 1**.

10.3 Well Development

The monitoring wells were developed prior to sampling using clean bailers or submersible pumps. Five well volumes of groundwater were purged from each well prior to sampling, and the pH, specific conductivity, temperature, oxidation-reduction potential (ORP), and dissolved oxygen levels were monitored. The well development notes and a summary of the field parameters are in Appendix C.

10.3.1 Field Measurements and Sampling

Prior to sampling, fluid levels were measured in all the wells at the Site. Monitoring wells were purged and sampled using low flow sampling techniques utilizing the methods specified in the Work Plan. For the shallow temporary wells (< 20 feet), a peristaltic pump was utilized to conduct low flow sampling in place of the bladder pump specified in the Work Plan. If insufficient groundwater was present in a well to use low flow methods, then clean, dedicated polyethylene bailers were utilized for this purpose. If LNAPL was encountered in a monitoring well, the LNAPL thickness was measured using an oil-water interface probe. Monitoring wells containing LNAPL were not sampled. Field parameters (pH, specific conductivity, temperature, ORP, and dissolved oxygen) were monitored during well development and sampling. Field parameter data are presented on **Table 3**.

The field equipment was used and maintained according to the manufacturer's directions. General guidelines on calibration and operation procedures for typical field equipment were described in the Work Plan.

10.3.2 Groundwater Level Measurements

Groundwater levels were measured in all of the wells between February 10 and 12, 2009 (except SB-04, TW-02, and TW-09, which were in ponded water areas and were inaccessible). The groundwater level measurements and field data are in **Tables 2a** and **3**, and the field notes are in **Appendix C**. A groundwater potentiometric surface map is included on **Figure 35**. LNAPL in groundwater maps are included on **Figures 57** (historical) and **58** (February 2009 data).

Depth to groundwater in February 2009 ranged from -0.25 feet (confined conditions) in monitoring well TW-87 to 36.31 feet in monitoring well TW-32D. Measured groundwater elevations (not including piezometers installed in the groundwater interceptor trench) ranged from 1325.26 feet NGVD (monitoring well W-29S at the northwest corner of the Site) to 1274.56 feet NGVD (monitoring well W-01S located between the southern end of the interceptor trench and the WBWR) in February 2009. Apparent LNAPL was measured in February 2009 at thicknesses up to 2.39 feet (monitoring well N2-5).

10.4 Laboratory Analyses

10.4.1 Methods

For this program, each well sample had a unique sample identification, which consisted of a Site identifier and a sample type identifier. For example, a groundwater sample collected from monitoring well OW-1 was designated OW-1. One field duplicate sample was collected for every twenty samples (i.e., a frequency of 5%). The sample identification for the duplicate sample included the above numbering scheme along with a fictitious number starting at 50. For example, a field duplicate sample collected from OW-1 was reported as OW-1-50.

Groundwater samples from the Third Phase Investigation wells were analyzed for the modified Skinner List volatiles, semi-volatiles, and metals; and TPH-GRO and TPH-DRO. Approximately 10 percent of the groundwater samples were also analyzed by the MADEP VPH and EPH hydrocarbon fraction methods. Samples for MADEP VPH and EPH analysis were collected in areas thought to be representative of major source areas.

Sample containers and volumes, preservatives, holding times, and quality assurance/quality control measures are presented in the Work Plan. One field duplicate and one MS/MSD sample set were collected from approximately 5 percent of the samples. In addition, a trip blank was submitted for VOC analysis (one per cooler). Field blanks were also collected at a 5 percent frequency.

10.4.2 Analytical Data

Groundwater sample analytical data are presented in **Appendix B**. In addition, the data are summarized in **Tables 10a** through **10e** and **Figures 59** through **63**. There were 630 sample results that were above the KDHE Tier 2 RSK Residential Groundwater Standards (Screening Levels). The groundwater sample results above Screening Levels (including estimated values) are summarized below. **Figures 59** through **63** do not show estimated values (J).

- Metals:
  - There were forty exceedances of arsenic. The maximum concentration was 176 µg/L in sample TW-55.
  - There were four exceedances of barium. The maximum concentration was 3,110 µg/L in sample TW-79.
  - There were two exceedances of lead in SB-11 (197 µg/L) and SB-37 (33.6 µg/L) detected during the February 2008 groundwater sampling event. These wells were redeveloped and resampled in February 2009 (both filtered and unfiltered groundwater samples were collected in February 2009). Lead levels were below the Screening Level in February 2009 in both wells (SB-11, 13.1 µg/L and SB-37, 7 µg/L). The exceedances in February 2008 were most likely due to suspended sediment in the wells.
  - There were eighty-six exceedances of manganese. The maximum concentration was 9,370 µg/L in sample OW-23T.
- Semi-Volatile Organic Compounds:
  - There were two exceedances of 2,4-dimethylphenol. The maximum concentration was 14,000D µg/L in TW-55.

- There were two exceedances of 2-methylphenol (o-cresol). The maximum concentration was 6,300D µg/L in TW-67.
- There were two exceedances of methylphenol (M & P-cresols). The maximum concentration was 9,400D µg/L in TW-67.
- There was one exceedance of benzo(a)anthracene in SB-09 (1 µg/L).
- There were two exceedances of bis(2-ethylhexyl)phthalate in TW-27 (6 µg/L), and TW-39 (6 µg/L).
- There were twenty-three exceedances of naphthalene. The maximum concentration was 260 µg/L in sample TW-46.
- There were two exceedances of phenol in TW-55 (2,000D µg/L), and TW-67 (5,900D µg/L).
- There was one exceedance of pyridine in TW-67 (40 µg/L).

- Volatile Organic Compounds:
  - There were three exceedances of 1,1,2-trichloroethane. The maximum concentration was 320D µg/L in sample ES-03 10-30-2007.
  - There were two exceedances of 1,1 dichloroethene in ES-03 10-30-2007 (16 µg/L), and ES-03 2-19-2009 (39 µg/L).
  - There were thirty-two exceedances of 1,2,4-trimethylbenzene. The maximum concentration of 1,300D µg/L was in sample TW-106S.
  - There were two exceedances of 1,2-dichloroethane in ES-03 10-30-2007 (5 µg/L), and ES-03 2-19-2009 (15 µg/L).
  - There was one exceedance of 1,2-dichloropropane in ES-01 (5 µg/L).
  - There were nineteen exceedances of 1,3,5-trimethylbenzene (mesitylene). The maximum concentration was 410D µg/L in sample TW-106S.
  - There were four exceedances of acetone. The maximum concentration was 1,300 µg/L in sample TW-67.
  - There were seventy-five exceedances of benzene. The maximum concentration was 79,000D µg/L in sample TW-55.
  - There were two exceedances of carbon disulfide in SB-17 (17 µg/L), and TW-67 (22 µg/L).
  - There was one exceedance of ethylbenzene in TW-46 (740D µg/L).

- There was one exceedance of methyl ethyl ketone (2-Butanone) in TW-67 (1,900 µg/L).
- There was one exceedance of methyl isobutyl ketone (4-Methyl-2-Pentanone) in TW-67 (100 µg/L).
- There were fifty-five exceedances of methyl tert-butyl ether (tert-butyl methyl ether). The maximum concentration was 38,000 µg/L in TW-38.
- There were two exceedances of methylene chloride in OW-13 (97JB µg/L), and TW-36 (400JB µg/L).
- There were fifty-five exceedances of naphthalene. The maximum concentration was 630D µg/L in sample TW-45.
- There were three exceedances of n-butylbenzene. The maximum concentration was 28J µg/L in OW-13.
- There were twenty-seven exceedances of n-propylbenzene. The maximum concentration was 130 µg/L in TW-46.
- There was one exceedance of sec-butylbenzene in TW-115 (330 µg/L).
- There was one exceedance of trichloroethylene (TCE) in ES-03 (8.3 µg/L).
- There were eight exceedances of vinyl chloride. The maximum concentration was 310 µg/L in sample ES-03 2-19-2009.

• Total Petroleum Hydrocarbons:
  - There were one-hundred and twelve exceedances of TPH-DRO. The maximum concentration was 1,200 mg/L in sample TW-55.
  - There were seventy-nine exceedances of TPH-GRO. The maximum concentration was 150 mg/L in sample TW-55.

10.4.3 Data Discussion

Groundwater and LNAPL

The groundwater potentiometric surface generally emulates the topographic contours of the Site as well as the structure-contour of the top of bedrock surface, which is shown on **Figure 17**. As shown on **Figure 35,** the groundwater flow direction is predominantly from the west to the east towards the WBWR except in localized areas of the Site and south of the STF Creek. The average gradient is 0.011 feet/feet from west to east. Groundwater is flowing towards, and discharging into, the WBWR.

Groundwater south of the STF Creek is flowing towards the north-northeast and is likely discharging into the STF Creek near wells TW-16, TW-97 and TW-98. In this area, the creek is likely perennial due to the discharging groundwater (**Figure 35**). The groundwater level is above the top of bedrock in the shallow alluvium for the majority of the Site, including MPA, most of the STF, and the stormwater/wastewater ponds (**Figure 36**).

Groundwater appears to be mounded at the northwest corner of the STF, in the vicinity of the monitoring well TW-102S. This may be related to groundwater spring activity in this area, which is also likely supplying the ponded water body located to the east of this well. Groundwater may also be mounded at the southern portion of the STF, south of the STF Creek. Mounded groundwater in the vicinity of the wastewater/stormwater ponds is also limiting easterly flow of LNAPL from the MPA.

Figure 36 shows the relationship between the groundwater table and the top of bedrock structure-contour. Areas where the groundwater table is above the top of bedrock are expected to be the primary locations of groundwater impact and migration. The base of the unconsolidated material and the upper portion of bedrock typically are the most permeable zones beneath the Site due to the presence of coarser-grained material and highly fractured rock. When saturated, these areas are preferential flow paths for groundwater.

Table 2b presents groundwater data for clustered well sets at the Site. As shown on **Table 2b**, groundwater levels in clustered well sets adjacent to the WBWR predominantly show upward gradients between wells screened in the Florence Limestone, the Fort Riley Limestone, and the Shallow System (alluvium and weathered bedrock residuum). Upward gradients were also observed in the STF in well sets OW-06(Fort Riley)/N5-3 (Shallow System), adjacent to Topeka Street, and well sets TW-104S (Fort Riley)/TW-104D (Fort Riley) and TW-25S (Fort Riley)/TW-25D (Fort Riley), and TW-106S (Fort Riley)/TW-106D (Fort Riley), which were completed at the northwestern corner of the STF.

Downward gradients were noted in all of the other clustered well sets that were located to the west of Topeka Street. The downward gradient within the fractured, upper portions of

the Fort Riley Limestone. Also in this area, LNAPL was observed in the deeper Fort Riley well TW-103D, but not in the shallower Fort Riley well TW-103S.

The presence of competent limestone at the base of the Fort Riley Limestone and the Oketo Shale underlying the Fort Riley Limestone, which was detected by the natural gamma logging performed as part of the Second Phase Investigation (**Figure 4**), are likely preventing vertical migration of impacted, shallow groundwater into the underlying Florence Limestone. This is evidenced by the lack of groundwater contamination detected in wells completed in the Florence Limestone. The upward vertical gradients observed closer to the WBWR are also preventing deeper migration of shallow, impacted groundwater.

The historical apparent LNAPL thickness in groundwater is shown on **Figure 57** and the apparent LNAPL thickness measured in February 2009 is shown on **Figure 58**. Based on the LNAPL distribution illustrated in the historical and current LNAPL isopach maps, the LNAPL has not migrated significantly. Wells ES-02, TW-50, TW-49, OW-13, and TW-33 did not contain measureable LNAPL in February 2009, but did historically. Wells TW-58 and OW-12 contained measureable LNAPL in February 2009, but have not always contained LNAPL historically. As shown on **Figure 57**, the largest accumulations of LNAPL at the Site have been measured in the southeast portion of the MPA (downgradient of the former tank car loading rack and west of the wastewater/stormwater ponds), in the northwest portion of the MPA (east of the former AHA pit), and in the northwest portion of the STF (in the former tank farm area). LNAPL was also measured in the STF (south of the STF Creek and at the western boundary of the Site along Topeka Street.

Groundwater Analytical Data

Stiff Diagrams

Groundwater general chemistry data collected during prior groundwater and surface water sampling events were utilized to prepare stiff diagrams, which are shown on **Figure 64**. Major-ion (Ca, Mg, Na, K, SO_4, Cl, CO_3, & HCO_3) data were evaluated to assess possible relationships between various water bodies at the Site.

The sum of the milliequivalents of the cations should balance with the sum of the milliequivalents of the anions in a water sample. Accordingly, a cation/anion balance was performed to assess the viability of the general chemistry data. Unfortunately, many of the cations and anions from the samples collected did not balance. According to Test America personnel, matrix interferences caused the imbalances. Despite the imbalances, however, the data were deemed usable for the qualitative evaluation that was performed.

Stiff diagrams are utilized in characterization of groundwater from various aquifers or for assessment of contamination and ambient conditions in a single aquifer. Stiff diagrams are graphical depictions of the composition of water from a monitoring site. The plots consist of a standard pattern, in which the cation concentrations (in meq/L) are shown to the left of a central axis and the anions to the right of the axis. Each sample is shown by a separate plot on **Figure 64**.

The extensive presence of hydrocarbons in the groundwater has resulted in microbiological activity and the generation of reducing conditions, as indicated by negative oxidation / reduction potentials (ORP) in many areas of the Site (Table 3). A Site map showing Stiff diagrams for all surface water, groundwater, and spring samples collected is included on **Figure 64**. The Stiff diagrams show that wells with elevated total dissolved solids concentrations (TDS) are located in several areas of the Site. The highest TDS readings were in samples from wells TW-67 (7,570 mg/L), TW-25D (5,790 mg/L), and OW-19T (4,700 mg/L, collected as part of the Second Phase Investigation). As shown on Figure 64, groundwater with elevated chloride levels (up to 2,800 mg/L, well TW-25D) were predominantly found in the STF. Only one well, which was located in the MPA, contained groundwater with sulfate levels greater than 1,000 mg/L (up to 4,180 mg/L, well TW-67) Water with similar Stiff plots have similar geochemical compositions and typically have a common source. However, no consistent trend was observed in the Stiff diagrams presented on **Figure 64**.

Organic Compounds in Groundwater

The benzene concentrations in groundwater are shown on **Figure 59**. Benzene impacts are primarily located throughout the majority of the MPA, at the northwest portion of the STF (in the former storage tank area), at the northeast portion of the STF (former off-loading area and research and testing laboratory) and at the vacant area east of Topeka Street, north of the residential area, and at the southwestern portion of the STF (south of the STF Creek).

The TPH-GRO concentrations in the groundwater are shown in **Figure 60**. The TPH-GRO distribution in groundwater looks very similar to the extent of benzene in groundwater (**Figure 59**).

The TPH-DRO concentrations in the groundwater are shown in **Figure 61**. The distribution of TPH-DRO in groundwater is very similar to the extent of TPH-GRO in groundwater shown on **Figure 60**, except the overall areal extent is larger. In addition, TPH-DRO impacts were also observed over a large area north of the STF Creek.

The MTBE concentrations in the groundwater are shown in **Figure 62**. The primary areas for MTBE impacts in groundwater are located in the southern portion of the MPA and northern portion of the STF in the vicinity of former storage tanks and the off-loading area. MTBE levels in groundwater extend downgradient toward the WBWR in these areas. Elevated MTBE levels were also observed south of the STF Creek. Additional investigation activities are currently being planned to further refine the delineation of the extent of MTBE impacts in groundwater to the east of Topeka Street.

The 1,1,2-TCA and vinyl chloride concentrations in the groundwater are shown in **Figure 63**. The primary source area for the 1,1,2-TCA and vinyl chloride impacts is most likely the Union Tank Car facility located to the east of the Site (**Figure 2**). A minor source area for vinyl chloride on the Site may be the former research and testing laboratory at the northeast corner of the STF.

10.5 Cross-sections

From the borehole logs, a series of cross-sections were produced. **Figure 18** shows the lines of cross-section in plan view, **Figures 19** through **34** show the individual cross-sections.

Cross-section A Cross-section A-A' and cross-section A'-A" run north to south and northwest to southeast, respectively (**Figures 19** and **20**, respectively). A downward vertical gradient was indicated between the W-29S/W-29D well cluster, which were screened in the upper Fort Riley Limestone and Florence Limestone, respectively. The mounded groundwater above the competent bedrock can be seen in the vicinity of TW-103S/TW-103D well cluster. A downward gradient is indicated in the cluster wells W-29S/W-29D, and TW-32S/TW-32D.

In cross-section A-A', well TW-28 is located in a tank scar in the STF and shows evidence of the former tank being a possible source for hydrocarbon impacts observed in this well. Boring TW-28 had elevated PID measurements greater than 100 ppmv from 16 feet bgs to the total depth of the boring, with PID measurements greater than 1,000 ppmv in the 24 foot to 28 foot depth interval. A soil sample was collected in TW-28 from 25 feet to 27.5 feet bgs and exceeded the Screening Levels for benzene (24,000D µg/kg), ethybenzene (69,000D µg/kg), and TPH-GRO (8,600 mg/kg). During the February 2009 well gauging event, LNAPL was measured in well TW-28 (total depth of 30.6 feet) with an apparent thickness of 1.28 feet. No elevated PID readings or LNAPL were observed in boring TW-103S (total depth of 20.25 feet), which is located downgradient of well TW-28. Well TW-103D (total depth of 34.74 feet), which is separated from well TW-103S by a competent layer of limestone, contains LNAPL with an apparent thickness of 1.23 feet. The impacts observed in well TW-103D most likely migrated through the fractured bedrock from the area in the vicinity of well TW-28. The competent layer of limestone above well TW-103D is likely fractured, more highly weathered, or not present in the vicinity of well TW-28.

Moderate PID measurements (between 100 and 1000 ppmv) were observed in borings TW-24S, TW-24D, TW-110, TW-21, TW-20, and OW-10 (depth of 12-16 feet). From the soil samples collected from these borings, the only exceedance was of TPH-GRO (150 mg/kg) in sample TW-24S 6-7.5 feet (380 mg/kg). Well OW-12 had low PID measurements (< 100

ppmv) during drilling and contained LNAPL with an apparent thickness of 0.02 feet during the February 2009 well gauging event. Well OW-12 is not located in an obvious source area and the observed impact most likely migrated from upgradient (from the west).

Cross-section B Cross-section B-B' and cross-section B'-B" run north-to-south and northeast to southwest, respectively (**Figures 21** and **22**, respectively). The impacts observed in these two cross-sections are observed near the MPA, AHA, and STF areas.

In cross-section B-B', the AHA is likely the source area for the impacted northern wells. The southern borings on the cross-section have moderate (100 to 1,000 ppmv) PID measurements or are not impacted. Soil samples from 7.5-10 feet at TW-42 exceeded the Screening Levels for benzene (4,000 µg/kg) and TPH-GRO (310 µg/kg).

In cross-section B'-B", groundwater levels in wells TW-23S/TW-23D indicate a downward gradient. Borings TW-09 and TW-19 had high (greater than 1,000 ppmv) PID measurements, but LNAPL was only measured in well TW-09 in February 2008. Well TW-09 was not measured in the February 2009 event, due to ponded water in the tank scar. Screening Level exceedances of benzene (80 µg/kg) were observed in soil samples collected from TW-09-0-2 (3,900 µg/kg) and TW-19-5-6 (18,000 µg/kg) and of TPH-GRO (150 mg/kg) from TW-09-0-2 (800 mg/kg) and TW-19-5-6 (1,000 mg/kg).Well TW-19 is located in a tank scar and this area is a likely source for the seeps observed along the STF Creek.

Cross-section C Cross-section C-C' runs north to south and is located in the middle of the MPA (**Figure 23)**. The soil samples from the majority of the borings located in the MPA (TW-60, SB-14, SB-11, TW-53, TW-52, TW-49, TW-45, OW-13 and TW-38) had moderate (100 to1,000 ppmv) to high (greater than 1,000 ppmv) PID measurements. Exceedances of the Screening Levels for benzene (80 µg/kg) were detected in soil samples collected from SB-14-0-2 (630J µg/kg), SB-14-8-11 (130 µg/kg), SB-11-6-8 (1,100 µg/kg), TW-53-0.5-2 (100 µg/kg), TW-53-12-13.2 (2,600 µg/kg), TW-52-10-12 (700 µg/kg), and TW-49-6-8 (2,200 µg/kg) and of TPH-GRO (150 mg/kg) from SB-11-0-2 (320 mg/kg), SB-11-6-8 (380 mg/kg), SB-11-14-16 (730 mg/kg), TW-53-0.5-2 (4,400 mg/kg), TW-53-12-

13.4 (420 mg/kg), TW-52-10-12 (770 mg/kg), TW-49-6-8 (900 mg/kg), and TW-45-6-8 (500 mg/kg). Well SB-14 contained LNAPL with an apparent thickness of 0.02 feet. Numerous historical sources for observed impacts are likely in the MPA.

Cross-section D Cross-section D-D' runs northwest to southeast and is located on the eastern edge of the MPA (**Figure 24)**. The majority of the wells located near the MPA area (OW-21, TW-67, TW-64, OW-35, TW-23, SB-44, OW-25, OW-26, OW-38, and TW-113) had moderate (100 to 1,000 ppmv) to high (greater than 1,000 ppmv) PID measurements. There were no exceedances of the KDHE RSK Non-residential Soil Standards from the soil samples collected from these boreholes. Wells N2-5, OW-25, and OW-38 contained LNAPL with an apparent thickness of 2.39 feet, 0.23 feet, and 0.06 feet, respectively. From the cross-section and the top of bedrock structure-contour map (**Figure 17**), these wells are located in one of the paleovalleys that is a preferential flow path of the impacts from the MPA.

Cross-section E Cross-section E-E' and cross-section E'-E'' run north to south and are located on the eastern edge of the STF and the edge of the property along Topeka Street (**Figures 25** and **26**). The majority of the wells are not impacted in the two cross-sections.

In cross-section E-E', wells TW-47 and TW-80 had moderate (100 to1,000 ppmv) to high (greater than1,000ppmv) PID measurements. TW-47 is located north of Refinery Road in the MPA and is in the location of a former storage tank. One soil sample exceeded the Screening Level for benzene for TW-47 5-6 feet (420 µg/kg). There were no observations or measurements of LNAPL in the wells.

In cross-section E'-E'', wells OW-06 and TW-72 had moderate (100 to1,000 ppmv) to high (greater than 1,000 ppmv) PID measurements, with only one soil sample exceeding the Screening Level (150 mg/kg) of TPH-GRO for TW-72-11-12.5 (490 mg/kg). Well OW-12 was the only well in the southeast portion of the STF that contained LNAPL and the apparent thickness during the February 2009 well gauging event was 0.02 feet. The borehole log for OW-12 did not indicate any impacts (low PID measurements, no odors, and no visual staining) when it was drilled, therefore OW-12 is likely not in a source area

and the observed LNAPL migrated from ugradient. It is noted that none of the wells on the east side of Topeka Street in this area (TW-74 through TW-78) contained LNAPL.

Cross-section F Cross-section F-F' runs west to east. It begins at the northwest corner of the AHA, runs through the MPA and extends through the stormwater/wastewater ponds (**Figure 27**). Borings TW-118, TW-60, TW-123, OW-29 and OW-03 had moderate (100 to 1,000 ppmv) to high (greater than 1,000 ppmv) PID measurements. During the February 2009 well gauging event, there were no observations or measurements of LNAPL in the wells. Wells N3-1, W-22, and OW-03 show an upward gradient, preventing the migration of impacts to deeper aquifer systems. The borings TW-120 and TW-118 are located in the AHA near the pit. Moderate PID readings were observed in TW-118.

Cross-section G Cross-section G-G' runs west to east and is located in the southern portion of the MPA and runs through the stormwater/wastewater ponds (**Figure 28**). The majority of the borings (OW-02, TW-53, OW-18T, SB-09, OW-25, SB-37, OW-28T, OW-04, and OW-31) had moderate (100 to 1,000 ppmv) to high (greater than 1,000 ppmv) PID measurements. Screening Level exceedances of benzene (80 µg/kg) in soil samples collected from TW-53-0.5-2 (100 µg/kg), TW-53-12-13.4 (2,600 µg/kg), SB-09-0-2 (360J µg/kg), and SB-09-2-4 (1,100 µg/kg), and of TPH-GRO (150 mg/kg) from TW-53-0.5-2 (4,400 mg/kg), TW-53-12-13.4 (420 mg/kg), SB-09-0-2 (1,300 mg/kg), SB-09-2-4 (970 mg/kg), and SB-37-4-6 (3,400 mg/kg), and of TPH-DRO (15,000 mg/kg) from SB-09-0-2 (34,000 mg/kg). During the February 2009 well gauging event, wells N2-6 and OW-25 contained LNAPL with apparent thicknesses of 1.9 feet and 0.23 feet, respectively. This cross-section line follows one of the paleovalleys, which is likely a preferential flow path for groundwater in the MPA. It appears that once the impacted groundwater reaches the stormwater/wastewater ponds, it migrates down and then flows under the ponds in the fractured bedrock.

Cross-section H Cross-section H-H' runs west to east and is located in the northern portion of the STF (**Figure 29**). Borings TW-41, TW-37, TW-38, TW-108, TW-80, and TW-113 had moderate (100 to 1,000 ppmv) to high (greater than 1,000ppmv) PID measurements. Screening Level exceedances of benzene (80 µg/kg) in soil samples

collected from TW-37-2-4 (970 µg/kg), and TPH-GRO (150 mg/kg) from TW-37-2-4 (4,200 mg/kg). During the February 2009 well gauging event, well TW-37 was the only well that contained LNAPL with an apparent thickness of 0.01 feet. The former tanks, chemical off-loading area, and/or pipelines are the likely source of the observed impacts.

Cross-section I Cross-section I-I' runs west to east and is located in the northern portion of the STF (**Figure 30**). Borings TW-33, TW-106S, TW-106D, TW-82, and TW-111 had moderate (100 to 1,000 ppmv) to high (greater than 1,000 ppmv) PID measurements. Screening Level exceedances of benzene (80 µg/kg) in soil samples collected from TW-33-0-2 (1,600 µg/kg), and TW-33-4-4.5 (28,000 µg/kg), and TPH-GRO (150 mg/kg) from TW-33-4-4.5 (3,800 mg/kg). There were no observations or measurements of LNAPL in the wells. The former tanks are the likely source of the observed impacts.

Cross-section J Cross-section J-J' runs west to east and is located in the northern portion of the STF (**Figure 31**). Borings TW-103D, TW-101, and TW-27D had moderate (100 to1,000 ppmv) PID measurements. There were no exceedances of the KDHE Tier 2 RSK Non-residential Soil Standards from the soil samples collected from these boreholes. Well TW-103D was the only well that contained LNAPL with an apparent thickness of 1.23 feet. The former tanks are the likely source of the observed impacts.

Cross-section K Cross-section K-K' runs north to south and is located in the southern portion of the STF (**Figure 32**). Borings TW-94, TW-12, TW-10, TW-86, and TW-02 had moderate (100 to1,000 ppmv) to high (greater than 1,000 ppmv) PID measurements. Screening Level exceedances of benzene (80 µg/kg) in soil samples collected from TW-12-10-11.5 (1,600 µg/kg), and TW-02-10-11 (120 µg/kg), and from TPH-GRO (150 mg/kg) from TW-12-10-11.5 (470 ng/kg), and TW-10-7-8 (1,200 mg/kg). During the February 2009 well gauging event, wells N6-1 and TW-02 contained LNAPL with an apparent thickness of 0.06 feet and 0.18 feet, respectively. Well TW-02 was not measured in the February 2009 gauging event, due to ponded water in the tank scar. The impacts at TW-02 are likely from the former tank and the localized mounded water table beneath TW-02 is due to the ponded water in the tank scar. The unconsolidated material (primarily clay and

silt) is relatively thick at this location, and the low permeability of this material likely limits infiltration and contributes to the surface water ponding. The impacts observed in wells TW-94, N6-1, TW-12 and TW-10 are potentially due to releases from pipelines in the area.

Cross-section L Cross-section L-L' runs west to east and is located in the southern portion of the STF and is near the STF Creek (**Figure 33**). Borings TW-19, OW-08, TW-94, TW-16, TW-97, TW-15 and TW-126 had moderate (100 to 1,000 ppmv) to high (greater than 1,000ppmv) PID measurements. Screening Level exceedances of benzene (80 µg/kg) in soil samples collected from TW-19 5-6 feet (18,000 µg/kg), TW-16-10-12 (910D µg/kg), and of TPH-GRO (150 mg/kg) from TW-19-5-6 (1,000 mg/kg), and TW-15-5-7.5 (340 mg/kg). During the February 2009 well gauging event, there were no observations or measurements of LNAPL in the wells. The observed impacts are likely from the migration of releases from the former tank/pipeline locations.

Cross-section M Cross-section M-M' runs west to east and is located in the southern portion of the STF (**Figure 34**). Borings TW-86 and TW-05 had moderate (100 to1,000 ppmv) to high (greater than 1,000 ppmv) PID measurements. There was only one Screening Level exceedance of TPH-GRO (150 mg/kg) from TW-05 5-7 feet (250 mg/kg) from the soil samples collected. During the February 2009 well gauging event, there were no observations or measurements of LNAPL in the wells. The observed impacts are likely due to the migration of impacts from the former tank locations adjacent to TW-86 and TW-05.

10.6 Deviations

There were not any deviations from the work plan.

11.0 INVESTIGATION-DERIVED WASTE

Investigation derived waste (IDW) generated during the field work included decontamination water, excess soil cuttings from borings/drilling, personal protective equipment (PPE), and disposable field equipment.

Soil Soil was generated during surface and deep soil sample collection. All soil IDW was transported to the land farm at the northern part of the MPA.

Decontamination Water All IDW water was collected for discharge to the facility wastewater/stormwater ponds.

Disposable Equipment and PPE Waste generated during the field investigation, including rope, disposable bailers, latex gloves, and etc. were disposed in standard industrial dumpsters at the Site.

12.0 SUMMARY OF FINDINGS AND CONCLUSIONS

This section presents the primary findings and conclusions of the Third Phase Investigation.

12.1 Site Hydrogeology

- The Site is located in the Flint Hills Uplands physiographic province (KGS, 2009). The Flint Hills Uplands are characterized by rolling hills and rocky soil.
- The highest surface elevations at the Site are approximately 1,339 feet NGVD at the northwest corner of the AHA and 1,336 feet NGVD at the southwest corner of the STF. The lowest surface elevation at the Site, 1,287 feet NGVD, is located east of the wastewater/stormwater ponds adjacent to the WBWR. The overall Site topography slopes from west-to-east, towards the WBWR. The northwest corner of the STF slopes towards the STF Creek to the west. The southern 1/3 of the STF slopes towards the STF Creek to the north-northeast.
- The Site is underlain by Lower Permian age bedrock units of the Chase Group, which are comprised of layers of limestone, cherty limestone, dolomitic limestone, dolomite, and shale (Aber, 1991).
- The depth to bedrock ranges from zero feet at localized outcrops (primarily at the western and southwest portions of the Site) to over 25 feet near the MPA and STF border.
- Two main paleovalleys are present at the bedrock surface that could be preferential flow paths for groundwater. One paleovalley trends southwest-to-northeast from the northern portion of the STF to the middle of the wastewater/stormwater ponds. The second paleovalley, which is located in the southern portion of the STF, trends west-to-east.
- Groundwater encountered beneath the Site includes unconfined groundwater, confined groundwater, and areas of localized perched groundwater.
- Based on slug test data and field observations, the most transmissive of the water-bearing zones beneath the Site is the highly fractured and weathered upper Fort Riley Limestone (part of the Shallow System) underlying residuum and alluvium.
- Groundwater impacts are largely confined to the Shallow System.
- The presence of the Oketo Shale between the Fort Riley Limestone and the Florence Limestone units and the upward groundwater gradients in the vicinity of the

WBWR between the Florence, Fort Riley, and Shallow System have prevented contaminants from migrating from the Shallow System into deeper formations.

- The groundwater potentiometric surface generally emulates the topographic contours of the Site as well as the structure-contour of the top of bedrock surface.
- The groundwater flow direction is predominantly from the west-to-the east towards the WBWR, except in localized areas of the Site and south of the STF Creek.
- The average groundwater gradient is 0.011 feet/feet from west-to-east.
- Depth to groundwater in February 2009 ranged from -0.25 feet (confined conditions) in monitoring well TW-87 to 36.31 feet in monitoring well TW-32D.
- Groundwater is flowing towards, and discharging into, the WBWR.
- Groundwater south of the STF Creek is flowing towards the north-northeast and is likely discharging into the STF Creek near wells TW-16, TW-97 and TW-98. In this area, the creek is likely perennial due to the discharging groundwater.
- The groundwater level is above the top of bedrock in the shallow alluvium/residuum throughout the majority of the MPA and the central portion of the STF. Areas where the groundwater table is above the top of bedrock are expected to be the primary locations of groundwater impact and migration.
- The base of the unconsolidated material and the upper portion of bedrock typically are the most permeable zones beneath the Site due to the presence of coarser-grained material and highly fractured rock. When saturated, these areas are preferential flow paths for groundwater.
- Measured groundwater elevations ranged from 1326 feet NGVD at the northwest corner of the Site, to 1274.56 feet NGVD adjacent to the WBWR, in February 2009.
- Groundwater appears to be mounded at the northwest corner of the STF, in the vicinity of the monitoring well TW-102S. This may be related to groundwater spring activity in this area, which is also likely supplying the ponded surface water body located to the east of this well. Groundwater may also be mounded at the southern portion of the STF, south of the STF Creek. Mounded groundwater in the vicinity of the wastewater/stormwater ponds is also limiting easterly flow of LNAPL from the MPA.
- Historical groundwater levels in clustered well sets adjacent to the WBWR predominantly show upward gradients between wells screened in the Florence

Limestone, the Fort Riley Limestone, and the Shallow System (alluvium and weathered bedrock residuum).

- Upward groundwater gradients were also observed in the STF in well sets OW-06 (Fort Riley)/N5-3 (alluvium/residuum), adjacent to Topeka Street, and well sets TW-104S (Fort Riley)/TW-104D (Fort Riley) and TW-25S (Fort Riley)/TW-25D (Fort Riley), and TW-106S (Fort Riley)/TW-106D (Fort Riley), which were installed at the northwestern corner of the STF. Downward groundwater gradients were noted in all of the other clustered well sets that were located to the west of Topeka Street.
- LNAPL was observed in the deeper Fort Riley well TW-103D, but not in the more shallow Fort Riley well TW-103S.
- The presence of competent limestone at the base of the Fort Riley Limestone and the Oketo Shale underlying the Fort Riley Limestone, which was detected by the natural gamma logging performed as part of the Second Phase Investigation, are likely preventing vertical migration of impacted, shallow groundwater into the underlying Florence Limestone. This is evidenced by the lack of groundwater contamination detected in wells completed in the Florence Limestone.
- The upward groundwater gradients observed closer to the WBWR are also preventing deeper migration of shallow, impacted groundwater.

12.2 River and Creek Sediment and Surface Water

12.2.1 WBWR

- None of the WBWR river sediment samples (samples SED-01 through SED-05) contained analytes above Screening Levels.
- Calcium, iron, magnesium, manganese, potassium and sodium were detected in all five samples collected from the WBWR in 2009. However, there are no applicable Screening Levels for these analytes.
- Barium was detected in the surface water samples collected from all five locations in the WBWR, but concentrations were below the Screening Level of 1,000 µg/L.

- Mercury was detected in the surface water samples collected from Transects #1, #2, and #4. Concentrations from all three samples exceeded the Screening Level for mercury (0.146 µg/L). The highest mercury concentration was measured in upgradient Transect #1 (1.1 µg/L), which is located adjacent to the Pester Burn Pond site. Transect #5 is located furthest upgradient of the site and did not indicate a mercury concentration that exceeded Screening Levels.
- Cyanide was detected above the Screening Level (0.0052 mg/L) at Transect #3 (0.0132 mg/L) during the February 2009 event. Cyanide was not detected in previous surface water sampling events in 2005 or 2006.
- TDS levels measured in 2009 samples (up to 464 mg/L), were substantially lower than the 2006 samples (up to 1,310 mg/L) and are considered consistent with expected values for stream surface water samples.
- No VOCs were detected above laboratory reporting limits in the surface water samples collected from the WBWR in February 2009. In addition, no SVOCs, TPH-DRO or TPH-GRO levels were detected above laboratory reporting limits.

12.2.2 STF Creek and STF Pond

- Four out of five of the STF Creek sediment samples had exceedances of Screening Levels for lead and/or nickel. However, comparable lead and nickel values were detected in the background location, SED-12.
- Pyrene (660 µg/kg) was detected above the TEC level (195 µg/kg) in sediment sample SED-11.
- Analytes detected in the samples included: chloride, sulfate, PHC as diesel fuel (estimated level), PHC as gasoline (estimated level), benzene, and methyl tert-butyl ether. Except for the chloride sample (450D mg/L) collected from the SW-CREEK location, all detected parameters were below their respective Screening Levels.

12.3 Pond Sediment Sampling and Analysis

- Analytes that exceeded Screening Levels (including estimated values below laboratory reporting limits) in sediment samples in each pond are as follows:
  - Marley Pond – benzo(a)pyrene, chrysene, benzene, naphthalene, and TPH-GRO

- Spray Pond – anthracene, benzo(a)pyrene, chrysene, pyrene, benzene, carbon disulfide, naphthalene, TPH-GRO, and TPH-DRO
- Primary Pond - benzo(a)pyrene, chrysene, benzene, and TPH-GRO
- West Oxidation Pond - lead, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenz(a,h)anthracene, pyrene, benzene, naphthalene, carbon disulfide, TPH-GRO, and TPH-DRO
- Southeast Pond - carbon disulfide
- Equalization basin – benzo(a)pyrene, chrysene, benzene, TPH-GRO, and TPH-DRO
- Aeration Pond #1 – benzene
- Aeration Pond # 2 - no exceedances
- Aeration Pond #3 – benzene
- Polishing Pond - no exceedances
- None of the sediment samples submitted for TCLP analysis exceeded the toxicity characteristic limit (40 CFR Part 261.24 Table 1).

- The following sediment volumes (bank cubic feet) were estimated:
  - Spray Pond: 27,321 ft^3
  - Marley Pond: 24,957 ft^3
  - Primary Pond: 8,041 ft^3
  - West Oxidation Pond: 112,139 ft^3
  - Polishing Pond: 5,296 ft^3
  - Aeration Pond #3: 26,576 ft^3
  - Aeration Pond #2: 2,877 ft^3
  - Aeration Pond #1: 3,284 ft^3
  - Equalization Basin: 15,039 ft^3
  - Southeast Pond: 25,909 ft^3

  TOTAL: 251,439 ft^3

12.4 Pond Soil

- Analytes that exceeded Screening Levels (nonresidential) in soil samples collected beneath the sediment in each pond included the following:

- Marley Pond - benzene
- The Spray Pond – benzene, and TPH-GRO
- Primary Pond – benzene, and TPH-GRO
- West Oxidation Pond – pyridine, benzene, and TPH-GRO
- Southeast Pond - no exceedances
- Equalization basin - no exceedances
- Aeration Pond #1 – benzene, and TPH-GRO
- Aeration Pond # 2 - no exceedances
- Aeration Pond #3 – benzene, and TPH-GRO
- Polishing Pond – TPH-GRO

- Soils observed in pond soil borings were primarily described as silty clay (lean clay) overlying fractured limestone. Soil thicknesses were observed to range in thickness from 2.5 feet (PSB-21 and PSB-23) to 13 feet (PSB-15).
- Significant vertical migration of hydrocarbon constituents from the pond sediments into underlying soils would not be expected given the general low permeability of silty clay. However, based on analytical data, soil headspace gas readings, and field observations, some vertical leaching appeared to have occurred through the silty clay into the underlying fractured limestone at Aeration Pond #1, Aeration Pond #3, and the Spray Pond. Specific borings include PSB-06 (Aeration Pond #3), PSB-08 (Aeration Pond #3), PSB-12 (Aeration Pond #1), and PSB-28 (Spray Pond).
- PID readings and observations in borings PSB-05 (Polishing Pond), PSB-19 (West Oxidation Pond), PSB-22 (West Oxidation Pond), PSB-23 (West Oxidation Pond), PSB-26 (Primary Pond), PSB-27 (Spray Pond), and PSB-30 (West Oxidation Pond) indicate higher levels of impact in the fractured limestone than in the overlying silty clay. This indicates the impacts in these areas are largely due to migration of contaminated groundwater from upgradient sources rather than from vertical migration of hydrocarbons in the pond sediment.

12.5 Asphalt Handling Area

- Analyte levels (including estimated concentrations) in samples of waste and soil stockpiles above Screening Levels (nonresidential) in the AHA included the following:

- One exceedance of lead (6,370 mg/kg)
- One exceedance of 2,4 dinitophenol (12,000 µg/kg)
- Three exceedances of benzo(a)anthracene (up to 44,000J µg/kg)
- Twenty-four exceedances of benzo(a)pyrene (up to 35,000J µg/kg)
- Seventeen exceedances of chrysene (up to 81,000 µg/kg)
- Four exceedances of dibenzo(a,h)anthracene (up to 8,500J µg/kg)
- One exceedance of naphthalene (10,000 µg/kg)
- Two exceedances of benzene (up to 1,100D µg/kg)
- One exceedance of TPH-DRO (17,000 mg/kg)
- One exceedance of TPH-GRO (220 mg/kg)

- Shallow impacts in the AHA are likely due to historical management of liquid asphaltic wastes in this area (stabilization, mixing and spreading).
- None of the samples submitted for TCLP analysis exceeded the maximum toxicity characteristic levels (40 CFR Part 261.24 Table 1).
- The estimated volume of waste within the AHA pit is approximately 300,000 ft^3 (bank cubic feet). The estimated volume within the soil stockpiles surrounding the pit, based on field observations, is 550,000 ft^3.
- Vertical migration (approximately 32 feet) of hydrocarbons occurred through fractured bedrock in the vicinity of the AHA liquids pit based on soil/cuttings headspace gas data.
- LNAPL was measured in groundwater monitoring wells located downgradient of the former AHA pit.

12.6 Site Soil

- The geotechnical results of the soil samples tested were found to be lean or fat clays (CL or CH) with specific gravity ranging from 2.59 to 2.71. The 15 background soil samples and the five samples from “nonbackground” areas had very similar geotechnical results.
- Organic analytes detected in soil samples above Screening Levels (nonresidential) at the Site included the following:
  - MPA – 2-methylnaphthalene, anthracene, benzene, ethylbenzene, chloroform, chrysene, TPH-DRO, TPH-GRO, and naphthalene,

- STF – benzene, ethylbenzene, TPH-DRO, TPH-GRO, MTBE, and naphthalene,

- None of the samples submitted for TCLP analysis exceeded the maximum toxicity criteria (40 CFR Part 261.24 Table 1).
- There were numerous locations of organic impacts above Screening Levels in the MPA, AHA, and the northern portion of the STF. This is indicative of multiple, shallow hydrocarbon releases in these areas.
- Based on soil/cuttings headspace gas data, the maximum vertical migration (approximately 32 feet) of hydrocarbons occurred through fractured bedrock in the vicinity of the AHA liquids pit and within the former tank farm in the northwest corner of the STF.
- Based on the ProUCL evaluation of shallow soil metals data, the concentrations of the following metals at the Site exceed background levels: arsenic, barium, cadmium, chromium, lead, magnesium, mercury, nickel, potassium, and zinc. However, except for lead (nineteen samples) and arsenic (two samples), none of these metals were detected at levels greater than Screening Levels.
- Soils impacted with lead were detected at the MPA and at the north-central portion of the STF. Lead concentrations were measured at levels up to 28,000 mg/kg (SB-25, 4 to 6 feet) in the MPA and up to 2,020 mg/kg in the STF STFPSB-02, (2 to 4 feet). Lead was not detected above the Screening Level in soil samples collected at depths below six feet at the Site.
- Above pH 6, lead sorbs strongly to high cation exchange soils (such as the clay underlying the Site) and is relatively immobile (EPA, 1992). The immobility of the sorbed lead in soil is further evidenced by the fact that none of the groundwater samples collected in 2009 contained dissolved lead levels above Screening Levels (discussed in Section 10).
- A buried waste area containing elevated lead (2,020 mg/kg), TPH-DRO (27,000 mg/kg, and TPH-GRO (2,900 mg/kg) was encountered in the north-central portion of the STF. Based on observations made in borings in this area, the area of the waste is approximately 2,000 square feet and the depth is approximately 5 feet. Based on the analysis of the soil sample collected beneath the burial area (STFPSB-02, 5 to 7 feet), the waste in the burial pit has not leached significantly into underlying soils.

12.7 Site Groundwater LNAPL and Analyses

- Apparent LNAPL was measured in February 2009 at thicknesses up to 2.39 feet (monitoring well N2-5).
- Based on the LNAPL distribution illustrated in the historical and current LNAPL isopach maps, the LNAPL distribution has not changed significantly and appears to be relatively immobile.
- The largest apparent accumulations of LNAPL measured in wells at the Site were in the southeast portion of the MPA (downgradient of the former tank car loading rack and west of the wastewater/stormwater ponds), in the northwest portion of the MPA (east of the former AHA pit), and in the northwest portion of the STF (in the former tank farm area).
- LNAPL was also measured in the STF (south of the STF Creek and at the western boundary of the Site along Topeka Street).
- The presence of hydrocarbons in the groundwater has likely resulted in microbiological activity and the generation of reducing conditions, as indicated by negative ORP values in many areas of the Site.
- Analytes measured (including estimated concentrations) in groundwater samples above Screening Levels (nonresidential) at the Site included the following:
    - Forty exceedances of arsenic in (up to176 µg/L).
    - Four exceedances of barium (up to 3,110 µg/L).
    - Eighty-six exceedances of manganese (up to 9,370 µg/L),
    - Two exceedances of 2,4-dimethylphenol (up to 14,000D µg/L).
    - Two exceedances of 2-methylphenol (o-cresol) (up to 6,300D µg/L).
    - Two exceedances of methylphenol (M & P-cresols) (up to 9,400D µg/L).
    - One exceedance of benzo(a)anthracene (1 µg/L).
    - Two exceedances of bis(2-ethylhexyl)phthalate (up to 6 µg/L).
    - Two exceedances of phenol (up to 5,900D µg/L).
    - One exceedance of pyridine (40 µg/L).
    - Three exceedances of 1,1,2-trichloroethane (up to 320D µg/L).
    - Two exceedances of 1,1 dichloroethene (up to 39 µg/L).
    - Thirty-two exceedances of 1,2,4-trimethylbenzene (up to 1,300D µg/L)

- Two exceedances of 1,2-dichloroethane (up to 15 µg/L).
- One exceedance of 1,2-dichloropropane (5 µg/L).
- Nineteen exceedances of 1,3,5-trimethylbenzene (mesitylene) (up to 410D µg/L),
- Four exceedances of acetone (up to 1,300 µg/L).
- Seventy-four exceedances of benzene (up to 79,000D µg/L)
- Two exceedances of carbon disulfide (up to 22 µg/L).
- One exceedance of ethylbenzene (740D µg/L).
- One exceedance of methyl ethyl ketone (2-Butanone) (1,900 µg/L).
- One exceedance of methyl isobutyl ketone (4-Methyl-2-Pentanone) (100 µg/L).
- Fifty-five exceedances of methyl tert-butyl ether (tert-butyl methyl ether) (up to 38,000D µg/L).
- Two exceedances of methylene chloride (up to 400JB µg/L).
- Fifty-five exceedances of naphthalene (up to 630D µg/L),
- Three exceedances of n-butylbenzene (up to 28J µg/L).
- Twenty-seven exceedances of n-propylbenzene (up to 130 µg/L),
- One exceedance of sec-butylbenzene (up to 330 µg/L).
- One exceedance of trichloroethylene (TCE) (up to 8.3 µg/L).
- Eight exceedances of vinyl chloride (up to 310 µg/L).
- One-hundred and twelve exceedances of TPH-DRO (up to 1,200 mg/L).
- Seventy-nine exceedances of TPH-GRO (up to 150 mg/L).

- Elevated chloride concentrations were detected in one well in the STF (up to 2,800 mg/L, well TW-25D). Only one well, which was located in the MPA, contained groundwater with sulfate levels greater than 1,000 mg/L (4,180 mg/L, well TW-67).
- Benzene impacts in groundwater were located throughout a majority of the MPA, at the northwest portion of the STF (in the former storage tank area), at the northeast portion of the STF (former off-loading area and research and testing laboratory) and north of the residential area, and at the southwestern portion of the STF (south of the STF Creek).
- The TPH-GRO distribution in groundwater appeared very similar to the extent of benzene in groundwater.

- The distribution of TPH-DRO in groundwater appeared very similar to the extent of TPH-GRO in groundwater, except the overall areal extent is larger.
- Elevated MTBE concentrations in the groundwater were detected in the southern portion of the MPA and northern portion of the STF in the vicinity of former storage tanks and the off-loading area. MTBE levels in groundwater extend downgradient toward the WBWR in these areas. Elevated MTBE levels were also observed south of the STF Creek. Additional investigation activities are currently being planned to further refine the delineation of the extent of MTBE impacts in groundwater to the east of Topeka Street.
- 1,1,2-TCA and vinyl chloride were detected in the groundwater in the northeastern portion of the STF and in the area east of Topeka Street. The primary source area for the 1,1,2-TCA and vinyl chloride impacts is most likely the Union Tank Car facility located to the east of the Site. A minor source area for vinyl chloride on the Site may be the former research and testing laboratory at the northeast corner of the STF.

13.0 RECOMMENDATIONS

The recommendations presented in this section are based on the findings and conclusions of the Third Phase Investigation of the Site. EPME-PC is currently working closely with KDHE-BER under the Corrective Action process to develop a closure strategy that will provide long term protection of human health and the environment. Closure of the ponds is an integral part of the overall Site Corrective Action and is discussed in this section. In addition, future operation of the interceptor trench, additional off-Site investigation, surface water monitoring, and groundwater monitoring are discussed in this section.

13.1 Corrective Action Process

The Phase III Investigation is the culmination of the Comprehensive Investigation step in the BER Corrective Action process. Remaining steps in the process include the following:

- **Baseline Risk Assessment:** A work plan for a base-line risk assessment was approved by the KDHE in a December 15, 2008 letter. The risk assessment will be performed for the Site in order to evaluate potential risks to human health and the environment posed by contaminants identified in the Third Phase Investigation. If appropriate, Site-specific remediation goals will be proposed for contaminants as part of the process.

- **Corrective Action Study (CAS):** The CAS will be performed after completion of the Baseline Risk Assessment. The CAS provides a process for evaluating potential corrective action alternatives. The CAS is the process through which detailed assessments of at least two plausible corrective action alternatives and the "no action" alternative are performed. The evaluation includes: 1) a description of the contaminants of concern within each environmental media; 2) an identification of all real and potential human and environmental targets and an evaluation of all direct and indirect exposure pathways; 3) a description of the site-specific corrective action goals; 4) treatability studies for corrective actions considered innovative or unproven; and 5) a detailed individual and comparative analysis of each of the

proposed corrective actions, and the "no action" alternative, to evaluate their ability to satisfy the following criteria:

a) overall protection of human health and environment;
b) compliance with Federal and State applicable, or relevant and appropriate requirements (ARARs);
c) long-term effectiveness and permanence;
d) reduction of toxicity, mobility and volume of contamination through treatment;
e) short-term effectiveness;
f) implementability;
g) cost; and
h) community acceptance.

Sustainability will also be added as a ninth criterion in the CAS process. The detailed evaluation of potential corrective action alternatives will provide the basis for recommending and supporting a specific corrective action or group of corrective actions for the Site.

The investigation and characterization data collected to date support a thorough understanding of the nature and extent of contamination at the Site in soil, groundwater, surface water, and stream and pond sediment. The contaminants of concern, the transport and migration mechanisms, and the resulting overall distribution of contaminants are well defined and reasonably understood. The characterization data, therefore, are sufficient to support a transition to the risk assessment and corrective action phases of the project. With the exception of the activities described in the following sections, no additional characterization at the Site is recommended.

13.2 Pond Closure and Interim Measures

A modified National Pollutant Discharge Elimination System (NPDES) permit was issued for the Site on July 1, 2009 in order to allow EPME-PC additional time to perform pond

closure. The effective date for KDHE Kansas Water Pollution Control Permit I-WA09-PO-01/NPDES Permit KS0000205 was July 1, 2009.

The approach to pond closure was outline in a March 17, 2009 letter from EPME-PC to Mr. Mester of the Bureau of Water (BOW) and Ms. Weiser of the Bureau of Environmental Remediation (BER). The approach consists of a series of Interim Actions that will be performed in order to facilitate pond closure by December 2012; in advance of the BER Corrective Action process.

As part of the process of closing the ponds, remedial activities including in-situ landfarming of the upper soils in the MPA, construction of alternate water treatment systems, and construction of an MPA interception trench/stormwater basin will be conducted as Interim Measures. These tasks need to be performed prior to pond closure in order to manage extracted groundwater and stormwater once the ponds are closed and during the Corrective Action process.

The following tasks will be performed prior to completing pond closure:

- **Treatability Studies:** These will include stabilization tests for pond sediment and asphaltic material. These tests require time to assess how the selected stabilization mixes perform over time. A work plan for the pond sediment stabilization testing was submitted in April 2009 and was approved by KDHE in late July 2009. The pond treatability testing is currently underway.
- **Site Preparation**: This task includes process sewer evaluation and removal, remaining concrete and building removal, concrete crushing, and Site regrading for stormwater control.
- **MPA Stormwater Basin**: As an Interim Measure, this approach includes construction of an interception trench/stormwater basin on the east side of the MPA. This basin would be required to manage stormwater that is currently captured and treated in the stormwater ponds. Construction of the trench/basin would result in the excavation and treatment of a significant volume of petroleum-contaminated soil prior to completion of the CAS/Corrective Action Decision (CAD) process.

- **MPA Landfarming**: Initial evaluations have indicated it would be most cost effective to use the MPA as a location for landfarming impacted soils excavated as part of the closure process. Under this approach, the existing upper soil in the MPA would initially be treated in place to prepare the area for future placement of soil from other areas. Once the upper soils were treated in-situ, additional soil from other areas could be moved to the MPA for treatment. Although the final remedial approach for the MPA would be based on the results of the future CAS, in-situ landfarming would help prepare the MPA for a possible capping alternative.
- **Hybrid Water Treatment**: Currently, stormwater and groundwater extracted from the interception trench along the WBWR are treated through the American Petroleum Institute (API) oil water separator and/or through the stormwater ponds with discharge through NPDES Outfall 001. To close the ponds, a new system for treating this water will have to be designed and implemented. Initial evaluations indicate that the most effective, long term method for treating the water may be construction of a treatment wetlands in the area currently occupied by the east stormwater ponds. Initial construction and implementation of this plan may include modifications to the oil water separator system to pre-treat extracted groundwater prior to entering the treatment wetlands.
- **Pond Closure**: Pond closure under this scenario will entail clean closing the east ponds and stabilizing and closing in place the west ponds. Soils underlying the ponds might be landfarmed in the MPA. The west ponds might also be utilized for placement of contaminated materials from the northern portion of the Site. A cap will be designed and placed over the former west pond area as the final step in the closure process.

13.3 Interceptor Trench Operation and Monitoring

A 1,600-foot long groundwater interceptor trench was installed to the east of the wastewater/storm water ponds and parallel to the WBWR as interim measure in 2006. The purpose of the trench is to control hydrocarbon seeps along the WBWR. Trench operation and maintenance (O & M) reports have been prepared and submitted to the KDHE on a quarterly since trench startup in December 2006. Trench monitoring consists of the following:

- Quarterly trench O & M monitoring,
- Quarterly groundwater level monitoring in surrounding groundwater wells and piezometers,
- Quarterly hydrocarbon seep inspection,
- Quarterly monitoring of outfalls (in accordance with the NPDES permit), and
- Quarterly O & M report preparation.

Based on the trench monitoring conducted to date, the interceptor trench has operated effectively, provides groundwater hydraulic control, and has significantly reduced the hydrocarbon seepage along the WBWR. Accordingly, it is recommended that the current program of trench operation and monitoring be continued.

13.4 Off-Site Investigation

EPME-PC is currently working with the KDHE to identify additional groundwater monitoring well locations that are necessary to fully assess the extent of the hydrocarbon/MTBE plume in groundwater to the east of Topeka Street (east of the northern portion of the STF). The off-Site investigation will likely entail the installation and sampling of up to three additional groundwater monitoring wells in this area. For reference, off-Site groundwater supply wells identified in the area are presented in the document in **Appendix I**.

13.5 Surface Water Monitoring

It is recommended that surface water sampling continue on an annual basis during base-flow conditions both in the WBWR and in the STF Creek. Surface water samples are proposed to be collected from the five locations along the WBWR (Transects #1 through #5) shown on Figure 9. Two surface water sample locations are proposed in the STF Creek. These include the location shown on Figure 10 (SW-CREEK) as well as a second location due west of Topeka Road. Surface water samples will be collected from the same approximate locations along the transects across the WBWR that were sampled previously (i.e. surface water flow profiling will not be performed as part of future sampling). In addition, surface water samples collected from the STF Creek will be collected from the

approximate center of the creek. All other sampling procedures will be consistent with prior events.

Analytical parameters proposed for future surface water sampling include benzene, MTBE, TPH-GRO and DRO. These are the analytes that have been previously detected in surface water samples in the past that may be related to Site activities. In addition, general chemistry parameters (alkalinity, chloride, nitrate, sulfate, total dissolved solids, etc.) will be analyzed to compare with the results from prior events. All of the data will be presented in the second semi-annual groundwater monitoring report.

13.6 Groundwater Monitoring

The current groundwater monitoring system at the Site consists of 26 groundwater wells, which are sampled on a semi-annual basis. The semi-annual sampling program was suspended in 2008 and 2009 due to the groundwater well installation and Site-wide sampling that was conducted as part of the Third Phase Investigation. The groundwater monitoring system at the Site needs to be modified based on the findings of the Third Phase Investigation and the new understanding of contaminants of potential concern, contaminant distribution, source areas, and flow paths. The new monitoring well network should include wells in the following locations:

- Upgradient of the Site to evaluate the quality of groundwater migrating onto the Site,
- along the boundary of the Site where potential off-Site contaminant migration may be occurring,
- within and downgradient of source areas and “hot spots” to evaluate changes in concentration over time, and
- along the STF Creek where groundwater discharge may be occurring.

Using these criteria, 46 groundwater wells were selected for the semi-annual groundwater monitoring program and are shown on Figure 65. These wells will be sampled on a semi-annual basis and analyzed for the parameters discussed below. Additional wells may be added or substituted for the wells shown on Figure 65 based the results of future off-Site

investigations. Any proposed changes to the monitoring well system at the Site will be discussed with the KDHE prior to implementation. Fluid levels in all groundwater monitoring wells at the Site will be measured prior to beginning groundwater sampling during each sampling event.

To date, all groundwater sampling at the Site has been conducted using traditional methods (both low and high flow purging and sampling with bailers, bladder pumps, and/or persistaltic pumps). Many of the wells at the Site do not have sufficient yield to support low-flow sampling and must be purged dry with a bailer prior to collecting groundwater samples. This has resulted in the collection of groundwater samples that have not always been representative of conditions in the aquifer due to suspended sediment. Accordingly, it is proposed that a passive, no-purge groundwater sampling technique be utilized for future groundwater monitoring. Passive samplers, which remain submerged during a deployment period, collect from a discrete position within a well and are in ambient equilibrium with adjacent groundwater. This reduces field sampling variability, resulting in highly reproducible data (IRTC, 2007).

It is proposed that the Hydrasleeve sampler be utilized for collection of groundwater samples in all of the wells. Low flow sampling can continue to be utilized for wells that require collection of additional sample volume for duplicate analysis.

HydraSleeve groundwater samplers are instantaneous, grab-sampling devices used to collect water samples from groundwater wells without purging or mixing fluid from other intervals. HydraSleeve samplers can be used to sample for most groundwater analytes (e.g., VOCs, SVOCs, and metals) as long as an adequate volume of sample is recovered for analysis. HydraSleeve samplers cause no well drawdown until the acquired sample is withdrawn from the well, cause minimal agitation of the water column during sample acquisition, and can be used to sample low-yielding wells.

HydraSleeve samplers are deployed by attaching a suspension tether to the top and a weight to the bottom of an empty sampler and lowering the assembly into the well. Hydrostatic pressure causes the empty sampler to retain its flat and empty profile. After lowering the

sampler to the desired sample depth, the water column is allowed to stabilize until the water column reestablishes its natural concentration gradient after the minor vertical mixing caused by installation. The slim cross-section minimizes the disturbance to the water column during placement, reducing the time required for restabilization. To initiate sample collection, the HydraSleeve is pulled upward through the sample zone at one foot per second or faster. The reed-valve at the top opens as sleeve is pulled through a "core" of water, and the sleeve expands to contain the sample. Once the sample sleeve is full, the self-sealing reed-valve closes, preventing loss of the sample. At the surface, the HydraSleeve is punctured with the pointed discharge straw and the sample transferred to suitable containers for transport to the laboratory. An empty HydraSleeve can be installed and left in the well until the next sampling event.

As discussed in Section 10, contaminants in groundwater above KDHE Tier 2 RSK Residential Groundwater Standards (Screening Levels) primarily included VOCs, metals (arsenic, barium, and manganese), and TPH (GRO and DRO). Accordingly, it is proposed that groundwater samples from future events be analyzed for only these constituents. Except for naphthalene (which will be detected as part of the VOC analysis), extensive Screening Level exceedances of SVOCs were not observed in the groundwater samples. Samples from only two wells (TW-55 and TW-67), both of which were in the MPA, contained more than one SVOC Screening Level exceedance. Three other wells only contained trace levels of SVOCs (benzo(a)anthracene, 1 µg/L, bis(2-ethylhexyl)phthalate, 6 µg/L). Therefore, it is recommended that SVOC analysis only be conducted in groundwater samples from wells TW-55 and TW-67 as part of the semi-annual monitoring program.

It is proposed that the new groundwater monitoring program be continued on a semi-annual basis. Extensive, Site-wide groundwater sampling and analysis was conducted in 2009 as part of the Third Phase Investigation. Therefore, it is recommended that no further groundwater sampling be conducted in 2009 and that the semi-annual monitoring program be re-initiated during the first half of 2010.

All of the groundwater monitoring wells that were installed as part of the Third Phase Investigation were completed as temporary wells. A well completion and abandonment plan will be prepared after completion of the first 2010 semi-annual monitoring event.

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Tables

Table 1
Well Cconstruction Summary
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Borehole / Well ID	Pre-existing / Third Phase	Completion Date	Northing	Easting	Top of Casing Elevation (ft AMSL)	Ground Surface Elevation (ft AMSL)	Total Depth of Borehole (ft bgs)	Total Depth of Well (ft bgs)	Stickup / Flushmount	Stickup / Flushmount Height From Survey (ft)	Drilled Diameter (inches)	Casing / Screen Diameter (inches)	Screened Interval (ft bgs)	Material	Pump Installed (yes/no)
TW-02	Third Phase	November 15, 2007	1739285.67	1784418.48	1331.47	1328.10	20.1	20.1	Stickup	3.38	8	2	10.1 - 20.1	PVC	No
TW-03	Third Phase	November 20, 2007	1739343.55	1785873.86	1329.60	1326.57	23.4	23.01	Stickup	3.03	8	2	8.01 - 23.01	PVC	No
TW-05	Third Phase	November 19, 2007	1739699.13	1785195.78	1314.67	1312.21	11.4	11.4	Stickup	2.46	8	2	6.4 - 11.4	PVC	No
TW-07	Third Phase	November 19, 2007	1739839.71	1785022.13	1321.76	1318.80	17.2	13.2	Stickup	2.96	8	2	6.2 - 13.2	PVC	No
TW-09	Third Phase	November 14, 2007	1739955.48	1784013.28	1322.93	1319.96	9.9	9.9	Stickup	2.97	8	2	4.9 - 9.9	PVC	No
TW-10	Third Phase	November 15, 2007	1740045.72	1784515.37	1318.29	1314.96	14.8	14.4	Stickup	3.33	8	2	4.8 - 14.8	PVC	No
TW-11	Third Phase	November 14, 2007	1740058.69	1784145.72	1317.57	1314.76	10	10	Stickup	2.81	8	2	5 - 10	PVC	No
TW-12	Third Phase	November 15, 2007	1740189.28	1784566.32	1317.96	1314.58	20	20	Stickup	3.38	8	2	5 - 20	PVC	No
TW-13	Third Phase	November 16, 2007	1740196.28	1784765.65	1317.44	1314.57	20.2	20.2	Stickup	2.88	8	2	5.2 - 20.2	PVC	No
TW-14	Third Phase	November 14, 2007	1740308.97	1784188.80	1320.69	1317.37	20	20	Stickup	3.32	8	2	10 - 20	PVC	No
TW-15	Third Phase	November 20, 2007	1740385.48	1785187.51	1307.48	1304.57	17.5	17.3	Stickup	2.91	8	2	7.3 - 17.3	PVC	No
TW-16	Third Phase	November 16, 2007	1740388.61	1784762.15	1312.06	1309.23	17.2	17.2	Stickup	2.83	8	2	7.2 - 17.2	PVC	No
TW-17	Third Phase	November 27, 2007	1740515.59	1785999.59	1302.34	1299.53	17.3	17.3	Stickup	2.81	8	2	7.3 - 17.3	PVC	No
TW-18	Third Phase	November 19, 2007	1740461.32	1786216.34	1300.48	1297.23	14.67	14.67	Stickup	3.25	8	2	6.67 - 14.67	PVC	No
TW-19	Third Phase	November 15, 2007	1740600.48	1784327.51	1314.72	1312.27	12	12	Stickup	2.45	8	2	4 - 12	PVC	No
TW-20	Third Phase	November 26, 2007	1740832.01	1785650.59	1308.45	1305.26	20.4	19.87	Stickup	3.19	8	2	4.87 - 19.87	PVC	No
TW-21	Third Phase	November 26, 2007	1740906.44	1785352.90	1308.31	1305.20	19.9	19.9	Stickup	3.11	8	2	4.9 - 19.9	PVC	No
TW-22	Third Phase	November 20, 2007	1740972.59	1784765.78	1311.04	1308.19	16.2	16.2	Stickup	2.85	8	2	6.2 - 16.2	PVC	No
TW-23D	Third Phase	January 13, 2009	1741640.92	1785230.86	1317.55	1314.65	25	25	Stickup	2.9	8 3/4	2	15 - 25	PVC	No
TW-23S	Third Phase	November 27, 2007	1741634.13	1785228.86	1317.21	1314.57	17.5	17.5	Stickup	2.64	8	2	7.5 - 17.5	PVC	No
TW-24D	Third Phase	January 7, 2009	1741685.80	1784788.82	1316.30	1313.78	23	23	Stickup	2.52	8 3/4	2	13 - 23	PVC	No
TW-24S	Third Phase	November 27, 2007	1741683.75	1784765.78	1316.72	1313.82	12.8	12.8	Stickup	2.9	8	2	4.8 - 12.8	PVC	No
TW-25D	Third Phase	January 12, 2009	1741749.02	1784388.60	1320.81	1317.93	29.82	29.82	Stickup	2.88	8 3/4	2	19.82 - 29.82	PVC	No
TW-25S	Third Phase	November 27, 2007	1741749.51	1784396.47	1321.26	1318.04	15	13.09	Stickup	3.22	8	2	7 - 15	PVC	No
TW-26	Third Phase	November 28, 2007	1742014.51	1785642.32	1320.94	1318.40	20.4	20.5	Stickup	2.54	8	2	7.5 - 20.5	PVC	No
TW-27D	Third Phase	January 13, 2009	1742170.79	1785273.23	1326.91	1324.39	34.99	34.99	Stickup	2.52	8 3/4	2	24.99 - 34.99	PVC	No
TW-27S	Third Phase	November 27, 2007	1742163.36	1785270.21	1327.15	1324.18	19.8	19.8	Stickup	2.97	8	2	4.8 - 19.8	PVC	No
TW-28	Third Phase	December 4, 2007	1742518.94	1784509.44	1330.17	1326.94	30.6	30.56	Stickup	3.23	8	2	15.56 - 30.56	PVC	No
TW-29	Third Phase	December 5, 2007	1742543.75	1784906.36	1324.93	1322.02	10.52	10.44	Stickup	2.91	8	2	5.44 - 10.44	PVC	No
TW-31D	Third Phase	January 14, 2009	1742458.50	1785271.39	1325.80	1323.04	34.94	34.94	Stickup	2.76	8 3/4	2	24.94 - 34.94	PVC	No
TW-31S	Third Phase	December 7, 2007	1742441.97	1785268.10	1325.59	1322.91	26.9	26.6	Stickup	2.68	8	2	11.6 - 26.6	PVC	No
TW-32D	Third Phase	January 14, 2009	1742840.13	1784495.56	1332.17	1329.52	40	40	Stickup	2.65	8 3/4	2	25 - 40	PVC	No
TW-32S	Third Phase	December 5, 2007	1742824.90	1784501.17	1332.47	1329.23	30.9	30.3	Stickup	3.24	8	2	15.3 - 30.3	PVC	No
TW-33	Third Phase	December 6, 2007	1742824.90	1784881.55	1325.58	1322.52	30.22	30.06	Stickup	3.06	8	2	15.06 - 30.06	PVC	No
TW-34	Third Phase	December 4, 2007	1742852.75	1784293.00	1338.29	1335.08	33.36	33.36	Stickup	3.21	8	2	18.35 - 33.36	PVC	No
TW-35	Third Phase	December 3, 2007	1742911.33	1785450.48	1319.39	1316.36	20.5	20.5	Stickup	3.03	8	2	10.5 - 20.5	PVC	No
TW-36	Third Phase	November 29, 2007	1743020.42	1786151.70	1312.82	1309.80	30	29.3	Stickup	3.02	8	2	14.3 - 29.3	PVC	No
TW-37	Third Phase	December 5, 2007	1743077.01	1785078.01	1323.83	1320.62	30	30	Stickup	3.21	8	2	15 - 30	PVC	No
TW-38	Third Phase	November 29, 2007	1743118.32	1785808.12	1317.66	1314.88	28.2	28.2	Stickup	2.78	8	2	13.2 - 28.2	PVC	No
TW-39	Third Phase	December 7, 2007	1743128.06	1785390.44	1317.27	1314.12	23.1	29.9	Stickup	3.15	8	2	14.9 - 29.9	PVC	No
TW-40	Third Phase	December 5, 2007	1743197.02	1784517.71	1335.18	1332.10	29.3	29.3	Stickup	3.08	8	2	19.3 - 29.3	PVC	No
TW-41	Third Phase	December 21, 2007	1743221.82	1784848.47	1326.63	1323.84	22.1	22.1	Stickup	2.79	8 1/4	2	12.21 - 22.1	PVC	No
TW-42	Third Phase	December 7, 2007	1743354.54	1785449.31	1317.35	1314.59	28.4	28.4	Stickup	2.76	8 1/4	2	10 - 28.4	PVC	No
TW-43	Third Phase	December 3, 2007	1743361.41	1785662.59	1313.11	1309.85	25.53	25.53	Stickup	3.26	8	2	5.53 - 25.53	PVC	No
TW-45	Third Phase	January 22, 2008	1743497.94	1785896.86	1307.66	1305.23	9.9	9.9	Stickup	2.43	8 1/4	2	4.9 - 9.9	PVC	No

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Borehole / Well ID	Pre-existing / Third Phase	Completion Date	Northing	Easting	Top of Casing Elevation (ft AMSL)	Ground Surface Elevation (ft AMSL)	Total Depth of Borehole (ft bgs)	Total Depth of Well (ft bgs)	Stickup / Flushmount	Stickup / Flushmount Height From Survey (ft)	Drilled Diameter (inches)	Casing / Screen Diameter (inches)	Screened Interval (ft bgs)	Material	Pump Installed (yes/no)
TW-46	Third Phase	January 23, 2008	1743509.16	1785703.98	1310.36	1307.53	10	10	Stickup	2.83	8	2	5 - 10	PVC	No
TW-47	Third Phase	January 22, 2008	1743547.28	1786060.58	1306.23	1303.45	8.3	8.3	Stickup	2.78	8	2	3.3 - 8.3	PVC	No
TW-48	Third Phase	December 12, 2007	1743719.94	1785352.86	1317.29	1314.48	28.4	28.4	Stickup	2.81	8 1/4	2	13.4 - 28.4	PVC	No
TW-49	Third Phase	January 23, 2008	1743739.13	1785880.40	1309.63	1306.14	10.1	10.1	Stickup	3.49	8 1/4	2	5.1 - 10.1	PVC	No
TW-50	Third Phase	January 29, 2008	1743828.20	1786109.50	1309.13	1305.53	24.1	24.1	Stickup	3.6	8 1/4	2	9.1 - 24.1	PVC	No
TW-51	Third Phase	January 23, 2008	1743868.00	1785654.64	1311.84	1309.09	16.8	15.2	Stickup	2.75	8 1/4	2	5.5 - 15.2	PVC	No
TW-52	Third Phase	January 24, 2008	1743888.18	1785885.65	1310.06	1307.06	13.2	13.2	Stickup	3	8 1/4	2	5.1 - 13.2	PVC	No
TW-53	Third Phase	January 24, 2008	1744009.29	1785878.92	1311.46	1306.88	13.4	13.4	Stickup	4.58	8 1/4	2	5.2 - 13.4	PVC	No
TW-55	Third Phase	January 24, 2008	1744254.48	1785644.16	1316.96	1314.02	8.1	8.1	Stickup	2.94	8 1/4	2	5 - 8.1	PVC	No
TW-56	Third Phase	December 13, 2007	1744331.49	1785392.34	1322.53	1319.52	30.5	30.5	Stickup	3.01	8 1/4	2	15.5 - 30.5	PVC	No
TW-58	Third Phase	December 13, 2007	1744558.73	1785393.29	1324.20	1320.71	30.1	30.1	Stickup	3.49	8 1/4	2	15.1 - 30.1	PVC	No
TW-60	Third Phase	December 19, 2007	1744631.07	1785787.17	1315.10	1311.80	20.2	20.2	Stickup	3.3	8 1/4	2	5.2 - 20.2	PVC	No
TW-62	Third Phase	December 14, 2007	1744885.16	1785380.15	1324.50	1321.36	30.2	30.2	Stickup	3.14	8 1/4	2	15.2 - 30.2	PVC	No
TW-63	Third Phase	December 20, 2007	1745018.21	1785697.55	1317.56	1314.38	25	25	Stickup	3.18	8 1/4	2	10 - 25	PVC	No
TW-64	Third Phase	December 19, 2007	1745092.63	1786008.90	1313.56	1310.29	14.9	14.9	Stickup	3.27	8 1/4	2	4.9 - 14.9	PVC	No
TW-65	Third Phase	December 18, 2007	1745172.20	1785713.93	1317.06	1314.07	13	13	Stickup	2.99	8 1/4	2	5 - 13	PVC	No
TW-66	Third Phase	December 18, 2007	1745188.89	1785479.10	1321.24	1318.19	27.1	27.1	Stickup	3.05	8 1/4	2	12.1 - 27.1	PVC	No
TW-67	Third Phase	January 30, 2008	1745204.19	1785968.34	1314.69	1312.28	9.2	9.2	Stickup	2.41	8 1/4	2	5.2 - 9.2	PVC	No
TW-69	Third Phase	December 17, 2007	1745328.40	1785362.86	1324.91	1321.87	30.1	29.77	Stickup	3.04	8 1/4	2	14.77 - 29.77	PVC	No
TW-72	Third Phase	November 19, 2007	1740563.40	1786214.40	1300.29	1297.64	14.25	14.25	Stickup	2.65	8 1/4	2	6.25 - 14.25	PVC	No
TW-73	Third Phase	November 19, 2007	1740654.05	1786215.62	1300.40	1298.13	14	14	Stickup	2.27	8 1/4	2	9 - 14	PVC	No
TW-74	Third Phase	December 7, 2007	1740487.05	1786270.97	1299.76	1300.21	15.1	15.1	Flushmount	-0.45	8 1/4	2	5.1 - 15.1	PVC	No
TW-75	Third Phase	December 7, 2007	1740410.43	1786270.70	1298.38	1298.77	15.2	15.2	Flushmount	-0.39	8 1/4	2	5.2 - 15.2	PVC	No
TW-76	Third Phase	December 7, 2007	1740561.23	1786270.73	1297.07	1297.48	14.9	14.9	Flushmount	-0.41	8 1/4	2	4.9 - 14.9	PVC	No
TW-77	Third Phase	December 7, 2007	1740635.34	1786268.27	1297.59	1297.94	22.3	22.3	Flushmount	-0.35	8 1/4	2	7.3 - 22.3	PVC	No
TW-78	Third Phase	December 7, 2007	1740708.79	1786267.98	1297.58	1297.99	21.4	21.4	Flushmount	-0.41	8 1/4	2	6.4 - 21.4	PVC	No
TW-79	Third Phase	January 25, 2008	1742776.01	1786162.29	1314.17	1311.07	18.3	18.3	Stickup	3.1	8 1/4	2	8.3 - 18.3	PVC	No
TW-80	Third Phase	January 25, 2008	1742982.78	1786289.72	1308.99	1306.39	12.6	12.6	Stickup	2.6	8 1/4	2	7.6 - 12.6	PVC	No
TW-81	Third Phase	July 1, 2008	1742843.05	1786248.98	1310.90	1308.09	20	20	Stickup	2.81	4 1/4	2	10 - 20	PVC	No
TW-82	Third Phase	July 1, 2008	1742850.49	1786387.79	1306.56	1303.67	20	20	Stickup	2.89	4 1/4	2	10 - 20	PVC	No
TW-83	Third Phase	November 26, 2008	1739474.04	1783882.53	1331.42	1328.82	15.31	15.31	Stickup	2.6	8 3/4	2	5.31 - 15.31	PVC	No
TW-84	Third Phase	December 11, 2008	1739092.34	1784374.88	1335.99	1333.18	34.6	34.6	Stickup	2.81	8 3/4	2	19.6 - 34.6	PVC	No
TW-85	Third Phase	November 21, 2008	1739318.36	1784623.97	1333.05	1330.70	32.68	32.68	Stickup	2.35	7 3/4	2	22.68 - 32.68	PVC	No
TW-86	Third Phase	November 20, 2008	1739473.03	1784401.40	1327.69	1324.94	25.11	25.11	Stickup	2.75	7 3/4	2	15.11 - 25.11	PVC	No
TW-87	Third Phase	December 11, 2008	1739906.80	1784199.00	1320.23	1317.22	24.83	24.83	Stickup	3.01	8 3/4	2	14.83 - 24.83	PVC	No
TW-88	Third Phase	December 11, 2008	1739956.72	1783872.77	1332.29	1329.69	19.92	19.92	Stickup	2.6	8 3/4	2	4.92 - 19.92	PVC	No
TW-89	Third Phase	November 19, 2008	1739464.79	1786066.29	1331.25	1328.43	19.92	19.92	Stickup	2.82	7 3/4	2	9.92 - 9.92	PVC	No
TW-90	Third Phase	November 19, 2008	1739545.01	1785858.68	1323.06	1320.34	20	20	Stickup	2.72	7 3/4	2	10 - 20	PVC	No
TW-91	Third Phase	November 19, 2008	1739481.97	1785701.04	1318.61	1316.13	15	15	Stickup	2.48	7 3/4	2	5 - 15	PVC	No
TW-92	Third Phase	November 25, 2008	1739241.64	1785828.22	1326.95	1324.07	20.35	20.35	Stickup	2.88	8 3/4	2	10.35 - 20.35	PVC	No
TW-93	Third Phase	November 20, 2008	1739848.69	1785361.82	1310.74	1308.23	10	10	Stickup	2.51	7 3/4	2	4 - 10	PVC	No
TW-94	Third Phase	December 8, 2008	1740450.52	1784564.80	1307.44	1304.90	10.1	10.1	Stickup	2.54	8 3/4	2	5.1 - 10.1	PVC	No
TW-96	Third Phase	December 9, 2008	1740761.22	1784382.29	1312.73	1310.02	9.9	9.9	Stickup	2.71	8 3/4	2	4.9 - 9.9	PVC	No
TW-97	Third Phase	December 8, 2008	1740385.37	1785080.21	1308.33	1305.22	14.9	14.9	Stickup	3.11	8 3/4	2	9.9 - 14.9	PVC	No
TW-98	Third Phase	December 8, 2008	1740448.66	1785169.74	1306.15	1303.73	14.98	14.98	Stickup	2.42	8 3/4	2	4.98 - 14.98	PVC	No
TW-99	Third Phase	December 8, 2008	1740606.30	1784944.00	1304.77	1302.10	9.7	9.7	Stickup	2.67	8 3/4	2	4.7 - 9.7	PVC	No
TW-100	Third Phase	November 24, 2008	1741442.65	1785170.93	1312.66	1309.85	15.5	15.5	Stickup	2.81	8 3/4	2	5.5 - 15.5	PVC	No

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El Paso Merchant Energy - Petroleum Company
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Borehole / Well ID	Pre-existing / Third Phase	Completion Date	Northing	Easting	Top of Casing Elevation (ft AMSL)	Ground Surface Elevation (ft AMSL)	Total Depth of Borehole (ft bgs)	Total Depth of Well (ft bgs)	Stickup / Flushmount	Stickup / Flushmount Height From Survey (ft)	Drilled Diameter (inches)	Casing / Screen Diameter (inches)	Screened Interval (ft bgs)	Material	Pump Installed (yes/no)
TW-101	Third Phase	December 9, 2008	1742269.16	1785030.46	1323.10	1319.77	14.92	14.92	Stickup	3.33	8 3/4	2	4.92 - 14.92	PVC	No
TW-102D	Third Phase	November 25, 2008	1742713.46	1784721.11	1329.45	1326.86	30.5	30.5	Stickup	2.59	8 3/4	2	20.5 - 30.5	PVC	No
TW-102S	Third Phase	November 25, 2008	1742719.03	1784720.87	1329.59	1327.20	15	15	Stickup	2.39	8 3/4	2	5 - 15	PVC	No
TW-103D	Third Phase	January 5, 2009	1742215.14	1784551.27	1325.02	1321.98	34.74	34.74	Stickup	3.04	8 3/4	2	24.74 - 34.74	PVC	No
TW-103S	Third Phase	November 21, 2008	1742207.06	1784548.70	1324.73	1322.19	20.25	20.25	Stickup	2.54	7 3/4	2	10.25 - 20.25	PVC	No
TW-104D	Third Phase	January 13, 2009	1742256.45	1784299.85	1328.88	1326.00	39.82	39.82	Stickup	2.88	8 3/4	2	29.82 - 39.82	PVC	No
TW-104S	Third Phase	November 24, 2008	1742261.35	1784295.34	1328.75	1326.13	19.8	19.8	Stickup	2.62	8 3/4	2	9.8 - 19.8	PVC	No
TW-105D	Third Phase	January 5, 2009	1742475.47	1784269.53	1331.16	1328.75	44.93	44.93	Stickup	2.41	8 3/4	2	29.93 - 44.93	PVC	No
TW-105S	Third Phase	November 24, 2008	1742483.61	1784266.09	1331.53	1328.96	15	15	Stickup	2.57	8 3/4	2	5 - 15	PVC	No
TW-106D	Third Phase	December 12, 2008	1742891.32	1785084.62	1321.33	1318.49	30	30	Stickup	2.84	8 3/4	2	20 - 30	PVC	No
TW-106S	Third Phase	December 12, 2008	1742899.97	1785085.05	1320.76	1318.24	10	10	Stickup	2.52	8 3/4	2	4 - 10	PVC	No
TW-107	Third Phase	January 8, 2009	1743011.57	1786100.17	1314.07	1311.06	29.85	29.85	Stickup	3.01	8 3/4	2	19.85 - 29.85	PVC	No
TW-108	Third Phase	December 5, 2008	1743046.77	1786029.10	1314.67	1312.19	20	20	Stickup	2.48	8 3/4	2	10 - 20	PVC	No
TW-109	Third Phase	November 26, 2008	1742923.71	1785880.27	1316.48	1314.08	25.44	25.44	Stickup	2.4	8 3/4	2	10.44 - 25.44	PVC	No
TW-110	Third Phase	November 14, 2008	1741227.10	1784956.24	1313.93	1311.32	29.99	29.99	Stickup	2.61	8 3/4	2	22.99 - 29.99	PVC	No
TW-111	Third Phase	November 18, 2008	1742704.68	1786624.01	1299.02	1296.03	20	20	Stickup	2.99	7 3/4	2	10 - 20	PVC	No
TW-112	Third Phase	November 18, 2008	1742747.86	1786873.98	1294.79	1292.34	14.94	14.94	Stickup	2.45	7 3/4	2	4.94 - 14.94	PVC	No
TW-113	Third Phase	November 18, 2008	1743057.93	1786772.58	1296.31	1293.69	14.94	14.94	Stickup	2.62	7 3/4	2	4.94 - 14.94	PVC	No
TW-114	Third Phase	November 18, 2008	1743309.67	1786685.93	1297.30	1294.65	15	15	Stickup	2.65	7 3/4	2	5 - 15	PVC	No
TW-115	Third Phase	January 20, 2009	1743498.19	1785407.54	1317.22	1314.09	14.62	14.62	Stickup	3.13	8 3/4	2	4.62 - 14.62	PVC	No
TW-116D	Third Phase	January 20, 2009	1743658.23	1785626.31	1311.49	1308.92	19.92	19.92	Stickup	2.57	8 3/4	2	12.92 - 19.92	PVC	No
TW-116S	Third Phase	January 20, 2009	1743660.60	1785628.49	1311.23	1308.84	11	11	Stickup	2.39	8 3/4	2	6 - 11	PVC	No
TW-118	Third Phase	December 3, 2008	1744807.95	1785382.88	1324.39	1321.79	29.9	29.9	Stickup	2.6	8 3/4	2	19.9 - 29.9	PVC	No
TW-119	Third Phase	December 3, 2008	1744957.87	1785376.67	1324.17	1321.50	25	25	Stickup	2.67	8 3/4	2	15 - 25	PVC	No
TW-120	Third Phase	January 7, 2009	1744892.10	1785179.82	1327.26	1324.23	29.82	29.82	Stickup	3.03	8 3/4	2	19.82 - 29.82	PVC	No
TW-121	Third Phase	December 4, 2008	1744923.96	1785494.47	1319.24	1316.55	25	25	Stickup	2.69	8 3/4	2	15 - 25	PVC	No
TW-122	Third Phase	December 5, 2008	1745276.62	1785570.68	1319.97	1317.33	30	30	Stickup	2.64	8 3/4	2	20 - 30	PVC	No
TW-123	Third Phase	January 8, 2009	1744628.14	1786189.41	1307.83	1305.14	14.95	14.95	Stickup	2.69	8 3/4	2	9.95 - 14.95	PVC	No
TW-124	Third Phase	December 1, 2008	1739701.19	1784356.71	1319.55	1317.06	10	10	Stickup	2.49	8 3/4	2	5 - 10	PVC	No
TW-125	Third Phase	January 6, 2009	1739572.71	1784682.17	1329.78	1326.82	19.95	19.95	Stickup	2.96	8 3/4	2	9.95 - 19.95	PVC	No
TW-126	Third Phase	January 6, 2009	1740269.13	1785355.79	1306.72	1304.03	14.99	14.99	Stickup	2.69	8 3/4	2	4.99 - 14.99	PVC	No
TW-128	Third Phase	January 6, 2009	1739798.96	1785604.46	1307.37	1304.90	19.83	19.83	Stickup	2.51	8 3/4	2	9.83 - 19.83		
TW-129	Third Phase	December 10, 2008	1740146.93	1785317.46	1309.43	1306.32	14.89	14.89	Stickup	3.11	8 3/4	2	4.89 - 14.89	PVC	No
TW-130	Third Phase	December 11, 2008	1740715.94	1784675.09	1307.49	1304.83	14.89	14.89	Stickup	2.66	8 3/4	2	4.89 - 14.89	PVC	No
TW-131	Third Phase	January 6, 2009	1740641.17	1785296.33	1305.84	1302.59	19.82	19.82	Stickup	3.25	8 3/4	2	9.82 - 19.82	PVC	No
SB-04	Third Phase	November 26, 2007	1743635.08	1786149.64	1304.43	1302.01	18	18	Stickup	2.42	2	1	8 - 18	Sch. 40 PVC	No
SB-08	Third Phase	November 26, 2007	1743746.87	1786170.90	1305.15	1302.75	19	19	Stickup	2.4	2	1	6 - 19	Sch. 40 PVC	No
SB-09	Third Phase	November 27, 2007	1744054.75	1786168.40	1306.50	1304.19	20	20	Stickup	2.31	2	1	6 - 20	Sch. 40 PVC	No
SB-11	Third Phase	November 28, 2007	1744117.03	1785777.99	1313.57	1310.86	19	19	Stickup	2.71	2	1	9 - 19	Sch. 40 PVC	No
SB-14	Third Phase	November 27, 2007	1744258.24	1785782.48	1315.05	1312.57	17	17	Stickup	2.48	2	1	5 - 17	Sch. 40 PVC	No
SB-17	Third Phase	November 27, 2007	1744316.42	1785910.19	1311.52	1308.24	15	15	Stickup	3.28	2	1	5 - 15	Sch. 40 PVC	No
SB-30	Third Phase	November 28, 2007	1744731.93	1786050.51	1311.13	1308.22	13	13	Stickup	2.91	2	1	10 - 13	Sch. 40 PVC	No
SB-36	Third Phase	December 3, 2007	1743686.85	1787071.69	1294.58	1292.03	19	19	Stickup	2.55	2	1	4 - 19	Sch. 40 PVC	No
SB-37	Third Phase	December 3, 2007	1744036.82	1786769.92	1297.77	1295.01	14	14	Stickup	2.76	2	1	4 - 14	Sch. 40 PVC	No
SB-38	Third Phase	December 3, 2007	1744450.71	1786506.03	1307.58	1304.82	20.8	20.8	Stickup	2.76	2	1	5.8 - 20.8	Sch. 40 PVC	No
FINA/MW-38	Pre-existing		1744575.31	1786229.86	1306.26	1304.34		19.25	Stickup	1.92	--	2	9-19	--	Yes

Table 1
Well Cconstruction Summary
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Borehole / Well ID	Pre-existing / Third Phase	Completion Date	Northing	Easting	Top of Casing Elevation (ft AMSL)	Ground Surface Elevation (ft AMSL)	Total Depth of Borehole (ft bgs)	Total Depth of Well (ft bgs)	Stickup / Flushmount	Stickup / Flushmount Height From Survey (ft)	Drilled Diameter (inches)	Casing / Screen Diameter (inches)	Screened Interval (ft bgs)	Material	Pump Installed (yes/no)
N1-1	Pre-existing	September 9, 2003	1745964.19	1785744.49	1316.25	1313.68	55.50	22.50	Stickup	2.57	--	2	7-22.5	--	No
N2-1	Pre-existing	September 13, 2003	1743805.37	1784592.77	1334.30	1331.99	70.00	24.50	Stickup	2.31	--	2	9-24	--	No
N2-2	Pre-existing	September 24, 2003	1744752.31	1786130.69	1310.32	1307.42	21.00	21.00	Stickup	2.90	7 3/4	2	6-21	--	Yes
N2-3	Pre-existing	September 24, 2003	1744352.21	1785992.66	1309.42	1307.11	15.00	15.00	Stickup	2.31	7 3/4	2	5-15	--	Yes
N2-4	Pre-existing	September 13, 2003	1743475.54	1786585.96	1302.80	1300.56	26.00	26.00	Stickup	2.24	--	2	15-26	--	Yes
N2-5	Pre-existing	September 25, 2005	1744247.42	1786375.69	1305.19	1302.29	19.00	19.00	Stickup	2.90	7 3/4	2	14-19	--	No
N2-6	Pre-existing	September 25, 2003	1744108.24	1786248.97	1302.16	1302.39	20.00	20.00	Flushmount	-0.23	7 3/4	2	5-20	--	No
N3-1	Pre-existing	September 15, 2003	1744600.61	1787271.67	1294.10	1291.83	78.80	78.80	Stickup	2.27	--	2	73.8-78.8	--	Yes
N3-2	Pre-existing	September 24, 2003	1743905.27	1787606.40	1290.26	1287.71	16.00	16.00	Stickup	2.55	7 3/4	--	6-16	--	No
N3-3	Pre-existing	September 26, 2003	1743452.08	1787473.30	1293.08	1290.81	17.25	17.25	Stickup	2.27	7 3/4	--	7.25-17.25	--	No
N3-4	Pre-existing	September 26, 2003	1743629.31	1787137.35	1294.31	1291.93	18.50	18.50	Stickup	2.38	7 3/4	2	6.5-18.5	--	Yes
N4-1	Pre-existing	September 15, 2003	1743217.68	1786150.26	1310.61	1308.29	23.00	23.00	Stickup	2.32	--	2	13-23	--	No
N4-2	Pre-existing	September 26, 2003	1742451.31	1786157.50	1313.50	1311.22	28.00	28.00	Stickup	2.28	--	2	13-28	--	No
N4-3	Pre-existing	September 14, 2003	1742741.67	1785467.50	1323.34	1321.11	20.10	20.1	Stickup	2.23	--		5.1-20.1	--	No
N4-4	Pre-existing	September 26, 2003	1742868.32	1784042.94	1332.25	1329.42	23.00	23.00	Stickup	2.83	--	2	8-23	--	Yes
N5-1	Pre-existing	September 16, 2003	1741905.91	1786159.81	1311.20	1309.24	23.50	23.50	Stickup	1.96	--	2	13-23	--	Yes
N5-2	Pre-existing	September 25, 2003	1741324.75	1786178.39	1309.77	1307.52	28.00	28.00	Stickup	2.25	--	2	18-28	--	Yes
N5-3	Pre-existing	September 14, 2003	1740806.20	1786165.65	1302.43	1300.22	80.00	20.00	Stickup	2.21	--	2	5-20	--	No
N6-1	Pre-existing	September 23, 2003	1740265.15	1784555.11	1313.84	1311.72	23.50	23.50	Stickup	2.12	--	2	13.5-23.5	--	No
W-01D	Pre-existing	--	1743588.97	1787714.04	1292.67	1288.01	--	92.40	Stickup	4.66	--	4	67-87	--	Yes
W-01S	Pre-existing	--	1743563.49	1787733.75	1290.15	1287.23	--	19.90	Stickup	2.92	--	4	9-17	--	Yes
W-03	Pre-existing	--	1744614.32	1786798.22	1305.68	1303.85	--	19.25	Stickup	1.83	--	4	8-18	--	Yes
W-08	Pre-existing	--	1746074.57	1785607.59	1319.90	1316.99	--	22.80	Stickup	2.91	--	4	10-20	--	Yes
W-15D	Pre-existing	--	1739057.45	1786116.48	1324.78	1324.16	--	130.00	Flushmount	0.62	--	4	109-129	--	Yes
W-15S	Pre-existing	--	1739011.20	1786190.69	1323.81	1321.93	--	22.90	Stickup	1.88	--	4	11-21	--	Yes
W-16S	Pre-existing	--	1739122.28	1783660.77	1337.41	1335.97	--	21.35	Stickup	1.44	--	4	9-17	--	Yes
W-22	Pre-existing	--	1744592.88	1787274.25	1293.94	1292.09	--	16.5	Stickup	1.85	--	4	6.5-16.5	--	No
W-23	Pre-existing	--	1744552.83	1786447.34	1304.88	1302.72	--	18.60	Stickup	2.16	--	4	6.3-16.3	--	Yes
W-24	Pre-existing	--	1744789.04	1786362.29	1306.35	1304.12	--	19.05	Stickup	2.23	--	4	11.5-16.5	--	Yes
W-26	Pre-existing	--	1740245.53	1786107.23	1298.18	1296.85	--	10.67	Stickup	1.33	--	4	6-8.5	--	Yes
W-29D	Pre-existing	--	1745725.31	1784620.12	1340.93	1339.15	--	--	Stickup	1.78	--	4	63-83	--	Yes
W-29S	Pre-existing	--	1745716.57	1784626.93	1341.21	1339.16	--	24.60	Stickup	2.05	--	4	15-22.5	--	No
OW-01	Pre-existing	March 22, 2005	1745122.74	1785373.78	1324.08	1321.24	26.3	26.3	Stickup	2.84	--	2	16-26	--	No
OW-02	Pre-existing	March 25, 2005	1744073.93	1785480.48	1320.33	1317.54	--	11	Stickup	2.79	--	2	5.2-10.2	--	No
OW-03	Pre-existing	May 19, 2005	1744608.89	1787268.56	1294.00	1291.70	40.00	40.5	Stickup	2.30	--	2	30-40	--	No
OW-04	Pre-existing	May 19, 2005	1744262.39	1787372.08	1290.45	1288.03	40.50	40.5	Stickup	2.41	--	2	28-38	--	No
OW-05	Pre-existing	May 18, 2005	1743607.35	1787714.28	1290.46	1287.86	39.50	39.5	Stickup	2.60	--	2	29-39	--	No
OW-06	Pre-existing	May 19, 2005	1740782.11	1786184.07	1302.26	1299.69	47.50	45.5	Stickup	2.57	--	2	35-45	--	No
OW-07	Pre-existing	April 5, 2005	1739775.95	1783960.06	1327.50	1324.53	10	10	Stickup	2.97	--	2	5-10	--	No
OW-08	Pre-existing	March 28, 2005	1740448.55	1784435.07	1314.98	1312.12	15	15	Stickup	2.86	--	2	4.8-14.8	--	No
OW-09	Pre-existing	March 28, 2005	1740319.74	1784917.31	1312.80	1310.02	15.25	15.25	Stickup	2.78	--	2	4.6-14.6	--	No
OW-10	Pre-existing	April 5, 2005	1740561.35	1785754.77	1304.44	1301.62	18	18	Stickup	2.82	--	2	6-16	--	No
OW-11	Pre-existing	April 4, 2005	1741076.79	1786047.14	1305.34	1302.42	17	17	Stickup	2.92	--	2	7-17	--	No
OW-12	Pre-existing	April 4, 2005	1740519.36	1786185.03	1300.51	1297.62	18	18	Stickup	2.89	--	2	6.9-16.9	--	No
OW-13	Pre-existing	March 26, 2005	1743311.42	1785869.74	1315.43	1312.75	22.4	22.4	Stickup	2.68	--	2	12.4-22.4	--	No
OW-14	Pre-existing	March 28, 2005	1743344.62	1786142.65	1310.26	1307.61	15	15	Stickup	2.65	--	2	4.6-14.6	--	No

Table 1
Well Cconstruction Summary
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Borehole / Well ID	Pre-existing / Third Phase	Completion Date	Northing	Easting	Top of Casing Elevation (ft AMSL)	Ground Surface Elevation (ft AMSL)	Total Depth of Borehole (ft bgs)	Total Depth of Well (ft bgs)	Stickup / Flushmount	Stickup / Flushmount Height From Survey (ft)	Drilled Diameter (inches)	Casing / Screen Diameter (inches)	Screened Interval (ft bgs)	Material	Pump Installed (yes/no)
OW-16	Pre-existing	March 24, 2005	1743468.97	1786587.03	1303.46	1300.64	14.2	14.2	Stickup	2.82	--	2	9-14	--	No
OW-18T	Pre-existing	March 25, 2005	1744031.05	1785984.52	1308.68	1305.93	10	10	Stickup	2.75	--	2	5-10	--	No
OW-19T	Pre-existing	March 25, 2005	1744422.24	1785781.52	1317.50	1314.56	12.5	12.5	Stickup	2.94	--	2	7.5-12.5	--	No
OW-21	Pre-existing	March 23, 2005	1745437.58	1785971.59	1311.61	1309.03	8	8	Stickup	2.58	--	2	2.9-7.9	--	No
OW-22T	Pre-existing	March 26, 2005	1744280.58	1786118.22	1308.35	1305.36	16	16	Stickup	2.99	--	2	6-16	--	No
OW-23T	Pre-existing	March 26, 2005	1744385.97	1786220.02	1307.36	1304.09	20	20	Stickup	3.27	--	2	10-20	--	No
OW-24	Pre-existing	March 25, 2005	1743901.68	1786273.70	1304.85	1301.87	23	23	Stickup	2.98	--	2	7-22	--	No
OW-25	Pre-existing	March 25, 2005	1744068.17	1786425.37	1303.18	1300.46	20	20	Stickup	2.72	--	2	4-19	--	No
OW-26	Pre-existing	April 2, 2005	1743901.56	1786491.43	1302.62	1299.62	18.8	18.8	Stickup	3.00	--	2	8.8-18.8	--	No
OW-27T	Pre-existing	March 28, 2005	1744293.94	1786612.23	1303.43	1303.24	21	21	Stickup	0.19	--	2	6-21	--	No
OW-28T	Pre-existing	March 28, 2005	1743939.05	1786886.46	1301.57	1301.00	19.5	19.5	Stickup	0.57	--	2	9-19	--	No
OW-29	Pre-existing	March 29, 2005	1744706.01	1787047.62	1294.68	1292.06	19.5	19.5	Stickup	2.62	--	2	9-19	--	No
OW-30	Pre-existing	April 2, 2005	1744437.37	1787302.09	1293.19	1290.31	19.5	19.5	Stickup	2.88	--	2	8.25-18.25	--	No
OW-31	Pre-existing	April 1, 2005	1744258.21	1787378.50	1290.32	1287.35	15	15	Stickup	2.97	--	2	4.9-14.9	--	No
OW-32	Pre-existing	April 1, 2005	1744108.60	1787465.49	1294.23	1291.55	20	20	Stickup	2.68	--	2	8.75-18.75	--	No
OW-33	Pre-existing	April 2, 2005	1743744.72	1787671.63	1291.61	1288.59	19.2	19.2	Stickup	3.02	--	2	9.2-19.2	--	No
OW-35	Pre-existing	April 2, 2005	1744995.76	1786116.45	1307.76	1304.74	9.3	9.3	Stickup	3.02	--	2	5-9.3	--	No
OW-36	Pre-existing	March 23, 2005	1744730.48	1786600.11	1304.79	1301.81	18	18	Stickup	2.98	--	2	7.65-17.65	--	No
OW-37	Pre-existing	March 24, 2005	1743663.11	1786259.74	1304.01	1301.13	22.13	22.1	Stickup	2.88	--	2	7-22	--	No
OW-38	Pre-existing	March 24, 2005	1743652.66	1786541.25	1301.94	1298.84	19	19	Stickup	3.10	--	2	8-18	--	No
OW-39	Pre-existing	May 20, 2005	1745069.95	1784612.48	1340.81	1338.45	25.50	25.5	Stickup	2.36	--	2	12-22	--	No

Legend

--	No data available
AMSL	above mean sea level
BGS	below ground surface

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
FINA_MW-38	1/6/2004	1,306.26	4.89	---	0.00	---	1,301.37	---	---
FINA_MW-38	4/6/2004	1,306.26	3.5	---	0.00	---	1,302.76	---	---
FINA_MW-38	7/13/2004	1,306.26	2.71	---	0.00	---	1,303.55	---	---
FINA_MW-38	11/15/2004	1306.26	4.12	---	0.00	---	1,302.14	---	---
FINA_MW-38	3/21/2005	1306.26	4.42	---	0.00	---	1,301.84	---	---
FINA_MW-38	5/17/2005	1306.26	4.68	---	0.00	---	1,301.58	---	---
FINA_MW-38	6/14/2005	1306.26	3	---	0.00	---	1,303.26	---	---
FINA_MW-38	8/2/2005	1306.26	4.59	---	0.00	---	1,301.67	---	---
FINA_MW-38	2/14/2008	1306.26	4.17	---	0.00	---	1,302.09	---	---
FINA_MW-38	2/10/2009	1306.26	4.94	---	0.00	---	1,301.32	---	---
N1-1	1/6/2004	1,316.25	16.4	---	0.00	---	1,299.85	---	---
N1-1	4/6/2004	1,316.25	13.16	---	0.00	---	1,303.09	---	---
N1-1	7/13/2004	1,316.25	13.45	---	0.00	---	1,302.80	---	---
N1-1	11/15/2004	1316.25	13.68	---	0.00	---	1,302.57	---	---
N1-1	3/21/2005	1316.25	14.82	---	0.00	---	1,301.43	---	---
N1-1	5/17/2005	1316.25	16.09	---	0.00	---	1,300.16	---	---
N1-1	6/14/2005	1316.25	10.02	---	0.00	---	1,306.23	---	---
N1-1	8/2/2005	1316.25	15.97	---	0.00	---	1,300.28	---	---
N1-1	2/14/2008	1316.25	13.75	---	0.00	---	1,302.50	---	---
N1-1	2/10/2009	1316.25	15.9	---	0.00	---	1,300.35	---	---
N2-1	1/6/2004	1,334.30	18.35	---	0.00	---	1,315.95	---	---
N2-1	4/6/2004	1,334.30	16.7	---	0.00	---	1,317.60	---	---
N2-1	7/13/2004	1,334.30	16.8	---	0.00	---	1,317.50	---	---
N2-1	11/15/2004	1,334.30	18.76	---	0.00	---	1,315.54	---	---
N2-1	3/21/2005	1,334.30	16.97	---	0.00	---	1,317.33	---	---
N2-1	5/17/2005	1,334.30	17.15	---	0.00	---	1,317.15	---	---
N2-1	6/9/2005	1,334.30	16.88	---	0.00	---	1,317.42	---	---
N2-1	6/14/2005	1,334.30	11.19	---	0.00	---	1,323.11	---	---
N2-1	8/2/2005	1,334.30	17.58	---	0.00	---	1,316.72	---	---
N2-1	2/14/2008	1,334.30	18.91	---	0.00	---	1,315.39	---	---
N2-1	2/10/2009	1,334.30	17.6	---	0.00	---	1,316.70	---	---
N2-2	1/6/2004	1,310.32	6.49	---	0.00	---	1,303.83	---	---
N2-2	4/6/2004	1,310.32	5.65	---	0.00	---	1,304.67	---	---
N2-2	7/13/2004	1,310.32	5.26	---	0.00	---	1,305.06	---	---
N2-2	11/15/2004	1,310.32	6.43	---	0.00	---	1,303.89	---	---
N2-2	3/21/2005	1,310.32	6.82	---	0.00	---	1,303.50	---	---
N2-2	5/17/2005	1,310.32	7.02	---	0.00	---	1,303.30	---	---
N2-2	6/14/2005	1,310.32	5.79	---	0.00	---	1,304.53	---	---
N2-2	8/2/2005	1,310.32	7.08	---	0.00	---	1,303.24	---	---
N2-2	2/14/2008	1,310.32	6.92	---	0.00	---	1,303.40	---	---
N2-2	2/10/2009	1,310.32	7.64	---	0.00	---	1,302.68	---	---
N2-3	1/6/2004	1,309.42	7.19	---	0.00	---	1,302.23	---	---
N2-3	4/6/2004	1,309.42	5.45	---	0.00	---	1,303.97	---	---
N2-3	7/13/2004	1,309.42	5.4	---	0.00	---	1,304.02	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
N2-3	11/15/2004	1,309.42	6.69	---	0.00	---	1,302.73	---	---
N2-3	3/21/2005	1,309.42	5.61	---	0.00	---	1,303.81	---	---
N2-3	5/17/2005	1,309.42	5.92	---	0.00	---	1,303.50	---	---
N2-3	6/14/2005	1,309.42	5.32	---	0.00	---	1,304.10	---	---
N2-3	8/2/2005	1,309.42	5.86	---	0.00	---	1,303.56	---	---
N2-3	2/14/2008	1,309.42	5.96	---	0.00	---	1,303.46	---	---
N2-3	2/10/2009	1,309.42	5.15	---	0.00	---	1,304.27	---	---
N2-4	1/6/2004	1,302.80	11.24	---	0.00	---	1,291.56	---	---
N2-4	4/6/2004	1,302.80	8.94	---	0.00	---	1,293.86	---	---
N2-4	7/13/2004	1,302.80	8.72	---	0.00	---	1,294.08	---	---
N2-4	11/15/2004	1,302.80	10.68	---	0.00	---	1,292.12	---	---
N2-4	3/21/2005	1,302.80	9.02	---	0.00	---	1,293.78	---	---
N2-4	5/17/2005	1,302.80	10.05	---	0.00	---	1,292.75	---	---
N2-4	6/14/2005	1,302.80	8.27	---	0.00	---	1,294.53	---	---
N2-4	8/2/2005	1,302.80	11.15	---	0.00	---	1,291.65	---	---
N2-4	2/14/2008	1,302.80	10.92	---	0.00	---	1,291.88	---	---
N2-4	2/10/2009	1,302.80	9.57	---	0.00	---	1,293.23	---	---
N2-5	1/6/2004	1,305.19	10.85	---	0.00	---	1,294.34	---	---
N2-5	4/6/2004	1,305.19	9.3	---	0.00	---	1,295.89	---	---
N2-5	7/13/2004	1,305.19	8.74	---	0.00	---	1,296.45	---	---
N2-5	11/15/2004	1,305.19	10.01	9.61	0.40	9.69	1,295.18	1295.50	1295.58
N2-5	3/21/2005	1,305.19	10.35	9.84	0.51	9.94	1,294.84	1295.25	1295.35
N2-5	5/17/2005	1,305.19	10.7	10.11	0.59	10.23	1,294.49	1294.96	1295.08
N2-5	6/14/2005	1,305.19	8.28	---	---	---	1,296.91	---	---
N2-5	8/2/2005	1,305.19	11.19	10.37	0.82	10.53	1,294.00	1294.66	1294.82
N2-5	2/14/2008	1,305.19	12.2	10.01	2.19	10.45	1,292.99	1294.74	1295.18
N2-5	2/11/2009	1,305.19	13.31	10.92	2.39	11.40	1,291.88	1293.79	1294.27
N2-6	1/6/2004	1,302.16	12.7	5.44	7.26	6.89	1,289.46	1295.27	1296.72
N2-6	4/6/2004	1,302.16	15.39	3.46	11.93	5.85	1,286.77	1296.31	1298.7
N2-6	7/13/2004	1,302.16	16.24	4.35	11.89	6.73	1,285.92	1295.43	1297.81
N2-6	11/15/2004	1,302.16	12.05	5.15	6.90	6.53	1,290.11	1295.63	1297.01
N2-6	3/21/2005	1,302.16	14.2	5.56	8.64	7.29	1,287.96	1294.87	1296.6
N2-6	5/17/2005	1,302.16	16.77	4	12.77	6.55	1,285.39	1295.61	1298.16
N2-6	6/14/2005	1,302.16	14.2	2.69	11.51	4.99	1,287.96	1297.17	1299.47
N2-6	8/2/2005	1,302.16	17.84	3.96	13.88	6.74	1,284.32	1295.42	1298.2
N2-6	2/14/2008	1,302.16	11.82	5.21	6.61	6.53	1,290.34	1295.63	1296.95
N2-6	2/10/2009	1,302.16	7.31	5.41	1.90	5.79	1,294.85	1296.37	1296.75
N3-1	1/6/2004	1,294.10	3.26	---	0.00	---	1,290.84	---	---
N3-1	4/6/2004	1,294.10	1.12	---	0.00	---	1,292.98	---	---
N3-1	7/13/2004	1,294.10	0.55	---	0.00	---	1,293.55	---	---
N3-1	11/15/2004	1,294.10	2.86	---	0.00	---	1,291.24	---	---
N3-1	3/21/2005	1,294.10	1.59	---	0.00	---	1,292.51	---	---
N3-1	5/17/2005	1,294.10	2.46	---	0.00	---	1,291.64	---	---
N3-1	6/9/2005	1,294.10	1.39	---	0.00	---	1,292.71	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
N3-1	6/14/2005	1,294.10	0.25	---	0.00	---	1,293.85	---	---
N3-1	8/2/2005	1,294.10	4.06	---	0.00	---	1,290.04	---	---
N3-1	12/4/2006	1,294.10	8.14	---	0.00	---	1,285.96	---	---
N3-1	12/8/2006	1,294.10	8.01	---	0.00	---	1,286.09	---	---
N3-1	12/13/2006	1,294.10	7.87	---	0.00	---	1,286.23	---	---
N3-1	12/14/2006	1,294.10	7.8	---	0.00	---	1,286.30	---	---
N3-1	12/21/2006	1,294.10	7.82	---	0.00	---	1,286.28	---	---
N3-1	12/26/2006	1,294.10	7.9	---	0.00	---	1,286.20	---	---
N3-1	1/4/2007	1,294.10	7.56	---	0.00	---	1,286.54	---	---
N3-1	1/10/2007	1,294.10	8.65	---	0.00	---	1,285.45	---	---
N3-1	1/18/2007	1,294.10	8	---	0.00	---	1,286.10	---	---
N3-1	1/25/2007	1,294.10	8.07	---	0.00	---	1,286.03	---	---
N3-1	2/21/2007	1,294.10	7.13	---	0.00	---	1,286.97	---	---
N3-1	3/13/2007	1,294.10	6.32	---	0.00	---	1,287.78	---	---
N3-1	4/29/2007	1,294.10	2.3	---	0.00	---	1,291.80	---	---
N3-1	5/21/2007	1,294.10	0.85	---	0.00	---	1,293.25	---	---
N3-1	6/22/20007	1,294.10	1.4	---	0.00	---	1,292.70	---	---
N3-1	7/18/2007	1,294.10	0.18	---	0.00	---	1,293.92	---	---
N3-1	8/17/2007	1,294.10	2.63	---	0.00	---	1,291.47	---	---
N3-1	9/14/2007	1,294.10	4.83	---	0.00	---	1,289.27	---	---
N3-1	10/25/2007	1,294.10	3.66	---	0.00	---	1,290.44	---	---
N3-1	11/15/2007	1,294.10	4.43	---	0.00	---	1,289.67	---	---
N3-1	12/19/2007	1,294.10	3.37	---	0.00	---	1,290.73	---	---
N3-1	1/23/2008	1,294.10	3.05	---	0.00	---	1,291.05	---	---
N3-1	2/14/2008	1,294.10	NM	---	---	---	---	---	---
N3-1	2/28/2008	1,294.10	1.58	---	0.00	---	1,292.52	---	---
N3-1	3/25/2008	1,294.10	0.89	---	0.00	---	1,293.21	---	---
N3-1	4/22/2008	1,294.10	1.32	---	0.00	---	1,292.78	---	---
N3-1	5/15/2008	1,294.10	0.08	---	0.00	---	1,294.02	---	---
N3-1	6/28/2006	1,294.10	NM	---	---	---	---	---	---
N3-1	7/22/2008	1,294.10	1.49	---	0.00	---	1,292.61	---	---
N3-1	8/27/2008	1,294.10	6.43	---	0.00	---	1,287.67	---	---
N3-1	9/25/2008	1,294.10	5.38	---	0.00	---	1,288.72	---	---
N3-1	10/23/2008	1,294.10	4.73	---	0.00	---	1,289.37	---	---
N3-1	11/21/2008	1,294.10	5.41	---	0.00	---	1,288.69	---	---
N3-1	12/30/2008	1,294.10	5.79	---	0.00	---	1,288.31	---	---
N3-1	2/12/2009	1,294.10	6.75	---	0.00	---	1,287.35	---	---
N3-2	1/6/2004	1,290.26	12.72	---	0.00	---	1,277.54	---	---
N3-2	4/6/2004	1,290.26	12.08	---	0.00	---	1,278.18	---	---
N3-2	7/13/2004	1,290.26	11.75	---	0.00	---	1,278.51	---	---
N3-2	11/15/2004	1290.26	12.5	---	0.00	---	1,277.76	---	---
N3-2	3/21/2005	1,290.26	12.23	---	0.00	---	1,278.03	---	---
N3-2	5/17/2005	1,290.26	12.63	---	0.00	---	1,277.63	---	---
N3-2	6/14/2005	1,290.26	10.31	---	0.00	---	1,279.95	---	---
N3-2	8/2/2005	1,290.26	13.1	---	0.00	---	1,277.16	---	---
N3-2	12/4/2006	1,290.26	NM	---	---	---	---	---	---
N3-2	12/8/2006	1,290.26	14.2	---	0.00	---	1,276.06	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
N3-2	12/13/2006	1,290.26	14.38	---	0.00	---	1,275.88	---	---
N3-2	12/14/2006	1,290.26	14.4	---	0.00	---	1,275.86	---	---
N3-2	12/21/2006	1,290.26	14.55	---	0.00	---	1,275.71	---	---
N3-2	12/26/2006	1,290.26	14.61	---	0.00	---	1,275.65	---	---
N3-2	1/4/2007	1,290.26	14.7	---	0.00	---	1,275.56	---	---
N3-2	1/10/2007	1,290.26	14.77	---	0.00	---	1,275.49	---	---
N3-2	1/18/2007	1,290.26	14.85	---	0.00	---	1,275.41	---	---
N3-2	1/25/2007	1,290.26	14.89	---	0.00	---	1,275.37	---	---
N3-2	2/21/2007	1,290.26	14.94	---	0.00	---	1,275.32	---	---
N3-2	3/13/2007	1,290.26	14.82	---	0.00	---	1,275.44	---	---
N3-2	4/29/2007	1,290.26	14.37	---	0.00	---	1,275.89	---	---
N3-2	5/21/2007	1,290.26	14.15	---	0.00	---	1,276.11	---	---
N3-2	6/22/20007	1,290.26	14.44	---	0.00	---	1,275.82	---	---
N3-2	7/18/2007	1,290.26	14.24	---	0.00	---	1,276.02	---	---
N3-2	8/17/2007	1,290.26	14.61	---	0.00	---	1,275.65	---	---
N3-2	9/14/2007	1,290.26	14.82	---	0.00	---	1,275.44	---	---
N3-2	10/25/2007	1,290.26	14.67	---	0.00	---	1,275.59	---	---
N3-2	11/15/2007	1,290.26	14.63	---	0.00	---	1,275.63	---	---
N3-2	12/19/2007	1,290.26	14.67	---	0.00	---	1,275.59	---	---
N3-2	1/23/2008	1,290.26	14.68	---	0.00	---	1,275.58	---	---
N3-2	2/14/2008	1,290.26	14.63	---	0.00	---	1,275.63	---	---
N3-2	2/28/2008	1,290.26	14.48	---	0.00	---	1,275.78	---	---
N3-2	3/25/2008	1,290.26	14.21	---	0.00	---	1,276.05	---	---
N3-2	4/22/2008	1,290.26	14.26	---	0.00	---	1,276.00	---	---
N3-2	5/15/2008	1,290.26	13.94	---	0.00	---	1,276.32	---	---
N3-2	6/28/2008	1,290.26	10.48	---	0.00	---	1,279.78	---	---
N3-2	7/22/2008	1,290.26	14.47	---	0.00	---	1,275.79	---	---
N3-2	9/25/2008	1,290.26	14.08	---	0.00	---	1,276.18	---	---
N3-2	10/23/2008	1,290.26	14.36	---	0.00	---	1,275.90	---	---
N3-2	11/21/2008	1,290.26	14.49	---	0.00	---	1,275.77	---	---
N3-2	12/30/2008	1,290.26	14.56	---	0.00	---	1,275.70	---	---
N3-2	2/10/2009	1,290.26	14.62	---	0.00	---	1,275.64	---	---
N3-3	1/6/2004	1,293.08	14.94	---	0.00	---	1,278.14	---	---
N3-3	4/6/2004	1,293.08	13.51	---	0.00	---	1,279.57	---	---
N3-3	7/13/2004	1,293.08	12.57	---	0.00	---	1,280.51	---	---
N3-3	11/15/2004	1,293.08	14.58	---	0.00	---	1,278.50	---	---
N3-3	3/21/2005	1,293.08	14.1	---	0.00	---	1,278.98	---	---
N3-3	5/17/2005	1,293.08	14.6	---	0.00	---	1,278.48	---	---
N3-3	6/14/2005	1,293.08	9.1	---	0.00	---	1,283.98	---	---
N3-3	8/2/2005	1,293.08	15.49	---	0.00	---	1,277.59	---	---
N3-3	12/4/2006	1,293.08	15.47	---	0.00	---	1,277.61	---	---
N3-3	12/8/2006	1,293.08	16.75	---	0.00	---	1,276.33	---	---
N3-3	12/13/2006	1,293.08	17.12	---	0.00	---	1,275.96	---	---
N3-3	12/14/2006	1,293.08	17.18	---	0.00	---	1,275.90	---	---
N3-3	12/21/2006	1,293.08	17.54	---	0.00	---	1,275.54	---	---
N3-3	12/26/2006	1,293.08	17.73	---	0.00	---	1,275.35	---	---
N3-3	1/4/2007	1,293.08	17.93	---	0.00	---	1,275.15	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
N3-3	1/10/2007	1,293.08	18.02	---	0.00	---	1,275.06	---	---
N3-3	1/18/2007	1,293.08	18.15	---	0.00	---	1,274.93	---	---
N3-3	1/25/2007	1,293.08	18.2	---	0.00	---	1,274.88	---	---
N3-3	2/21/2007	1,293.08	18.06	---	0.00	---	1,275.02	---	---
N3-3	3/13/2007	1,293.08	17.97	---	0.00	---	1,275.11	---	---
N3-3	4/29/2007	1,293.08	17.77	---	0.00	---	1,275.31	---	---
N3-3	5/21/2007	1,293.08	15.40	---	0.00	---	1,277.68	---	---
N3-3	6/22/20007	1,293.08	16.28	---	0.00	---	1,276.80	---	---
N3-3	7/18/2007	1,293.08	15.01	---	0.00	---	1,278.07	---	---
N3-3	8/17/2007	1,293.08	16.85	---	0.00	---	1,276.23	---	---
N3-3	9/14/2007	1,293.08	17.68	---	0.00	---	1,275.40	---	---
N3-3	10/25/2007	1,293.08	17.37	---	0.00	---	1,275.71	---	---
N3-3	11/15/2007	1,293.08	17.55	---	0.00	---	1,275.53	---	---
N3-3	12/19/2007	1,293.08	17.51	---	0.00	---	1,275.57	---	---
N3-3	1/23/2008	1,293.08	16.37	---	0.00	---	1,276.71	---	---
N3-3	2/14/2008	1,293.08	17.30	---	0.00	---	1,275.78	---	---
N3-3	2/28/2008	1,293.08	16.37	---	0.00	---	1,276.71	---	---
N3-3	3/25/2008	1,293.08	17.16	---	0.00	---	1,275.92	---	---
N3-3	4/22/2008	1,293.08	15.91	---	0.00	---	1,277.17	---	---
N3-3	5/15/2008	1,293.08	14.11	---	0.00	---	1,278.97	---	---
N3-3	6/28/2008	1,293.08	11.61	---	0.00	---	1,281.47	---	---
N3-3	7/22/2008	1,293.08	NM	---	---	---	---	---	---
N3-3	8/27/2008	1,293.08	NM	---	---	---	---	---	---
N3-3	9/25/2008	1,293.08	15.34	---	0.00	---	1,277.74	---	---
N3-3	10/23/2008	1,293.08	15.84	---	0.00	---	1,277.24	---	---
N3-3	11/21/2008	1,293.08	16.63	---	0.00	---	1,276.45	---	---
N3-3	12/30/2008	1,293.08	17.16	---	0.00	---	1,275.92	---	---
N3-3	2/10/2009	1,293.08	17.38	---	0.00	---	1,275.70	---	---
N3-4	1/6/2004	1,294.31	6.67	---	0.00	---	1,287.64	---	---
N3-4	4/6/2004	1,294.31	5.39	---	0.00	---	1,288.92	---	---
N3-4	7/13/2004	1,294.31	4.94	---	0.00	---	1,289.37	---	---
N3-4	11/15/2004	1,294.31	5.14	---	0.00	---	1,289.17	---	---
N3-4	3/21/2005	1,294.31	5.67	---	0.00	---	1,288.64	---	---
N3-4	5/17/2005	1,294.31	6.31	---	0.00	---	1,288.00	---	---
N3-4	6/14/2005	1,294.31	4.31	---	0.00	---	1,290.00	---	---
N3-4	8/2/2005	1,294.31	7.06	---	0.00	---	1,287.25	---	---
N3-4	12/4/2006	1,294.31	NM	---	---	---	---	---	---
N3-4	12/8/2006	1,294.31	NM	---	---	---	---	---	---
N3-4	12/13/2006	1,294.31	8.12	---	0.00	---	1,286.19	---	---
N3-4	12/14/2006	1,294.31	8.09	---	0.00	---	1,286.22	---	---
N3-4	12/21/2006	1,294.31	7.89	---	0.00	---	1,286.42	---	---
N3-4	12/26/2006	1,294.31	7.87	---	0.00	---	1,286.44	---	---
N3-4	1/4/2007	1,294.31	7.66	---	0.00	---	1,286.65	---	---
N3-4	1/10/2007	1,294.31	7.63	---	0.00	---	1,286.68	---	---
N3-4	1/18/2007	1,294.31	7.91	---	0.00	---	1,286.40	---	---
N3-4	1/25/2007	1,294.31	7.85	---	0.00	---	1,286.46	---	---
N3-4	2/21/2007	1,294.31	7.07	---	0.00	---	1,287.24	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
N3-4	3/13/2007	1,294.31	6.6	---	0.00	---	1,287.71	---	---
N3-4	4/29/2007	1,294.31	5.4	---	0.00	---	1,288.91	---	---
N3-4	5/21/2007	1,294.31	5.16	---	0.00	---	1,289.15	---	---
N3-4	6/22/20007	1,294.31	5.21	---	0.00	---	1,289.10	---	---
N3-4	7/18/2007	1,294.31	6.51	---	0.00	---	1,287.80	---	---
N3-4	8/17/2007	1,294.31	6.45	---	0.00	---	1,287.86	---	---
N3-4	9/14/2007	1,294.31	7.39	---	0.00	---	1,286.92	---	---
N3-4	10/25/2007	1,294.31	5.29	---	0.00	---	1,289.02	---	---
N3-4	11/15/2007	1,294.31	6.43	---	0.00	---	1,287.88	---	---
N3-4	12/19/2007	1,294.31	5.75	---	0.00	---	1,288.56	---	---
N3-4	1/23/2008	1,294.31	6.18	---	0.00	---	1,288.13	---	---
N3-4	2/14/2008	1,294.31	5.7	---	0.00	---	1,288.61	---	---
N3-4	2/28/2008	1,294.31	4.96	---	0.00	---	1,289.35	---	---
N3-4	3/25/2008	1,294.31	5.09	---	0.00	---	1,289.22	---	---
N3-4	4/22/2008	1,294.31	5.49	---	0.00	---	1,288.82	---	---
N3-4	5/15/2008	1,294.31	5.06	---	0.00	---	1,289.25	---	---
N3-4	6/28/2008	1,294.31	4.08	---	0.00	---	1,290.23	---	---
N3-4	7/22/2008	1,294.31	9.15	---	0.00	---	1,285.16	---	---
N3-4	8/27/2008	1,294.31	6.43	---	0.00	---	1,287.88	---	---
N3-4	9/25/2008	1,294.31	5.63	---	0.00	---	1,288.68	---	---
N3-4	10/23/2008	1,294.31	5.06	---	0.00	---	1,289.25	---	---
N3-4	11/21/2008	1,294.31	5.98	---	0.00	---	1,288.33	---	---
N3-4	12/30/2008	1,294.31	6.11	---	0.00	---	1,288.20	---	---
N3-4	2/10/2009	1,294.31	6.56	---	0.00	---	1,287.75	---	---
N4-1	1/6/2004	1,310.61	14.78	---	0.00	---	1,295.83	---	---
N4-1	4/6/2004	1,310.61	13.34	---	0.00	---	1,297.27	---	---
N4-1	7/13/2004	1,310.61	13.23	---	0.00	---	1,297.38	---	---
N4-1	11/15/2004	1,310.61	13.97	---	0.00	---	1,296.64	---	---
N4-1	3/21/2005	1,310.61	13.34	---	0.00	---	1,297.27	---	---
N4-1	5/17/2005	1,310.61	13.91	---	0.00	---	1,296.70	---	---
N4-1	6/14/2005	1,310.61	13	---	0.00	---	1,297.61	---	---
N4-1	8/2/2005	1,310.61	14.26	---	0.00	---	1,296.35	---	---
N4-1	2/14/2008	1,310.61	13.75	---	0.00	---	1,296.86	---	---
N4-1	2/10/2009	1,310.61	14.21	---	0.00	---	1,296.40	---	---
N4-2	1/6/2004	1,313.50	21.23	---	0.00	---	1,292.27	---	---
N4-2	4/6/2004	1,313.50	19.43	---	0.00	---	1,294.07	---	---
N4-2	7/13/2004	1,313.50	19.02	---	0.00	---	1,294.48	---	---
N4-2	11/15/2004	1,313.50	21.51	---	0.00	---	1,291.99	---	---
N4-2	3/21/2005	1,313.50	18.82	---	0.00	---	1,294.68	---	---
N4-2	5/17/2005	1,313.50	19.39	---	0.00	---	1,294.11	---	---
N4-2	6/14/2005	1,313.50	18.75	---	0.00	---	1,294.75	---	---
N4-2	8/2/2005	1,313.50	19.95	---	0.00	---	1,293.55	---	---
N4-2	2/14/2008	1,313.50	21.65	---	0.00	---	1,291.85	---	---
N4-2	2/10/2009	1,313.50	19.88	---	0.00	---	1,293.62	---	---
N4-3	1/6/2004	1,323.34	19.74	---	0.00	---	1,303.60	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
N4-3	4/6/2004	1,323.34	18	---	0.00	---	1,305.34	---	---
N4-3	7/13/2004	1,323.34	17.71	---	0.00	---	1,305.63	---	---
N4-3	11/15/2004	1,323.34	18.03	---	0.00	---	1,305.31	---	---
N4-3	3/21/2005	1,323.34	18.81	---	0.00	---	1,304.53	---	---
N4-3	5/17/2005	1,323.34	20.16	---	0.00	---	1,303.18	---	---
N4-3	6/14/2005	1,323.34	14.17	---	0.00	---	1,309.17	---	---
N4-3	8/2/2005	1,323.34	19.15	---	0.00	---	1,304.19	---	---
N4-3	2/10/2009					Well Destroyed			
N4-4	1/6/2004	1,332.25	18.86	---	0.00	---	1,313.39	---	---
N4-4	4/6/2004	1,332.25	15.84	---	0.00	---	1,316.41	---	---
N4-4	7/13/2004	1,332.25	15.64	---	0.00	---	1,316.61	---	---
N4-4	11/15/2004	1,332.25	17.13	---	0.00	---	1,315.12	---	---
N4-4	3/21/2005	1,332.25	16.61	---	0.00	---	1,315.64	---	---
N4-4	5/17/2005	1,332.25	17.44	---	0.00	---	1,314.81	---	---
N4-4	6/14/2005	1,332.25	10.26	---	0.00	---	1,321.99	---	---
N4-4	8/2/2005	1,332.25	19.39	---	0.00	---	1,312.86	---	---
N4-4	2/14/2008	1,332.25	16.89	---	0.00	---	1,315.36	---	---
N4-4	2/10/2009	1,332.25	17.98	---	0.00	---	1,314.27	---	---
N5-1	1/6/2004	1,311.20	19.63	---	0.00	---	1,291.57	---	---
N5-1	4/6/2004	1,311.20	16.11	---	0.00	---	1,295.09	---	---
N5-1	7/13/2004	1,311.20	15.88	---	0.00	---	1,295.32	---	---
N5-1	11/15/2004	1,311.20	20.3	---	0.00	---	1,290.90	---	---
N5-1	3/21/2005	1,311.20	15.78	---	0.00	---	1,295.42	---	---
N5-1	5/17/2005	1,311.20	16.68	---	0.00	---	1,294.52	---	---
N5-1	6/14/2005	1,311.20	15.63	---	0.00	---	1,295.57	---	---
N5-1	8/2/2005	1,311.20	18.13	---	0.00	---	1,293.07	---	---
N5-1	2/14/2008	1,311.20	NM	---	---	---	---	---	---
N5-1	2/10/2009	1,311.20	17.94	---	0.00	---	1,293.26	---	---
N5-2	1/6/2004	1,309.77	16.03	---	0.00	---	1,293.74	---	---
N5-2	4/6/2004	1,309.77	14.42	---	0.00	---	1,295.35	---	---
N5-2	7/13/2004	1,309.77	14.18	---	0.00	---	1,295.59	---	---
N5-2	11/15/2004	1,309.77	16.06	---	0.00	---	1,293.71	---	---
N5-2	3/21/2005	1,309.77	14.14	---	0.00	---	1,295.63	---	---
N5-2	5/17/2005	1,309.77	14.76	---	0.00	---	1,295.01	---	---
N5-2	6/14/2005	1,309.77	14.02	---	0.00	---	1,295.75	---	---
N5-2	8/2/2005	1,309.77	15.79	---	0.00	---	1,293.98	---	---
N5-2	2/14/2008	1,309.77	16	---	0.00	---	1,293.77	---	---
N5-2	2/10/2009	1,309.77	15.7	---	0.00	---	1,294.07	---	---
N5-3	1/6/2004	1,302.43	11.14	---	0.00	---	1,291.29	---	---
N5-3	4/6/2004	1,302.43	7.22	---	0.00	---	1,295.21	---	---
N5-3	7/13/2004	1,302.43	6.46	---	0.00	---	1,295.97	---	---
N5-3	11/15/2004	1,302.43	10.33	---	0.00	---	1,292.10	---	---
N5-3	3/21/2005	1,302.43	8.11	---	0.00	---	1,294.32	---	---
N5-3	5/17/2005	1,302.43	9.39	---	0.00	---	1,293.04	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
N5-3	6/9/2005	1,302.43	6.7	---	0.00	---	1,295.73	---	---
N5-3	6/14/2005	1,302.43	4.87	---	0.00	---	1,297.56	---	---
N5-3	8/2/2005	1,302.43	10.74	---	0.00	---	1,291.69	---	---
N5-3	2/14/2008	1,302.43	10.81	---	0.00	---	1,291.62	---	---
N5-3	2/10/2009	1,302.43	10.74	---	0.00	---	1,291.69	---	---
N6-1	1/6/2004	1,313.84	6.35	6.3	0.05	6.31	1,307.49	1307.53	1307.54
N6-1	4/6/2004	1,313.84	5.5	5.45	0.05	5.46	1,308.34	1308.38	1308.39
N6-1	7/13/2004	1,313.84	5.11	5.09	0.02	5.09	1,308.73	1308.75	1308.75
N6-1	11/15/2004	1,313.84	6.9	6.87	0.03	6.88	1,306.94	1306.96	1306.97
N6-1	3/21/2005	1,313.84	5.28	5.25	0.03	5.26	1,308.56	1308.58	1308.59
N6-1	5/17/2005	1,313.84	5.99	---	0.00	---	1,307.85	---	---
N6-1	6/14/2005	1,313.84	5.86	5.82	0.04	5.83	1,307.98	1308.01	1308.02
N6-1	8/2/2005	1,313.84	6.15	6.08	0.07	6.09	1,307.69	1307.75	1307.76
N6-1	2/14/2008	1,313.84	7.5	7.45	0.05	7.46	1,306.34	1306.38	1306.39
N6-1	2/10/2009	1,313.84	5.92	5.86	0.06	5.87	1,307.92	1307.97	1307.98
W-01D	1/6/2004	1,292.67	3.49	---	0.00	---	1,289.18	---	---
W-01D	4/6/2004	1,292.67	0.92	---	0.00	---	1,291.75	---	---
W-01D	7/13/2004	1,292.67	2.65	---	0.00	---	1,290.02	---	---
W-01D	11/15/2004	1,292.67	3.05	---	0.00	---	1,289.62	---	---
W-01D	3/21/2005	1,292.67	1.31	---	0.00	---	1,291.36	---	---
W-01D	5/17/2005	1,292.67	2.42	---	0.00	---	1,290.25	---	---
W-01D	6/9/2005	1,292.67	1.32	---	0.00	---	1,291.35	---	---
W-01D	6/14/2005	1,292.67	0.2	---	0.00	---	1,292.47	---	---
W-01D	8/2/2005	1,292.67	4.63	---	0.00	---	1,288.04	---	---
W-01D	12/4/2006	1,292.67	NM	---	---	---	---	---	---
W-01D	12/8/2006	1,292.67	11.1	---	0.00	---	1,281.57	---	---
W-01D	12/13/2006	1,292.67	11	---	0.00	---	1,281.67	---	---
W-01D	12/14/2006	1,292.67	10.95	---	0.00	---	1,281.72	---	---
W-01D	12/21/2006	1,292.67	10.92	---	0.00	---	1,281.75	---	---
W-01D	12/26/2006	1,292.67	10.54	---	0.00	---	1,282.13	---	---
W-01D	1/4/2007	1,292.67	10.1	---	0.00	---	1,282.57	---	---
W-01D	1/10/2007	1,292.67	10.08	---	0.00	---	1,282.59	---	---
W-01D	1/18/2007	1,292.67	10.42	---	0.00	---	1,282.25	---	---
W-01D	1/25/2007	1,292.67	10.34	---	0.00	---	1,282.33	---	---
W-01D	2/21/2007	1,292.67	9.3	---	0.00	---	1,283.37	---	---
W-01D	3/13/2007	1,292.67	8.72	---	0.00	---	1,283.95	---	---
W-01D	4/29/2007	1,292.67	5.17	---	0.00	---	1,287.50	---	---
W-01D	5/21/2007	1,292.67	4.18	---	0.00	---	1,288.49	---	---
W-01D	6/22/20007	1,292.67	5.39	---	0.00	---	1,287.28	---	---
W-01D	7/18/2007	1,292.67	3.65	---	0.00	---	1,289.02	---	---
W-01D	8/17/2007	1,292.67	5.84	---	0.00	---	1,286.83	---	---
W-01D	9/14/2007	1,292.67	8.07	---	0.00	---	1,284.60	---	---
W-01D	10/25/2007	1,292.67	7.09	---	0.00	---	1,285.58	---	---
W-01D	11/15/2007	1,292.67	7.15	---	0.00	---	1,285.52	---	---
W-01D	12/19/2007	1,292.67	6.49	---	0.00	---	1,286.18	---	---
W-01D	1/23/2008	1,292.67	5.89	---	0.00	---	1,286.78	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
W-01D	2/14/2008	1,292.67	5.21	---	0.00	---	1,287.46	---	---
W-01D	2/28/2008	1,292.67	3.85	---	0.00	---	1,288.82	---	---
W-01D	3/25/2008	1,292.67	2.74	---	0.00	---	1,289.93	---	---
W-01D	4/22/2008	1,292.67	2.91	---	0.00	---	1,289.76	---	---
W-01D	5/15/2008	1,292.67	2.33	---	0.00	---	1,290.34	---	---
W-01D	6/28/2008	1,292.67	2.07	---	0.00	---	1,290.60	---	---
W-01D	7/22/2008	1,292.67	4.14	---	0.00	---	1,288.53	---	---
W-01D	8/27/2008	1,292.67	7.26	---	0.00	---	1,285.41	---	---
W-01D	9/25/2008	1,292.67	6.43	---	0.00	---	1,286.24	---	---
W-01D	10/23/2008	1,292.67	5.31	---	0.00	---	1,287.36	---	---
W-01D	11/21/2008	1,292.67	5.83	---	0.00	---	1,286.84	---	---
W-01D	12/30/2008	1,292.67	6.28	---	0.00	---	1,286.39	---	---
W-01D	2/12/2009	1,292.67	17.17	---	0.00	---	1,275.50	---	---
W-01S	1/6/2004	1,290.15	13.15	---	0.00	---	1,277.00	---	---
W-01S	4/6/2004	1,290.15	12.45	---	0.00	---	1,277.70	---	---
W-01S	7/13/2004	1,290.15	12.21	---	0.00	---	1,277.94	---	---
W-01S	11/15/2004	1,290.15	13.11	---	0.00	---	1,277.04	---	---
W-01S	3/21/2005	1,290.15	12.72	---	0.00	---	1,277.43	---	---
W-01S	5/17/2005	1,290.15	13.06	---	0.00	---	1,277.09	---	---
W-01S	6/9/2005	1,290.15	12.33	---	0.00	---	1,277.82	---	---
W-01S	6/14/2005	1,290.15	10.32	---	0.00	---	1,279.83	---	---
W-01S	8/2/2005	1,290.15	13.75	---	0.00	---	1,276.40	---	---
W-01S	12/4/2006	1,290.15	13.85	---	0.00	---	1,276.30	---	---
W-01S	12/8/2006	1,290.15	15.25	---	0.00	---	1,274.90	---	---
W-01S	12/13/2006	1,290.15	15.74	---	0.00	---	1,274.41	---	---
W-01S	12/14/2006	1,290.15	15.75	---	0.00	---	1,274.40	---	---
W-01S	12/21/2006	1,290.15	15.93	---	0.00	---	1,274.22	---	---
W-01S	12/26/2006	1,290.15	16.01	---	0.00	---	1,274.14	---	---
W-01S	1/4/2007	1,290.15	15.98	---	0.00	---	1,274.17	---	---
W-01S	1/10/2007	1,290.15	15.98	---	0.00	---	1,274.17	---	---
W-01S	1/18/2007	1,290.15	15.98	---	0.00	---	1,274.17	---	---
W-01S	1/25/2007	1,290.15	15.96	---	0.00	---	1,274.19	---	---
W-01S	2/21/2007	1,290.15	14.23	---	0.00	---	1,275.92	---	---
W-01S	3/13/2007	1,290.15	15.55	---	0.00	---	1,274.60	---	---
W-01S	4/29/2007	1,290.15	16.21	---	0.00	---	1,273.94	---	---
W-01S	5/21/2007	1,290.15	14.98	---	0.00	---	1,275.17	---	---
W-01S	6/22/20007	1,290.15	15.36	---	0.00	---	1,274.79	---	---
W-01S	7/18/2007	1,290.15	15.26	---	0.00	---	1,274.89	---	---
W-01S	8/17/2007	1,290.15	16.07	---	0.00	---	1,274.08	---	---
W-01S	9/14/2007	1,290.15	16.45	---	0.00	---	1,273.70	---	---
W-01S	10/25/2007	1,290.15	15.95	---	0.00	---	1,274.20	---	---
W-01S	11/15/2007	1,290.15	16.04	---	0.00	---	1,274.11	---	---
W-01S	12/19/2007	1,290.15	15.19	---	0.00	---	1,274.96	---	---
W-01S	1/23/2008	1,290.15	15.41	---	0.00	---	1,274.74	---	---
W-01S	2/14/2008	1,290.15	14.94	---	0.00	---	1,275.21	---	---
W-01S	2/28/2008	1,290.15	14.34	---	0.00	---	1,275.81	---	---
W-01S	3/25/2008	1,290.15	14.19	---	0.00	---	1,275.96	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
W-01S	4/22/2008	1,290.15	14.68	---	0.00	---	1,275.47	---	---
W-01S	5/15/2008	1,290.15	13.83	---	0.00	---	1,276.32	---	---
W-01S	6/28/2008	1,290.15	9.42	---	0.00	---	1,280.73	---	---
W-01S	7/22/2008	1,290.15	15.27	---	0.00	---	1,274.88	---	---
W-01S	8/27/2008	1,290.15	16.76	---	0.00	---	1,273.39	---	---
W-01S	9/25/2008	1,290.15	14.95	---	0.00	---	1,275.20	---	---
W-01S	10/23/2008	1,290.15	14.76	---	0.00	---	1,275.39	---	---
W-01S	11/21/2008	1,290.15	15.23	---	0.00	---	1,274.92	---	---
W-01S	12/30/2008	1,290.15	15.09	---	0.00	---	1,275.06	---	---
W-01S	2/10/2009	1,290.15	15.59	---	0.00	---	1,274.56	---	---
W-03	1/6/2004	1,305.68	14.33	---	0.00	---	1,291.35	---	---
W-03	4/6/2004	1,305.68	13.1	---	0.00	---	1,292.58	---	---
W-03	7/13/2004	1,305.68	12.47	---	0.00	---	1,293.21	---	---
W-03	11/15/2004	1,305.68	13.32	---	0.00	---	1,292.36	---	---
W-03	3/21/2005	1,305.68	13.63	---	0.00	---	1,292.05	---	---
W-03	5/17/2005	1,305.68	13.86	---	0.00	---	1,291.82	---	---
W-03	6/14/2005	1,305.68	11.54	---	0.00	---	1,294.14	---	---
W-03	8/2/2005	1,305.68	13.99	---	0.00	---	1,291.69	---	---
W-03	12/4/2006	1,305.68	NM	---	---	---	---	---	---
W-03	12/8/2006	1,305.68	NM	---	---	---	---	---	---
W-03	12/13/2006	1,305.68	16.1	---	0.00	---	1,289.58	---	---
W-03	12/14/2006	1,305.68	16.07	---	0.00	---	1,289.61	---	---
W-03	12/21/2006	1,305.68	15.98	---	0.00	---	1,289.70	---	---
W-03	12/26/2006	1,305.68	16.05	---	0.00	---	1,289.63	---	---
W-03	1/4/2007	1,305.68	15.92	---	0.00	---	1,289.76	---	---
W-03	1/10/2007	1,305.68	15.99	---	0.00	---	1,289.69	---	---
W-03	1/18/2007	1,305.68	16.18	---	0.00	---	1,289.50	---	---
W-03	1/25/2007	1,305.68	16.19	---	0.00	---	1,289.49	---	---
W-03	2/21/2007	1,305.68	15.75	---	0.00	---	1,289.93	---	---
W-03	3/13/2007	1,305.68	15.48	---	0.00	---	1,290.20	---	---
W-03	4/29/2007	1,305.68	12.01	---	0.00	---	1,293.67	---	---
W-03	5/21/2007	1,305.68	12.08	---	0.00	---	1,293.60	---	---
W-03	6/22/20007	1,305.68	12.71	---	0.00	---	1,292.97	---	---
W-03	7/18/2007	1,305.68	12.45	---	0.00	---	1,293.23	---	---
W-03	8/17/2007	1,305.68	13.52	---	0.00	---	1,292.16	---	---
W-03	9/14/2007	1,305.68	14.29	---	0.00	---	1,291.39	---	---
W-03	10/25/2007	1,305.68	13.18	---	0.00	---	1,292.50	---	---
W-03	11/15/2007	1,305.68	13.65	---	0.00	---	1,292.03	---	---
W-03	12/19/2007	1,305.68	13.28	---	0.00	---	1,292.40	---	---
W-03	1/23/2008	1,305.68	13.35	---	0.00	---	1,292.33	---	---
W-03	2/14/2008	1,305.68	12.82	---	0.00	---	1,292.86	---	---
W-03	2/28/2008	1,305.68	12.04	---	0.00	---	1,293.64	---	---
W-03	3/25/2008	1,305.68	11.83	---	0.00	---	1,293.85	---	---
W-03	4/22/2008	1,305.68	12.28	---	0.00	---	1,293.40	---	---
W-03	5/15/2008	1,305.68	11.74	---	0.00	---	1,293.94	---	---
W-03	6/28/2008	1,305.68	10.72	---	0.00	---	1,294.96	---	---
W-03	7/22/2008	1,305.68	12.12	---	0.00	---	1,293.56	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
W-03	8/27/2008	1,305.68	12.19	---	0.00	---	1,293.49	---	---
W-03	9/25/2008	1,305.68	11.31	---	0.00	---	1,294.37	---	---
W-03	10/23/2008	1,305.68	10.63	---	0.00	---	1,295.05	---	---
W-03	11/21/2008	1,305.68	11.24	---	0.00	---	1,294.44	---	---
W-03	12/30/2008	1,305.68	11.55	---	0.00	---	1,294.13	---	---
W-03	2/10/2009	1,305.68	12.27	---	0.00	---	1,293.41	---	---
W-08	1/6/2004	1,319.90	17.08	---	0.00	---	1,302.82	---	---
W-08	4/6/2004	1,319.90	14.21	---	0.00	---	1,305.69	---	---
W-08	7/13/2004	1,319.90	14.77	---	0.00	---	1,305.13	---	---
W-08	11/15/2004	1,319.90	16.48	---	0.00	---	1,303.42	---	---
W-08	3/21/2005	1,319.90	16.15	---	0.00	---	1,303.75	---	---
W-08	5/17/2005	1,319.90	16.41	---	0.00	---	1,303.49	---	---
W-08	6/14/2005	1,319.90	8.87	---	0.00	---	1,311.03	---	---
W-08	8/2/2005	1,319.90	16.65	---	0.00	---	1,303.25	---	---
W-08	2/14/2008	1,319.90	15.65	---	0.00	---	1,304.25	---	---
W-08	2/10/2009	1,319.90	16.82	---	0.00	---	1,303.08	---	---
W-15D	1/6/2004	1,324.78	29.57	---	0.00	---	1,295.21	---	---
W-15D	4/6/2004	1,324.78	25.95	---	0.00	---	1,298.83	---	---
W-15D	7/13/2004	1,324.78	25.99	---	0.00	---	1,298.79	---	---
W-15D	11/15/2004	1,324.78	28.99	---	0.00	---	1,295.79	---	---
W-15D	3/21/2005	1,324.78	27.06	---	0.00	---	1,297.72	---	---
W-15D	5/17/2005	1,324.78	28.3	---	0.00	---	1,296.48	---	---
W-15D	6/14/2005	1,324.78	24.13	---	0.00	---	1,300.65	---	---
W-15D	8/2/2005	1,324.78	29.04	---	0.00	---	1,295.74	---	---
W-15D	2/14/2008	1,324.78	28.39	---	0.00	---	1,296.39	---	---
W-15D	2/10/2009	1,324.78	28.44	---	0.00	---	1,296.34	---	---
W-15S	1/6/2004	1,323.81	18.09	---	0.00	---	1,305.72	---	---
W-15S	4/6/2004	1,323.81	15.3	---	0.00	---	1,308.51	---	---
W-15S	7/13/2004	1,323.81	14.98	---	0.00	---	1,308.83	---	---
W-15S	11/15/2004	1,323.81	18.04	---	0.00	---	1,305.77	---	---
W-15S	3/21/2005	1,323.81	16.86	---	0.00	---	1,306.95	---	---
W-15S	5/17/2005	1,323.81	17.65	---	0.00	---	1,306.16	---	---
W-15S	6/14/2005	1,323.81	12.9	---	0.00	---	1,310.91	---	---
W-15S	8/2/2005	1,323.81	17.85	---	0.00	---	1,305.96	---	---
W-15S	2/14/2008	1,323.81	17.85	---	0.00	---	1,305.96	---	---
W-15S	2/10/2009	1,323.81	17.95	---	0.00	---	1,305.86	---	---
W-16S	1/6/2004	1,337.41	15.29	---	0.00	---	1,322.12	---	---
W-16S	4/6/2004	1,337.41	4.45	---	0.00	---	1,332.96	---	---
W-16S	7/13/2004	1,337.41	5.43	---	0.00	---	1,331.98	---	---
W-16S	11/15/2004	1,337.41	11.84	---	0.00	---	1,325.57	---	---
W-16S	3/21/2005	1,337.41	8.83	---	0.00	---	1,328.58	---	---
W-16S	5/17/2005	1,337.41	15.25	---	0.00	---	1,322.16	---	---
W-16S	6/14/2005	1,337.41	2.48	---	0.00	---	1,334.93	---	---
W-16S	8/2/2005	1,337.41	15.72	---	0.00	---	1,321.69	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
W-16S	2/14/2008	1,337.41	14.55	---	0.00	---	1,322.86	---	---
W-16S	2/10/2009	1,337.41	14.63	---	0.00	---	1,322.78	---	---
W-22	1/6/2004	1,293.94	17.71	---	0.00	---	1,276.23	---	---
W-22	4/6/2004	1,293.94	17.11	---	0.00	---	1,276.83	---	---
W-22	7/13/2004	1,293.94	16.31	---	0.00	---	1,277.63	---	---
W-22	11/15/2004	1,293.94	17.53	---	0.00	---	1,276.41	---	---
W-22	3/21/2005	1,293.94	17.37	---	0.00	---	1,276.57	---	---
W-22	5/17/2005	1,293.94	17.23	---	0.00	---	1,276.71	---	---
W-22	6/9/2005	1,293.94	16.65	---	0.00	---	1,277.29	---	---
W-22	6/14/2005	1,293.94	14.35	---	0.00	---	1,279.59	---	---
W-22	8/2/2005	1,293.94	17.41	---	0.00	---	1,276.53	---	---
W-22	12/4/2006	1,293.94	17.21	---	0.00	---	1,276.73	---	---
W-22	12/8/2006	1,293.94	18.42	---	0.00	---	1,275.52	---	---
W-22	12/13/2006	1,293.94	18.45	---	0.00	---	1,275.49	---	---
W-22	12/14/2006	1,293.94	18.44	---	0.00	---	1,275.50	---	---
W-22	12/21/2006	1,293.94	18.43	---	0.00	---	1,275.51	---	---
W-22	12/26/2006	1,293.94	18.4	---	0.00	---	1,275.54	---	---
W-22	1/4/2007	1,293.94	18.53	---	0.00	---	1,275.41	---	---
W-22	1/10/2007	1,293.94	18.31	---	0.00	---	1,275.63	---	---
W-22	1/18/2007	1,293.94	18.33	---	0.00	---	1,275.61	---	---
W-22	1/25/2007	1,293.94	18.33	---	0.00	---	1,275.61	---	---
W-22	2/21/2007	1,293.94	18.47	---	0.00	---	1,275.47	---	---
W-22	3/13/2007	1,293.94	18.43	---	0.00	---	1,275.51	---	---
W-22	4/29/2007	1,293.94	18.2	---	0.00	---	1,275.74	---	---
W-22	5/21/2007	1,293.94	18.03	---	0.00	---	1,275.91	---	---
W-22	6/22/20007	1,293.94	18.17	---	0.00	---	1,275.77	---	---
W-22	7/18/2007	1,293.94	17.7	---	0.00	---	1,276.24	---	---
W-22	8/17/2007	1,293.94	18.22	---	0.00	---	1,275.72	---	---
W-22	9/14/2007	1,293.94	18.26	---	0.00	---	1,275.68	---	---
W-22	10/25/2007	1,293.94	18.85	---	0.00	---	1,275.09	---	---
W-22	11/15/2007	1,293.94	18.11	---	0.00	---	1,275.83	---	---
W-22	12/19/2007	1,293.94	17.91	---	0.00	---	1,276.03	---	---
W-22	1/23/2008	1,293.94	18.11	---	0.00	---	1,275.83	---	---
W-22	2/14/2008	1,293.94	17.84	---	0.00	---	1,276.10	---	---
W-22	2/28/2008	1,293.94	17.73	---	0.00	---	1,276.21	---	---
W-22	3/25/2008	1,293.94	17.42	---	0.00	---	1,276.52	---	---
W-22	4/22/2008	1,293.94	17.72	---	0.00	---	1,276.22	---	---
W-22	5/15/2008	1,293.94	17.29	---	0.00	---	1,276.65	---	---
W-22	6/28/2008	1,293.94	17.26	---	0.00	---	1,276.68	---	---
W-22	7/22/2008	1,293.94	17.84	---	0.00	---	1,276.10	---	---
W-22	8/27/2008	1,293.94	17.95	---	0.00	---	1,275.99	---	---
W-22	9/25/2008	1,293.94	17.35	---	0.00	---	1,276.59	---	---
W-22	10/23/2008	1,293.94	17.73	---	0.00	---	1,276.21	---	---
W-22	11/21/2008	1,293.94	18.05	---	0.00	---	1,275.89	---	---
W-22	12/30/2008	1,293.94	17.7	---	0.00	---	1,276.24	---	---
W-22	2/10/2009	1,293.94	18.11	---	0.00	---	1,275.83	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
W-23	1/6/2004	1,304.88	9.48	---	0.00	---	1,295.40	---	---
W-23	4/6/2004	1,304.88	7.46	---	0.00	---	1,297.42	---	---
W-23	7/13/2004	1,304.88	6.38	---	0.00	---	1,298.50	---	---
W-23	11/15/2004	1,304.88	7.74	---	0.00	---	1,297.14	---	---
W-23	3/21/2005	1,304.88	8.11	---	0.00	---	1,296.77	---	---
W-23	5/17/2005	1,304.88	8.59	---	0.00	---	1,296.29	---	---
W-23	6/14/2005	1,304.88	5.1	---	0.00	---	1,299.78	---	---
W-23	8/2/2005	1,304.88	9	---	0.00	---	1,295.88	---	---
W-23	2/14/2008	1,304.88	7.54	---	0.00	---	1,297.34	---	---
W-23	2/10/2009	1,304.88	9.13	---	0.00	---	1,295.75	---	---
W-24	1/6/2004	1,306.35	9.85	---	0.00	---	1,296.50	---	---
W-24	4/6/2004	1,306.35	7.28	---	0.00	---	1,299.07	---	---
W-24	7/13/2004	1,306.35	6.09	---	0.00	---	1,300.26	---	---
W-24	11/15/2004	1,306.35	7.57	---	0.00	---	1,298.78	---	---
W-24	3/21/2005	1,306.35	8.16	---	0.00	---	1,298.19	---	---
W-24	5/17/2005	1,306.35	8.4	---	0.00	---	1,297.95	---	---
W-24	6/14/2005	1,306.35	5.28	---	0.00	---	1,301.07	---	---
W-24	8/2/2005	1,306.35	8.78	---	0.00	---	1,297.57	---	---
W-24	2/14/2008	1,306.35	7.17	---	0.00	---	1,299.18	---	---
W-24	2/12/2008	1,306.35	9.11	---	0.00	---	1,297.24	---	---
W-26	1/6/2004	1,298.18	4.6	---	0.00	---	1,293.58	---	---
W-26	4/6/2004	1,298.18	4.33	---	0.00	---	1,293.85	---	---
W-26	7/13/2004	1,298.18	4.71	---	0.00	---	1,293.47	---	---
W-26	11/15/2004	1,298.18	4.82	---	0.00	---	1,293.36	---	---
W-26	3/21/2005	1,298.18	4.42	---	0.00	---	1,293.76	---	---
W-26	5/17/2005	1,298.18	5.53	---	0.00	---	1,292.65	---	---
W-26	6/14/2005	1,298.18	3.44	---	0.00	---	1,294.74	---	---
W-26	8/2/2005	1,298.18	8.1	---	0.00	---	1,290.08	---	---
W-26	2/14/2008	1,298.18	4.73	---	0.00	---	1,293.45	---	---
W-26	2/10/2009	1,298.18	4.83	---	0.00	---	1,293.35	---	---
W-29D	1/6/2004	1,340.93	24.8	---	0.00	---	1,316.13	---	---
W-29D	4/6/2004	1,340.93	16.26	---	0.00	---	1,324.67	---	---
W-29D	7/13/2004	1,340.93	17.41	---	0.00	---	1,323.52	---	---
W-29D	11/15/2004	1,340.93	25.21	---	0.00	---	1,315.72	---	---
W-29D	3/21/2005	1,340.93	20.13	---	0.00	---	1,320.80	---	---
W-29D	5/17/2005	1,340.93	22.86	---	0.00	---	1,318.07	---	---
W-29D	6/9/2005	1,340.93	12.44	---	0.00	---	1,328.49	---	---
W-29D	6/14/2005	1,340.93	12.93	---	0.00	---	1,328.00	---	---
W-29D	8/2/2005	1,340.93	24.2	---	0.00	---	1,316.73	---	---
W-29D	2/14/2008	1,340.93	19.61	---	0.00	---	1,321.32	---	---
W-29D	2/12/2009	1,340.93	23.89	---	0.00	---	1,317.04	---	---
W-29S	1/6/2004	1,341.21	19.41	---	0.00	---	1,321.80	---	---
W-29S	4/6/2004	1,341.21	14.71	---	0.00	---	1,326.50	---	---
W-29S	7/13/2004	1,341.21	14.92	---	0.00	---	1,326.29	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
W-29S	11/15/2004	1,341.21	21.91	---	0.00	---	1,319.30	---	---
W-29S	3/21/2005	1,341.21	15.71	---	0.00	---	1,325.50	---	---
W-29S	5/17/2005	1,341.21	16.18	---	0.00	---	1,325.03	---	---
W-29S	6/9/2005	1,341.21	12.52	---	0.00	---	1,328.69	---	---
W-29S	6/14/2005	1,341.21	12.66	---	0.00	---	1,328.55	---	---
W-29S	8/2/2005	1,341.21	17.35	---	0.00	---	1,323.86	---	---
W-29S	2/14/2008	1,341.21	14.91	---	0.00	---	1,326.30	---	---
W-29S	2/10/2009	1,341.21	15.95	---	0.00	---	1,325.26	---	---
OW-01	4/7/2005	1324.08	7.09	---	0.00	---	1,316.99	---	---
OW-01	6/14/2005	1324.08	3.59	---	0.00	---	1,320.49	---	---
OW-01	8/2/2005	1324.08	11.11	---	0.00	---	1,312.97	---	---
OW-01	2/14/2008	1324.08	8.95	---	0.00	---	1,315.13	---	---
OW-01	2/10/2009	1324.08	11.42	---	0.00	---	1,312.66	---	---
OW-02	4/7/2005	1320.33	7.27	---	0.00	---	1,313.06	---	---
OW-02	6/14/2005	1320.33	6.61	---	0.00	---	1,313.72	---	---
OW-02	8/2/2005	1320.33	8.64	---	0.00	---	1,311.69	---	---
OW-02	2/14/2008	1320.33	6.96	---	0.00	---	1,313.37	---	---
OW-02	2/10/2009	1320.33	7.85	---	0.00	---	1,312.48	---	---
OW-03	6/2/2005	1294.00	14.66	---	0.00	---	1,279.34	---	---
OW-03	6/9/2005	1294.00	14.09	---	0.00	---	1,279.91	---	---
OW-03	6/14/2005	1294.00	12.38	---	0.00	---	1,281.62	---	---
OW-03	8/2/2005	1294.00	14.37	---	0.00	---	1,279.63	---	---
OW-03	12/4/2006	1294.00	15.48	---	0.00	---	1,278.52	---	---
OW-03	12/8/2006	1294.00	15.62	---	0.00	---	1,278.38	---	---
OW-03	12/13/2006	1294.00	15.6	---	0.00	---	1,278.40	---	---
OW-03	12/14/2006	1294.00	15.56	---	0.00	---	1,278.44	---	---
OW-03	12/21/2006	1294.00	15.62	---	0.00	---	1,278.38	---	---
OW-03	12/26/2006	1294.00	15.83	---	0.00	---	1,278.17	---	---
OW-03	1/4/2007	1294.00	15.75	---	0.00	---	1,278.25	---	---
OW-03	1/10/2007	1294.00	15.97	---	0.00	---	1,278.03	---	---
OW-03	1/18/2007	1294.00	15.99	---	0.00	---	1,278.01	---	---
OW-03	1/25/2007	1294.00	16.07	---	0.00	---	1,277.93	---	---
OW-03	2/21/2007	1294.00	16.18	---	0.00	---	1,277.82	---	---
OW-03	3/13/2007	1294.00	16.33	---	0.00	---	1,277.67	---	---
OW-03	4/29/2007	1294.00	15.53	---	0.00	---	1,278.47	---	---
OW-03	5/21/2007	1294.00	14.73	---	0.00	---	1,279.27	---	---
OW-03	6/22/20007	1294.00	14.65	---	0.00	---	1,279.35	---	---
OW-03	7/18/2007	1294.00	13.76	---	0.00	---	1,280.24	---	---
OW-03	8/17/2007	1294.00	14.58	---	0.00	---	1,279.42	---	---
OW-03	9/14/2007	1294.00	14.99	---	0.00	---	1,279.01	---	---
OW-03	10/25/2007	1294.00	14.61	---	0.00	---	1,279.39	---	---
OW-03	11/15/2007	1294.00	14.91	---	0.00	---	1,279.09	---	---
OW-03	12/19/2007	1294.00	14.81	---	0.00	---	1,279.19	---	---
OW-03	1/23/2008	1294.00	15.34	---	0.00	---	1,278.66	---	---
OW-03	2/14/2008	1294.00	15.25	---	0.00	---	1,278.75	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-03	2/28/2008	1294.00	14.86	---	0.00	---	1,279.14	---	---
OW-03	3/25/2008	1294.00	14.89	---	0.00	---	1,279.11	---	---
OW-03	4/22/2008	1294.00	15.14	---	0.00	---	1,278.86	---	---
OW-03	5/15/2008	1294.00	14.59	---	0.00	---	1,279.41	---	---
OW-03	6/28/2008	1294.00	13.51	---	0.00	---	1,280.49	---	---
OW-03	7/22/2008	1294.00	14.58	---	0.00	---	1,279.42	---	---
OW-03	8/27/2008	1294.00	15.08	---	0.00	---	1,278.92	---	---
OW-03	9/25/2008	1294.00	14.06	---	0.00	---	1,279.94	---	---
OW-03	10/23/2008	1294.00	14.22	---	0.00	---	1,279.78	---	---
OW-03	11/21/2008	1294.00	14.89	---	0.00	---	1,279.11	---	---
OW-03	12/30/2008	1294.00	15.13	---	0.00	---	1,278.87	---	---
OW-03	2/10/2009	1294.00	15.83	---	0.00	---	1,278.17	---	---
OW-04	6/2/2005	1290.45	10.81	---	0.00	---	1,279.64	---	---
OW-04	6/9/2005	1290.45	10.19	---	0.00	---	1,280.26	---	---
OW-04	6/14/2005	1290.45	8.34	---	0.00	---	1,282.11	---	---
OW-04	8/2/2005	1290.45	11.48	---	0.00	---	1,278.97	---	---
OW-04	12/4/2006	1290.45	13.6	---	0.00	---	1,276.85	---	---
OW-04	12/8/2006	1290.45	13.97	---	0.00	---	1,276.48	---	---
OW-04	12/13/2006	1290.45	14.04	---	0.00	---	1,276.41	---	---
OW-04	12/14/2006	1290.45	13.98	---	0.00	---	1,276.47	---	---
OW-04	12/21/2006	1290.45	14	---	0.00	---	1,276.45	---	---
OW-04	12/26/2006	1290.45	14.04	---	0.00	---	1,276.41	---	---
OW-04	1/4/2007	1290.45	13.92	---	0.00	---	1,276.53	---	---
OW-04	1/10/2007	1290.45	13.92	---	0.00	---	1,276.53	---	---
OW-04	1/18/2007	1290.45	14.05	---	0.00	---	1,276.40	---	---
OW-04	1/25/2007	1290.45	14.08	---	0.00	---	1,276.37	---	---
OW-04	2/21/2007	1290.45	14.18	---	0.00	---	1,276.27	---	---
OW-04	3/13/2007	1290.45	14.09	---	0.00	---	1,276.36	---	---
OW-04	4/29/2007	1290.45	13.72	---	0.00	---	1,276.73	---	---
OW-04	5/21/2007	1290.45	13.42	---	0.00	---	1,277.03	---	---
OW-04	6/22/20007	1290.45	12.58	---	0.00	---	1,277.87	---	---
OW-04	7/18/2007	1290.45	13.03	---	0.00	---	1,277.42	---	---
OW-04	8/17/2007	1290.45	13.61	---	0.00	---	1,276.84	---	---
OW-04	9/14/2007	1290.45	13.84	---	0.00	---	1,276.61	---	---
OW-04	10/25/2007	1290.45	13.59	---	0.00	---	1,276.86	---	---
OW-04	11/15/2007	1290.45	13.82	---	0.00	---	1,276.63	---	---
OW-04	12/19/2007	1290.45	13.68	---	0.00	---	1,276.77	---	---
OW-04	2/14/2008	1290.45	13.79	---	0.00	---	1,276.66	---	---
OW-04	1/23/2008	1290.45	13.81	---	0.00	---	1,276.64	---	---
OW-04	2/28/2008	1290.45	13.43	---	0.00	---	1,277.02	---	---
OW-04	3/25/2008	1290.45	13.54	---	0.00	---	1,276.91	---	---
OW-04	4/22/2008	1290.45	13.72	---	0.00	---	1,276.73	---	---
OW-04	5/15/2008	1290.45	13.43	---	0.00	---	1,277.02	---	---
OW-04	6/28/2008	1290.45	12.11	---	0.00	---	1,278.34	---	---
OW-04	7/22/2008	1290.45	13.66	---	0.00	---	1,276.79	---	---
OW-04	8/27/2008	1290.45	13.76	---	0.00	---	1,276.69	---	---
OW-04	9/25/2008	1290.45	13.45	---	0.00	---	1,277.00	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-04	10/23/2008	1290.45	13.43	---	0.00	---	1,277.02	---	---
OW-04	11/21/2008	1290.45	13.72	---	0.00	---	1,276.73	---	---
OW-04	12/30/2008	1290.45	13.64	---	0.00	---	1,276.81	---	---
OW-04	2/10/2009	1290.45	13.98	---	0.00	---	1,276.47	---	---
OW-05	6/9/2005	1290.46	21.67	---	0.00	---	1,268.79	---	---
OW-05	6/14/2005	1290.46	13.82	---	0.00	---	1,276.64	---	---
OW-05	8/2/2005	1290.46	11.77	---	0.00	---	1,278.69	---	---
OW-05	12/4/2006	1290.46	12.74	---	0.00	---	1,277.72	---	---
OW-05	12/8/2006	1290.46	13.2	---	0.00	---	1,277.26	---	---
OW-05	12/13/2006	1290.46	13.88	---	0.00	---	1,276.58	---	---
OW-05	12/14/2006	1290.46	13.96	---	0.00	---	1,276.50	---	---
OW-05	12/21/2006	1290.46	14.45	---	0.00	---	1,276.01	---	---
OW-05	12/26/2006	1290.46	14.66	---	0.00	---	1,275.80	---	---
OW-05	1/4/2007	1290.46	14.77	---	0.00	---	1,275.69	---	---
OW-05	1/10/2007	1290.46	14.85	---	0.00	---	1,275.61	---	---
OW-05	1/18/2007	1290.46	14.98	---	0.00	---	1,275.48	---	---
OW-05	1/25/2007	1290.46	15.02	---	0.00	---	1,275.44	---	---
OW-05	2/21/2007	1290.46	14.95	---	0.00	---	1,275.51	---	---
OW-05	3/13/2007	1290.46	14.89	---	0.00	---	1,275.57	---	---
OW-05	4/29/2007	1290.46	13.87	---	0.00	---	1,276.59	---	---
OW-05	5/21/2007	1290.46	12.95	---	0.00	---	1,277.51	---	---
OW-05	6/22/20007	1290.46	18.27	---	0.00	---	1,272.19	---	---
OW-05	7/18/2007	1290.46	12.29	---	0.00	---	1,278.17	---	---
OW-05	8/17/2007	1290.46	13.3	---	0.00	---	1,277.16	---	---
OW-05	9/14/2007	1290.46	13.85	---	0.00	---	1,276.61	---	---
OW-05	10/25/2007	1290.46	13.87	---	0.00	---	1,276.59	---	---
OW-05	11/15/2007	1290.46	13.91	---	0.00	---	1,276.55	---	---
OW-05	12/19/2007	1290.46	14.12	---	0.00	---	1,276.34	---	---
OW-05	1/23/2008	1290.46	14.42	---	0.00	---	1,276.04	---	---
OW-05	2/14/2008	1290.46	14.38	---	0.00	---	1,276.08	---	---
OW-05	2/28/2008	1290.46	14.61	---	0.00	---	1,275.85	---	---
OW-05	3/25/2008	1290.46	13.32	---	0.00	---	1,277.14	---	---
OW-05	4/22/2008	1290.46	13.31	---	0.00	---	1,277.15	---	---
OW-05	5/15/2008	1290.46	12.53	---	0.00	---	1,277.93	---	---
OW-05	6/28/2008	1290.46	11.09	---	0.00	---	1,279.37	---	---
OW-05	7/22/2008	1290.46	12.54	---	0.00	---	1,277.92	---	---
OW-05	8/27/2008	1290.46	13.36	---	0.00	---	1,277.10	---	---
OW-05	9/25/2008	1290.46	12.16	---	0.00	---	1,278.30	---	---
OW-05	10/23/2008	1290.46	13.43	---	0.00	---	1,277.03	---	---
OW-05	11/21/2008	1290.46	13.77	---	0.00	---	1,276.69	---	---
OW-05	12/30/2008	1290.46	14.14	---	0.00	---	1,276.32	---	---
OW-05	2/10/2009	1290.46	14.61	---	0.00	---	1,275.85	---	---
OW-06	6/2/2005	1302.26	8.15	---	0.00	---	1,294.11	---	---
OW-06	6/9/2005	1302.26	7.31	---	0.00	---	1,294.95	---	---
OW-06	6/14/2005	1302.26	5.55	---	0.00	---	1,296.71	---	---
OW-06	8/2/2005	1302.26	10.24	---	0.00	---	1,292.02	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-06	2/14/2008	1302.26	9.48	---	0.00	---	1,292.78	---	---
OW-06	2/10/2009	1302.26	9.11	---	0.00	---	1,293.15	---	---
OW-07	4/8/2005	1327.50	2.99	---	0.00	---	1,324.51	---	---
OW-07	6/14/2005	1327.50	1.88	---	0.00	---	1,325.62	---	---
OW-07	8/2/2005	1327.50	5.68	---	0.00	---	1,321.82	---	---
OW-07	2/14/2008	1327.50	6.36	---	0.00	---	1,321.14	---	---
OW-07	2/10/2009	1327.50	7.49	---	0.00	---	1,320.01	---	---
OW-08	4/7/2005	1314.98	8	---	0.00	---	1,306.98	---	---
OW-08	6/14/2005	1314.98	6.95	---	0.00	---	1,308.03	---	---
OW-08	8/2/2005	1314.98	10.02	---	0.00	---	1,304.96	---	---
OW-08	2/14/2008	1314.98	9.9	---	0.00	---	1,305.08	---	---
OW-08	2/10/2009	1314.98	9.52	---	0.00	---	1,305.46	---	---
OW-09	4/7/2005	1312.80	7.14	---	0.00	---	1,305.66	---	---
OW-09	6/14/2005	1312.80	6.29	---	0.00	---	1,306.51	---	---
OW-09	8/2/2005	1312.80	9.62	---	0.00	---	1,303.18	---	---
OW-09	2/14/2008	1312.80	9.24	---	0.00	---	1,303.56	---	---
OW-09	2/10/2009	1312.80	8.15	---	0.00	---	1,304.65	---	---
OW-10	4/8/2005	1304.44	8.36	---	0.00	---	1,296.08	---	---
OW-10	6/14/2005	1304.44	6.44	---	0.00	---	1,298.00	---	---
OW-10	8/2/2005	1304.44	11.39	---	0.00	---	1,293.05	---	---
OW-10	2/14/2008	1304.44	10.57	---	0.00	---	1,293.87	---	---
OW-10	2/10/2009	1304.44	9.17	---	0.00	---	1,295.27	---	---
OW-11	4/8/2005	1305.34	9.07	---	0.00	---	1,296.27	---	---
OW-11	6/14/2005	1305.34	9.48	---	0.00	---	1,295.86	---	---
OW-11	8/2/2005	1305.34	11.3	---	0.00	---	1,294.04	---	---
OW-11	2/14/2008	1305.34	11.54	---	0.00	---	1,293.80	---	---
OW-11	2/10/2009	1305.34	1.22	---	0.00	---	1,304.12	---	---
OW-12	4/8/2005	1300.51	7.79	---	0.00	---	1,292.72	---	---
OW-12	6/14/2005	1300.51	4.49	---	0.00	---	1,296.02	---	---
OW-12	8/2/2005	1300.51	10.84	10.55	0.29	10.61	1,289.67	1289.90	1289.96
OW-12	2/14/2008	1300.51	8.67	---	0.00	---	1,291.84	---	---
OW-12	2/10/2009	1300.51	9.68	9.66	0.02	9.66	1,290.83	1290.85	1290.85
OW-13	4/7/2005	1315.43	19.59	---	0.00	---	1,295.84	---	---
OW-13	6/14/2005	1315.43	19.57	---	0.00	---	1,295.86	---	---
OW-13	8/2/2005	1315.43	19.57	---	0.00	---	1,295.86	---	---
OW-13	2/14/2008	1315.43	21.03	21.01	0.02	21.01	1,294.40	1294.42	1294.42
OW-13	2/10/2009	1315.43	20.47	---	0.00	---	1,294.96	---	---
OW-14	4/7/2005	1310.26	12.29	---	0.00	---	1,297.97	---	---
OW-14	6/14/2005	1310.26	12.12	---	0.00	---	1,298.14	---	---
OW-14	8/2/2005	1310.26	13.8	---	0.00	---	1,296.46	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-14	8/12/2005	1310.26	17.22	---	0.00	---	1,293.04	---	---
OW-14	2/14/2008	1310.26	12.88	---	0.00	---	1,297.38	---	---
OW-14	2/10/2009	1310.26	13.6	---	0.00	---	1,296.66	---	---
OW-16	4/7/2005	1303.46	9.44	---	0.00	---	1,294.02	---	---
OW-16	6/14/2005	1303.46	8.19	---	0.00	---	1,295.27	---	---
OW-16	8/2/2005	1303.46	12.23	---	0.00	---	1,291.23	---	---
OW-16	2/14/2008	1303.46	11.28	---	0.00	---	1,292.18	---	---
OW-16	2/10/2009	1303.46	10.38	---	0.00	---	1,293.08	---	---
OW-18T	4/7/2005	1308.68	10.41	---	0.00	---	1,298.27	---	---
OW-18T	6/14/2005	1308.68	9.56	9.15	0.41	9.23	1,299.12	1299.45	1299.53
OW-18T	8/2/2005	1308.68	11.95	9.55	2.40	10.03	1,296.73	1298.65	1299.13
OW-18T	2/14/2008	1308.68	NM	---	---	---	---	---	---
OW-18T	2/10/2009					Well Destroyed			
OW-19T	4/7/2005	1317.50	11.48	---	0.00	---	1,306.02	---	---
OW-19T	6/14/2005	1317.50	10.76	---	0.00	---	1,306.74	---	---
OW-19T	8/2/2005	1317.50	10.92	---	0.00	---	1,306.58	---	---
OW-19T	2/14/2008	1317.50	Dry	---	---	---	---	---	---
OW-19T	2/10/2009	1317.50	11.58	---	0.00	---	1,305.92	---	---
OW-21	4/7/2005	1311.61	2.53	---	0.00	---	1,309.08	---	---
OW-21	6/14/2005	1311.61	1.68	---	0.00	---	1,309.93	---	---
OW-21	8/2/2005	1311.61	2.45	---	0.00	---	1,309.16	---	---
OW-21	2/14/2008	1311.61	2.8	---	0.00	---	1,308.81	---	---
OW-21	2/10/2009	1311.61	2.89	---	0.00	---	1,308.72	---	---
OW-22T	4/7/2005	1308.35	9.56	---	0.00	---	1,298.79	---	---
OW-22T	6/14/2005	1308.35	8.83	---	0.00	---	1,299.52	---	---
OW-22T	8/2/2005	1308.35	9.67	---	0.00	---	1,298.68	---	---
OW-22T	2/14/2008	1308.35	9.07	---	0.00	---	1,299.28	---	---
OW-22T	2/10/2009	1308.35	10.54	---	0.00	---	1,297.81	---	---
OW-23T	4/7/2005	1307.36	9.33	---	0.00	---	1,298.03	---	---
OW-23T	6/14/2005	1307.36	6.74	---	0.00	---	1,300.62	---	---
OW-23T	8/2/2005	1307.36	8.76	---	0.00	---	1,298.60	---	---
OW-23T	2/14/2008	1307.36	8.47	---	0.00	---	1,298.89	---	---
OW-23T	2/10/2009	1307.36	9.42	---	0.00	---	1,297.94	---	---
OW-24	4/7/2005	1304.85	8.28	---	0.00	---	1,296.57	---	---
OW-24	6/14/2005	1304.85	12.31	---	0.00	---	1,292.54	---	---
OW-24	8/2/2005	1304.85	8.63	---	0.00	---	1,296.22	---	---
OW-24	2/14/2008	1304.85	8.35	8.27	0.08	8.29	1,296.50	1296.56	1296.58
OW-24	2/10/2009	1304.85	8.73	8.15	0.58	8.27	1,296.12	1296.58	1296.7
OW-25	4/7/2005	1303.18	8.26	---	0.00	---	1,294.92	---	---
OW-25	6/14/2005	1303.18	6.65	---	0.00	---	1,296.53	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-25	8/2/2005	1303.18	8.88	8.65	0.23	8.70	1,294.30	1294.48	1294.53
OW-25	2/14/2008	1303.18	6.11	5.81	0.30	5.87	1,297.07	1297.31	1297.37
OW-25	2/10/2009	1303.18	7.21	6.98	0.23	7.03	1,295.97	1296.15	1296.2
OW-26	4/8/2005	1302.62	6.46	---	0.00	---	1,296.16	---	---
OW-26	6/14/2005	1302.62	4.69	---	0.00	---	1,297.93	---	---
OW-26	8/2/2005	1302.62	6.86	---	0.00	---	1,295.76	---	---
OW-26	2/14/2008	1302.62	6.56	---	0.00	---	1,296.06	---	---
OW-26	2/10/2009	1302.62	6.95	---	0.00	---	1,295.67	---	---
OW-27T	4/7/2005	1303.43	8.94	---	0.00	---	1,294.49	---	---
OW-27T	6/14/2005	1303.43	6.6	---	0.00	---	1,296.83	---	---
OW-27T	8/2/2005	1303.43	9.37	---	0.00	---	1,294.06	---	---
OW-27T	12/4/2006	1303.43	NM	---	---	---	---	---	---
OW-27T	12/8/2006	1303.43	NM	---	---	---	---	---	---
OW-27T	12/13/2006	1303.43	13.32	---	0.00	---	1,290.11	---	---
OW-27T	12/14/2006	1303.43	12.25	---	0.00	---	1,291.18	---	---
OW-27T	12/21/2006	1303.43	12.07	---	0.00	---	1,291.36	---	---
OW-27T	12/26/2006	1303.43	12.04	---	0.00	---	1,291.39	---	---
OW-27T	1/4/2007	1303.43	11.6	---	0.00	---	1,291.83	---	---
OW-27T	1/10/2007	1303.43	11.68	---	0.00	---	1,291.75	---	---
OW-27T	1/18/2007	1303.43	12.15	---	0.00	---	1,291.28	---	---
OW-27T	1/25/2007	1303.43	12.23	---	0.00	---	1,291.20	---	---
OW-27T	2/21/2007	1303.43	11.4	---	0.00	---	1,292.03	---	---
OW-27T	3/13/2007	1303.43	10.99	---	0.00	---	1,292.44	---	---
OW-27T	4/29/2007	1303.43	8.95	---	0.00	---	1,294.48	---	---
OW-27T	5/21/2007	1303.43	8.3	---	0.00	---	1,295.13	---	---
OW-27T	6/22/20007	1303.43	8.67	---	0.00	---	1,294.76	---	---
OW-27T	7/18/2007	1303.43	8.5	---	0.00	---	1,294.93	---	---
OW-27T	8/17/2007	1303.43	9.81	---	0.00	---	1,293.62	---	---
OW-27T	9/14/2007	1303.43	10.87	---	0.00	---	1,292.56	---	---
OW-27T	10/25/2007	1303.43	9.46	---	0.00	---	1,293.97	---	---
OW-27T	11/15/2007	1303.43	10.56	---	0.00	---	1,292.87	---	---
OW-27T	12/19/2007	1303.43	9.72	---	0.00	---	1,293.71	---	---
OW-27T	1/23/2008	1303.43	9.76	---	0.00	---	1,293.67	---	---
OW-27T	2/14/2008	1303.43	9.26	---	0.00	---	1,294.17	---	---
OW-27T	2/28/2008	1303.43	8.54	---	0.00	---	1,294.89	---	---
OW-27T	3/25/2008	1303.43	8.41	---	0.00	---	1,295.02	---	---
OW-27T	4/22/2008	1303.43	8.88	---	0.00	---	1,294.55	---	---
OW-27T	5/15/2008	1303.43	8.44	---	0.00	---	1,294.99	---	---
OW-27T	6/28/2008	1303.43	5.72	---	0.00	---	1,297.71	---	---
OW-27T	7/22/2008	1303.43	9.29	---	0.00	---	1,294.14	---	---
OW-27T	8/27/2008	1303.43	9.69	---	0.00	---	1,293.74	---	---
OW-27T	9/25/2008	1303.43	9.16	---	0.00	---	1,294.27	---	---
OW-27T	10/23/2008	1303.43	8.65	---	0.00	---	1,294.78	---	---
OW-27T	11/21/2008	1303.43	9.53	---	0.00	---	1,293.90	---	---
OW-27T	12/30/2008	1303.43	9.78	---	0.00	---	1,293.65	---	---
OW-27T	2/10/2009	1303.43	9.99	---	0.00	---	1,293.44	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-28T	4/7/2005	1301.57	9.71	---	0.00	---	1,291.86	---	---
OW-28T	6/14/2005	1301.57	8.46	---	0.00	---	1,293.11	---	---
OW-28T	8/2/2005	1301.57	10.85	---	0.00	---	1,290.72	---	---
OW-28T	12/4/2006	1301.57	NM	---	---	---	---	---	---
OW-28T	12/8/2006	1301.57	NM	---	---	---	---	---	---
OW-28T	12/13/2006	1301.57	12.32	---	0.00	---	1,289.25	---	---
OW-28T	12/14/2006	1301.57	12.21	---	0.00	---	1,289.36	---	---
OW-28T	12/21/2006	1301.57	12.03	---	0.00	---	1,289.54	---	---
OW-28T	12/26/2006	1301.57	11.98	---	0.00	---	1,289.59	---	---
OW-28T	1/4/2007	1301.57	11.32	---	0.00	---	1,290.25	---	---
OW-28T	1/10/2007	1301.57	11.4	---	0.00	---	1,290.17	---	---
OW-28T	1/18/2007	1301.57	11.97	---	0.00	---	1,289.60	---	---
OW-28T	1/25/2007	1301.57	12.01	---	0.00	---	1,289.56	---	---
OW-28T	2/21/2007	1301.57	10.78	---	0.00	---	1,290.79	---	---
OW-28T	3/13/2007	1301.57	10.63	---	0.00	---	1,290.94	---	---
OW-28T	4/29/2007	1301.57	9.32	---	0.00	---	1,292.25	---	---
OW-28T	5/21/2007	1301.57	8.82	---	0.00	---	1,292.75	---	---
OW-28T	6/22/20007	1301.57	9.07	---	0.00	---	1,292.50	---	---
OW-28T	7/18/2007	1301.57	9.31	---	0.00	---	1,292.26	---	---
OW-28T	8/17/2007	1301.57	10.46	---	0.00	---	1,291.11	---	---
OW-28T	9/14/2007	1301.57	11.52	---	0.00	---	1,290.05	---	---
OW-28T	10/25/2007	1301.57	9.58	---	0.00	---	1,291.99	---	---
OW-28T	11/15/2007	1301.57	10.64	---	0.00	---	1,290.93	---	---
OW-28T	12/19/2007	1301.57	9.79	---	0.00	---	1,291.78	---	---
OW-28T	1/23/2008	1301.57	9.97	---	0.00	---	1,291.60	---	---
OW-28T	2/14/2008	1301.57	9.56	---	0.00	---	1,292.01	---	---
OW-28T	2/28/2008	1301.57	9.12	---	0.00	---	1,292.45	---	---
OW-28T	3/25/2008	1301.57	9.15	---	0.00	---	1,292.42	---	---
OW-28T	4/22/2008	1301.57	9.41	---	0.00	---	1,292.16	---	---
OW-28T	5/15/2008	1301.57	9.01	---	0.00	---	1,292.56	---	---
OW-28T	6/28/2008	1301.57	8.41	---	0.00	---	1,293.16	---	---
OW-28T	7/22/2008	1301.57	9.93	---	0.00	---	1,291.64	---	---
OW-28T	8/27/2008	1301.57	7.13	---	0.00	---	1,294.44	---	---
OW-28T	9/25/2008	1301.57	9.62	---	0.00	---	1,291.95	---	---
OW-28T	10/23/2008	1301.57	5.97	---	0.00	---	1,295.60	---	---
OW-28T	11/21/2008	1301.57	9.68	---	0.00	---	1,291.89	---	---
OW-28T	12/30/2008	1301.57	9.8	---	0.00	---	1,291.77	---	---
OW-28T	2/10/2009	1301.57	9.99	---	0.00	---	1,291.58	---	---
OW-29	4/8/2005	1294.68	14.42	---	0.00	---	1,280.26	---	---
OW-29	6/14/2005	1294.68	13.11	---	0.00	---	1,281.57	---	---
OW-29	8/2/2005	1294.68	14.82	---	0.00	---	1,279.86	---	---
OW-29	12/4/2006	1294.68	17.25	---	0.00	---	1,277.43	---	---
OW-29	12/8/2006	1294.68	17.25	---	0.00	---	1,277.43	---	---
OW-29	12/13/2006	1294.68	17.14	---	0.00	---	1,277.54	---	---
OW-29	12/14/2006	1294.68	17.07	---	0.00	---	1,277.61	---	---
OW-29	12/21/2006	1294.68	17.14	---	0.00	---	1,277.54	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-29	12/26/2006	1294.68	17.38	---	0.00	---	1,277.30	---	---
OW-29	1/4/2007	1294.68	17.23	---	0.00	---	1,277.45	---	---
OW-29	1/10/2007	1294.68	17.38	---	0.00	---	1,277.30	---	---
OW-29	1/18/2007	1294.68	17.47	---	0.00	---	1,277.21	---	---
OW-29	1/25/2007	1294.68	17.5	---	0.00	---	1,277.18	---	---
OW-29	2/21/2007	1294.68	17.52	---	0.00	---	1,277.16	---	---
OW-29	3/13/2007	1294.68	17.6	---	0.00	---	1,277.08	---	---
OW-29	4/29/2007	1294.68	16.88	---	0.00	---	1,277.80	---	---
OW-29	5/21/2007	1294.68	15.91	---	0.00	---	1,278.77	---	---
OW-29	6/22/20007	1294.68	15.85	---	0.00	---	1,278.83	---	---
OW-29	7/18/2007	1294.68	16.72	---	0.00	---	1,277.96	---	---
OW-29	8/17/2007	1294.68	15.89	---	0.00	---	1,278.79	---	---
OW-29	9/14/2007	1294.68	17.02	---	0.00	---	1,277.66	---	---
OW-29	10/25/2007	1294.68	16.26	---	0.00	---	1,278.42	---	---
OW-29	11/15/2007	1294.68	16.78	---	0.00	---	1,277.90	---	---
OW-29	12/19/2007	1294.68	16.31	---	0.00	---	1,278.37	---	---
OW-29	1/23/2008	1294.68	16.48	---	0.00	---	1,278.20	---	---
OW-29	2/14/2008	1294.68	16.3	---	0.00	---	1,278.38	---	---
OW-29	2/28/2008	1294.68	16.01	---	0.00	---	1,278.67	---	---
OW-29	3/25/2008	1294.68	15.78	---	0.00	---	1,278.90	---	---
OW-29	4/22/2008	1294.68	15.96	---	0.00	---	1,278.72	---	---
OW-29	5/15/2008	1294.68	15.57	15.57	0.00	15.57	1,279.11	1279.11	1279.11
OW-29	6/28/2008	1294.68	14.56	---	0.00	---	1,280.12	---	---
OW-29	7/22/2008	1294.68	15.13	---	0.00	---	1,279.55	---	---
OW-29	8/27/2008	1294.68	15.25	---	0.00	---	1,279.43	---	---
OW-29	9/25/2008	1294.68	14.89	---	0.00	---	1,279.79	---	---
OW-29	10/23/2008	1294.68	14.98	---	0.00	---	1,279.70	---	---
OW-29	11/21/2008	1294.68	15.31	---	0.00	---	1,279.37	---	---
OW-29	12/30/2008	1294.68	15.63	---	0.00	---	1,279.05	---	---
OW-29	2/10/2009	1294.68	15.76	---	0.00	---	1,278.92	---	---
OW-30	4/7/2005	1293.19	13.42	---	0.00	---	1,279.77	---	---
OW-30	6/14/2005	1293.19	12.78	---	0.00	---	1,280.41	---	---
OW-30	8/2/2005	1293.19	15.06	---	0.00	---	1,278.13	---	---
OW-30	12/4/2006	1293.19	15.2	---	0.00	---	1,277.99	---	---
OW-30	12/8/2006	1293.19	16.55	---	0.00	---	1,276.64	---	---
OW-30	12/13/2006	1293.19	16.63	---	0.00	---	1,276.56	---	---
OW-30	12/14/2006	1293.19	16.62	---	0.00	---	1,276.57	---	---
OW-30	12/21/2006	1293.19	16.65	---	0.00	---	1,276.54	---	---
OW-30	12/26/2006	1293.19	16.67	---	0.00	---	1,276.52	---	---
OW-30	1/4/2007	1293.19	16.65	---	0.00	---	1,276.54	---	---
OW-30	1/10/2007	1293.19	16.65	---	0.00	---	1,276.54	---	---
OW-30	1/18/2007	1293.19	16.68	---	0.00	---	1,276.51	---	---
OW-30	1/25/2007	1293.19	16.69	---	0.00	---	1,276.50	---	---
OW-30	2/21/2007	1293.19	16.71	---	0.00	---	1,276.48	---	---
OW-30	3/13/2007	1293.19	16.72	---	0.00	---	1,276.47	---	---
OW-30	4/29/2007	1293.19	16.63	---	0.00	---	1,276.56	---	---
OW-30	5/21/2007	1293.19	16.47	---	0.00	---	1,276.72	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-30	6/22/20007	1293.19	16.62	---	0.00	---	1,276.57	---	---
OW-30	7/18/2007	1293.19	16.48	---	0.00	---	1,276.71	---	---
OW-30	8/17/2007	1293.19	16.69	---	0.00	---	1,276.50	---	---
OW-30	9/14/2007	1293.19	16.75	---	0.00	---	1,276.44	---	---
OW-30	10/25/2007	1293.19	16.6	---	0.00	---	1,276.59	---	---
OW-30	11/15/2007	1293.19	16.65	---	0.00	---	1,276.54	---	---
OW-30	12/19/2007	1293.19	16.56	---	0.00	---	1,276.63	---	---
OW-30	1/23/2008	1293.19	16.68	---	0.00	---	1,276.51	---	---
OW-30	2/14/2008	1293.19	16.61	---	0.00	---	1,276.58	---	---
OW-30	2/28/2008	1293.19	16.44	---	0.00	---	1,276.75	---	---
OW-30	3/25/2008	1293.19	16.32	---	0.00	---	1,276.87	---	---
OW-30	4/22/2008	1293.19	16.45	---	0.00	---	1,276.74	---	---
OW-30	5/15/2008	1293.19	16.22	---	0.00	---	1,276.97	---	---
OW-30	6/28/2008	1293.19	15.54	---	0.00	---	1,277.65	---	---
OW-30	7/22/2008	1293.19	16.58	---	0.00	---	1,276.61	---	---
OW-30	8/27/2008	1293.19	16.59	---	0.00	---	1,276.60	---	---
OW-30	9/25/2008	1293.19	15.94	---	0.00	---	1,277.25	---	---
OW-30	10/23/2008	1293.19	16.42	---	0.00	---	1,276.77	---	---
OW-30	11/21/2008	1293.19	16.55	---	0.00	---	1,276.64	---	---
OW-30	12/30/2008	1293.19	16.47	---	0.00	---	1,276.72	---	---
OW-30	2/10/2009	1293.19	16.63	---	0.00	---	1,276.56	---	---
OW-31	4/7/2005	1,290.32	10.2	---	0.00	---	1,280.12	---	---
OW-31	6/9/2005	1,290.32	9.37	---	0.00	---	1,280.95	---	---
OW-31	6/14/2005	1,290.32	8.65	---	0.00	---	1,281.67	---	---
OW-31	8/2/2005	1,290.32	10.78	---	0.00	---	1,279.54	---	---
OW-31	12/4/2006	1,290.32	12.34	---	0.00	---	1,277.98	---	---
OW-31	12/8/2006	1,290.32	13.75	---	0.00	---	1,276.57	---	---
OW-31	12/13/2006	1,290.32	13.76	---	0.00	---	1,276.56	---	---
OW-31	12/14/2006	1,290.32	13.77	---	0.00	---	1,276.55	---	---
OW-31	12/21/2006	1,290.32	13.77	---	0.00	---	1,276.55	---	---
OW-31	12/26/2006	1,290.32	13.79	---	0.00	---	1,276.53	---	---
OW-31	1/4/2007	1,290.32	13.77	---	0.00	---	1,276.55	---	---
OW-31	1/10/2007	1,290.32	13.77	---	0.00	---	1,276.55	---	---
OW-31	1/18/2007	1,290.32	13.8	---	0.00	---	1,276.52	---	---
OW-31	1/25/2007	1,290.32	13.8	---	0.00	---	1,276.52	---	---
OW-31	2/21/2007	1,290.32	13.79	---	0.00	---	1,276.53	---	---
OW-31	3/13/2007	1,290.32	13.8	---	0.00	---	1,276.52	---	---
OW-31	4/29/2007	1,290.32	13.75	---	0.00	---	1,276.57	---	---
OW-31	5/21/2007	1,290.32	13.7	---	0.00	---	1,276.62	---	---
OW-31	6/22/20007	1,290.32	13.68	---	0.00	---	1,276.64	---	---
OW-31	7/18/2007	1,290.32	13.69	---	0.00	---	1,276.63	---	---
OW-31	8/17/2007	1,290.32	13.41	---	0.00	---	1,276.91	---	---
OW-31	9/14/2007	1,290.32	13.29	---	0.00	---	1,277.03	---	---
OW-31	10/25/2007	1,290.32	13.32	---	0.00	---	1,277.00	---	---
OW-31	11/15/2007	1,290.32	13.33	---	0.00	---	1,276.99	---	---
OW-31	12/19/2007	1,290.32	13.45	---	0.00	---	1,276.87	---	---
OW-31	1/23/2008	1,290.32	13.49	---	0.00	---	1,276.83	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-31	2/14/2008	1,290.32	13.52	---	0.00	---	1,276.80	---	---
OW-31	2/28/2008	1,290.32	13.45	---	0.00	---	1,276.87	---	---
OW-31	3/25/2008	1,290.32	13.46	---	0.00	---	1,276.86	---	---
OW-31	4/22/2008	1,290.32	18.47	---	0.00	---	1,271.85	---	---
OW-31	5/15/2008	1,290.32	13.31	---	0.00	---	1,277.01	---	---
OW-31	6/28/2008	1,290.32	12.74	---	0.00	---	1,277.58	---	---
OW-31	7/22/2008	1,290.32	13.33	---	0.00	---	1,276.99	---	---
OW-31	8/27/2008	1,290.32	13.43	---	0.00	---	1,276.89	---	---
OW-31	9/25/2008	1,290.32	13.39	---	0.00	---	1,276.93	---	---
OW-31	10/23/2008	1,290.32	13.42	---	0.00	---	1,276.90	---	---
OW-31	11/21/2008	1,290.32	13.49	---	0.00	---	1,276.83	---	---
OW-31	12/30/2008	1,290.32	13.49	---	0.00	---	1,276.83	---	---
OW-31	2/10/2009	1,290.32	13.37	---	0.00	---	1,276.95	---	---
OW-32	4/7/2005	1,294.23	15.38	---	0.00	---	1,278.85	---	---
OW-32	6/14/2005	1,294.23	13.52	---	0.00	---	1,280.71	---	---
OW-32	8/2/2005	1,294.23	16.23	---	0.00	---	1,278.00	---	---
OW-32	12/4/2006	1,294.23	16.64	---	0.00	---	1,277.59	---	---
OW-32	12/8/2006	1,294.23	18.25	---	0.00	---	1,275.98	---	---
OW-32	12/13/2006	1,294.23	18.47	---	0.00	---	1,275.76	---	---
OW-32	12/14/2006	1,294.23	18.5	---	0.00	---	1,275.73	---	---
OW-32	12/21/2006	1,294.23	18.58	---	0.00	---	1,275.65	---	---
OW-32	12/26/2006	1,294.23	18.6	---	0.00	---	1,275.63	---	---
OW-32	1/4/2007	1,294.23	18.66	---	0.00	---	1,275.57	---	---
OW-32	1/10/2007	1,294.23	18.73	---	0.00	---	1,275.50	---	---
OW-32	1/18/2007	1,294.23	18.79	---	0.00	---	1,275.44	---	---
OW-32	1/25/2007	1,294.23	18.86	---	0.00	---	1,275.37	---	---
OW-32	2/21/2007	1,294.23	18.94	---	0.00	---	1,275.29	---	---
OW-32	3/13/2007	1,294.23	18.8	---	0.00	---	1,275.43	---	---
OW-32	4/29/2007	1,294.23	18.51	---	0.00	---	1,275.72	---	---
OW-32	5/21/2007	1,294.23	18.39	---	0.00	---	1,275.84	---	---
OW-32	6/22/20007	1,294.23	18.47	---	0.00	---	1,275.76	---	---
OW-32	7/18/2007	1,294.23	18.37	---	0.00	---	1,275.86	---	---
OW-32	8/17/2007	1,294.23	18.51	---	0.00	---	1,275.72	---	---
OW-32	9/14/2007	1,294.23	18.65	---	0.00	---	1,275.58	---	---
OW-32	10/25/2007	1,294.23	18.57	---	0.00	---	1,275.66	---	---
OW-32	11/15/2007	1,294.23	18.55	---	0.00	---	1,275.68	---	---
OW-32	12/19/2007	1,294.23	18.57	---	0.00	---	1,275.66	---	---
OW-32	1/23/2008	1,294.23	18.55	---	0.00	---	1,275.68	---	---
OW-32	2/14/2008	1,294.23	18.56	---	0.00	---	1,275.67	---	---
OW-32	2/28/2008	1,294.23	18.47	---	0.00	---	1,275.76	---	---
OW-32	3/25/2008	1,294.23	18.45	---	0.00	---	1,275.78	---	---
OW-32	4/22/2008	1,294.23	18.52	---	0.00	---	1,275.71	---	---
OW-32	5/15/2008	1,294.23	18.31	---	0.00	---	1,275.92	---	---
OW-32	6/28/2008	1,294.23	18.11	---	0.00	---	1,276.12	---	---
OW-32	7/22/2008	1,294.23	18.42	---	0.00	---	1,275.81	---	---
OW-32	8/27/2008	1,294.23	18.51	---	0.00	---	1,275.72	---	---
OW-32	9/25/2008	1,294.23	18.34	---	0.00	---	1,275.89	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-32	10/23/2008	1,294.23	18.51	---	0.00	---	1,275.72	---	---
OW-32	11/21/2008	1,294.23	18.58	---	0.00	---	1,275.65	---	---
OW-32	12/30/2008	1,294.23	18.67	---	0.00	---	1,275.56	---	---
OW-32	2/10/2009	1,294.23	18.65	---	0.00	---	1,275.58	---	---
OW-33	4/7/2005	1,291.61	13.15	---	0.00	---	1,278.46	---	---
OW-33	6/14/2005	1,291.61	10.96	---	0.00	---	1,280.65	---	---
OW-33	8/2/2005	1,291.61	14.14	---	0.00	---	1,277.47	---	---
OW-33	12/4/2006	1,291.61	14	---	0.00	---	1,277.61	---	---
OW-33	12/8/2006	1,291.61	16.16	---	0.00	---	1,275.45	---	---
OW-33	12/13/2006	1,291.61	16.46	---	0.00	---	1,275.15	---	---
OW-33	12/14/2006	1,291.61	16.5	---	0.00	---	1,275.11	---	---
OW-33	12/21/2006	1,291.61	16.82	---	0.00	---	1,274.79	---	---
OW-33	12/26/2006	1,291.61	16.97	---	0.00	---	1,274.64	---	---
OW-33	1/4/2007	1,291.61	17.15	---	0.00	---	1,274.46	---	---
OW-33	1/10/2007	1,291.61	17.24	---	0.00	---	1,274.37	---	---
OW-33	1/18/2007	1,291.61	17.3	---	0.00	---	1,274.31	---	---
OW-33	1/25/2007	1,291.61	17.35	---	0.00	---	1,274.26	---	---
OW-33	2/21/2007	1,291.61	17.53	---	0.00	---	1,274.08	---	---
OW-33	3/13/2007	1,291.61	17.21	---	0.00	---	1,274.40	---	---
OW-33	4/29/2007	1,291.61	16.58	---	0.00	---	1,275.03	---	---
OW-33	5/21/2007	1,291.61	16.18	---	0.00	---	1,275.43	---	---
OW-33	6/22/20007	1,291.61	16.39	---	0.00	---	1,275.22	---	---
OW-33	7/18/2007	1,291.61	16.2	---	0.00	---	1,275.41	---	---
OW-33	8/17/2007	1,291.61	16.68	---	0.00	---	1,274.93	---	---
OW-33	9/14/2007	1,291.61	17.03	---	0.00	---	1,274.58	---	---
OW-33	10/25/2007	1,291.61	17.03	---	0.00	---	1,274.58	---	---
OW-33	11/15/2007	1,291.61	17.01	---	0.00	---	1,274.60	---	---
OW-33	12/19/2007	1,291.61	17.05	---	0.00	---	1,274.56	---	---
OW-33	1/23/2008	1,291.61	17.02	---	0.00	---	1,274.59	---	---
OW-33	2/14/2008	1,291.61	17	---	0.00	---	1,274.61	---	---
OW-33	2/28/2008	1,291.61	16.74	---	0.00	---	1,274.87	---	---
OW-33	3/25/2008	1,291.61	15.92	---	0.00	---	1,275.69	---	---
OW-33	4/22/2008	1,291.61	16.14	---	0.00	---	1,275.47	---	---
OW-33	5/15/2008	1,291.61	15.28	---	0.00	---	1,276.33	---	---
OW-33	6/28/2008	1,291.61	13.48	---	0.00	---	1,278.13	---	---
OW-33	7/22/2008	1,291.61	16.04	---	0.00	---	1,275.57	---	---
OW-33	8/27/2008	1,291.61	16.47	---	0.00	---	1,275.14	---	---
OW-33	9/25/2008	1,291.61	16.09	---	0.00	---	1,275.52	---	---
OW-33	10/23/2008	1,291.61	16.46	---	0.00	---	1,275.15	---	---
OW-33	11/21/2008	1,291.61	16.67	---	0.00	---	1,274.94	---	---
OW-33	12/30/2008	1,291.61	16.87	---	0.00	---	1,274.74	---	---
OW-33	2/10/2009	1,291.61	16.93	---	0.00	---	1,274.68	---	---
OW-35	4/7/2005	1,307.76	0.4	---	0.00	---	1,307.36	---	---
OW-35	6/14/2005	1,307.76	2.79	---	0.00	---	1,304.97	---	---
OW-35	8/2/2005	1,307.76	3.96	---	0.00	---	1,303.80	---	---
OW-35	2/14/2008	1,307.76	2.61	---	0.00	---	1,305.15	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-35	2/10/2009	1,307.76	3.26	---	0.00	---	1,304.50	---	---
OW-36	4/7/2005	1,304.79	9.06	---	0.00	---	1,295.73	---	---
OW-36	6/14/2005	1,304.79	6.42	---	0.00	---	1,298.37	---	---
OW-36	8/2/2005	1,304.79	9.79	---	0.00	---	1,295.00	---	---
OW-36	12/4/2006	1,304.79	NM	---	---	---	---	---	---
OW-36	12/8/2006	1,304.79	NM	---	---	---	---	---	---
OW-36	12/13/2006	1,304.79	12.98	---	0.00	---	1,291.81	---	---
OW-36	12/14/2006	1,304.79	12.93	---	0.00	---	1,291.86	---	---
OW-36	12/21/2006	1,304.79	12.8	---	0.00	---	1,291.99	---	---
OW-36	12/26/2006	1,304.79	12.8	---	0.00	---	1,291.99	---	---
OW-36	1/4/2007	1,304.79	12.6	---	0.00	---	1,292.19	---	---
OW-36	1/10/2007	1,304.79	12.74	---	0.00	---	1,292.05	---	---
OW-36	1/18/2007	1,304.79	13.13	---	0.00	---	1,291.66	---	---
OW-36	1/25/2007	1,304.79	13.16	---	0.00	---	1,291.63	---	---
OW-36	2/21/2007	1,304.79	12.37	---	0.00	---	1,292.42	---	---
OW-36	3/13/2007	1,304.79	11.85	---	0.00	---	1,292.94	---	---
OW-36	4/29/2007	1,304.79	8.3	---	0.00	---	1,296.49	---	---
OW-36	5/21/2007	1,304.79	7.45	---	0.00	---	1,297.34	---	---
OW-36	6/22/20007	1,304.79	7.69	---	0.00	---	1,297.10	---	---
OW-36	7/18/2007	1,304.79	7.57	---	0.00	---	1,297.22	---	---
OW-36	8/17/2007	1,304.79	8.89	---	0.00	---	1,295.90	---	---
OW-36	9/14/2007	1,304.79	10.54	---	0.00	---	1,294.25	---	---
OW-36	10/25/2007	1,304.79	7.95	---	0.00	---	1,296.84	---	---
OW-36	11/15/2007	1,304.79	9.49	---	0.00	---	1,295.30	---	---
OW-36	12/19/2007	1,304.79	8.73	---	0.00	---	1,296.06	---	---
OW-36	1/23/2008	1,304.79	8.89	---	0.00	---	1,295.90	---	---
OW-36	2/14/2008	1,304.79	8.08	---	0.00	---	1,296.71	---	---
OW-36	2/28/2008	1,304.79	7.19	---	0.00	---	1,297.60	---	---
OW-36	3/25/2008	1,304.79	6.78	---	0.00	---	1,298.01	---	---
OW-36	4/22/2008	1,304.79	7.32	---	0.00	---	1,297.47	---	---
OW-36	5/15/2008	1,304.79	6.48	---	0.00	---	1,298.31	---	---
OW-36	6/28/2008	1,304.79	NM	---	---	---	---	---	---
OW-36	7/22/2008	1,304.79	6.63	---	0.00	---	1,298.16	---	---
OW-36	8/27/2008	1,304.79	7.68	---	0.00	---	1,297.11	---	---
OW-36	9/25/2008	1,304.79	7.03	---	0.00	---	1,297.76	---	---
OW-36	10/23/2008	1,304.79	6.26	---	0.00	---	1,298.53	---	---
OW-36	11/21/2008	1,304.79	7.27	---	0.00	---	1,297.52	---	---
OW-36	12/30/2008	1,304.79	7.96	---	0.00	---	1,296.83	---	---
OW-36	2/10/2009	1,304.79	9.55	---	0.00	---	1,295.24	---	---
OW-37	4/7/2005	1,304.01	8.05	---	0.00	---	1,295.96	---	---
OW-37	6/14/2005	1,304.01	7.01	---	0.00	---	1,297.00	---	---
OW-37	8/2/2005	1,304.01	9.16	9.09	0.07	9.10	1,294.85	1294.91	1294.92
OW-37	2/14/2008	1,304.01	8.29	---	0.00	---	1,295.72	---	---
OW-37	2/10/2009	1,304.01	7.8	---	0.00	---	1,296.21	---	---
OW-38	4/7/2005	1,301.94	7.82	---	0.00	---	1,294.12	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
OW-38	6/14/2005	1,301.94	6.67	---	0.00	---	1,295.27	---	---
OW-38	8/2/2005	1,301.94	10.11	---	0.00	---	1,291.83	---	---
OW-38	2/14/2008	1,301.94	9.41	9.32	0.09	9.34	1,292.53	1292.60	1292.62
OW-38	2/10/2009	1,301.94	8.59	8.53	0.06	8.54	1,293.35	1293.40	1293.41
OW-39	6/9/2005	1,340.81	13.49	---	0.00	---	1,327.32	---	---
OW-39	6/14/2005	1,340.81	10.56	---	0.00	---	1,330.25	---	---
OW-39	8/2/2005	1,340.81	23.58	---	0.00	---	1,317.23	---	---
OW-39	2/14/2008	1,340.81	19.61	---	0.00	---	1,321.20	---	---
OW-39	2/10/2009	1,340.81	22.43	---	0.00	---	1,318.38	---	---
SB-04	2/14/2008	1,304.43	4.4	4.34	0.06	4.35	1,300.03	1300.08	1300.09
SB-04	2/10/2009	1,304.43	NM	---	---	---	---	---	---
SB-08	2/14/2008	1,305.15	6.22	---	0.00	---	1,298.93	---	---
SB-08	2/11/2009	1,305.15	4.95	---	0.00	---	1,300.20	---	---
SB-09	2/14/2008	1,306.50	4.32	---	0.00	---	1,302.18	---	---
SB-09	2/10/2009	1,306.50	4.84	---	0.00	---	1,301.66	---	---
SB-11	2/14/2008	1,313.57	5.12	---	0.00	---	1,308.45	---	---
SB-11	2/10/2009	1,313.57	7.15	---	0.00	---	1,306.42	---	---
SB-14	2/14/2008	1,315.05	11.6	11.43	0.17	11.46	1,303.45	1303.59	1303.62
SB-14	2/10/2009	1,315.05	11.35	11.33	0.02	11.33	1,303.70	1303.72	1303.72
SB-17	2/14/2008	1,311.52	8.32	---	0.00	---	1,303.20	---	---
SB-17	2/10/2009	1,311.52	7.93	---	0.00	---	1,303.59	---	---
SB-30	2/14/2008	1,311.13	4.92	---	0.00	---	1,306.21	---	---
SB-30	2/10/2009	1,311.13	5.06	---	0.00	---	1,306.07	---	---
SB-36	2/14/2008	1,294.58	5.31	---	0.00	---	1,289.27	---	---
SB-36	2/10/2009	1,294.58	5.88	---	0.00	---	1,288.70	---	---
SB-37	2/14/2008	1,297.77	4.61	---	0.00	---	1,293.16	---	---
SB-37	2/10/2009	1,297.77	5.45	---	0.00	---	1,292.32	---	---
SB-38	2/14/2008	1,307.58	2.78	---	0.00	---	1,304.80	---	---
SB-38	2/10/2009	1,307.58	12.8	---	0.00	---	1,294.78	---	---
TW-02	2/14/2008	1,331.47	12.49	12.31	0.18	12.35	1,318.98	1319.12	1319.16
TW-02	2/10/2009	1,331.47	NM	---	---	---	---	---	---
TW-03	2/14/2008	1,329.60	18.15	---	0.00	---	1,311.45	---	---
TW-03	2/10/2009	1,329.60	18.76	---	0.00	---	1,310.84	---	---
TW-05	2/14/2008	1,314.67	5.4	---	0.00	---	1,309.27	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
TW-05	2/10/2009	1,314.67	5	---	0.00	---	1,309.67	---	---
TW-07	2/14/2008	1,321.76	11.44	---	0.00	---	1,310.32	---	---
TW-07	2/10/2009	1,321.76	10.44	---	0.00	---	1,311.32	---	---
TW-09	2/14/2008	1,322.93	3.97	3.95	0.02	3.95	1,318.96	1318.98	1318.98
TW-09	2/10/2009	1,322.93	NM	---	---	---	---	---	---
TW-10	2/14/2008	1,318.29	10	---	0.00	---	1,308.29	---	---
TW-10	2/10/2009	1,318.29	8.68	---	0.00	---	1,309.61	---	---
TW-11	2/14/2008	1,317.57	3.09	---	0.00	---	1,314.48	---	---
TW-11	2/10/2009	1,317.57	2.68	---	0.00	---	1,314.89	---	---
TW-12	2/14/2008	1,317.96	12.35	---	0.00	---	1,305.61	---	---
TW-12	2/10/2009	1,317.96	11.13	---	0.00	---	1,306.83	---	---
TW-13	2/14/2008	1,317.44	12.15	---	0.00	---	1,305.29	---	---
TW-13	2/10/2009	1,317.44	11.55	---	0.00	---	1,305.89	---	---
TW-14	2/14/2008	1,320.69	8.44	---	0.00	---	1,312.25	---	---
TW-14	2/10/2009	1,320.69	6.25	---	0.00	---	1,314.44	---	---
TW-15	2/14/2008	1,307.48	4.1	---	0.00	---	1,303.38	---	---
TW-15	2/10/2009	1,307.48	4.97	---	0.00	---	1,302.51	---	---
TW-16	2/14/2008	1,312.06	9.4	---	0.00	---	1,302.66	---	---
TW-16	2/10/2009	1,312.06	8.94	---	0.00	---	1,303.12	---	---
TW-17	2/14/2008	1,302.34	9.84	---	0.00	---	1,292.50	---	---
TW-17	2/10/2009	1,302.34	9.73	---	0.00	---	1,292.61	---	---
TW-18	2/14/2008	1,300.48	7.42	---	0.00	---	1,293.06	---	---
TW-18	2/10/2009	1,300.48	9.78	---	0.00	---	1,290.70	---	---
TW-19	2/14/2008	1,314.72	3.49	---	0.00	---	1,311.23	---	---
TW-19	2/10/2009	1,314.72	3.56	---	0.00	---	1,311.16	---	---
TW-20	2/14/2008	1,308.45	13.12	---	0.00	---	1,295.33	---	---
TW-20	2/10/2009	1,308.45	12.58	---	0.00	---	1,295.87	---	---
TW-21	2/14/2008	1,308.31	12.02	---	0.00	---	1,296.29	---	---
TW-21	2/10/2009	1,308.31	11.7	---	0.00	---	1,296.61	---	---
TW-22	2/14/2008	1,311.04	8.34	---	0.00	---	1,302.70	---	---
TW-22	2/10/2009	1,311.04	8.73	---	0.00	---	1,302.31	---	---
TW-23S	2/14/2008	1,317.21	Dry	---	---	---	---	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
TW-23S	2/10/2009	1,317.21	20	---	0.00	---	1,297.21	---	---
TW-23D	2/10/2009	1,317.55	22.9	---	0.00	---	1,294.65	---	---
TW-24S	2/14/2008	1,316.72	9.43	---	0.00	---	1,307.29	---	---
TW-24S	2/10/2009	1,316.72	8.12	---	0.00	---	1,308.60	---	---
TW-24D	2/10/2009	1,316.30	8.15	---	0.00	---	1,308.15	---	---
TW-25S	2/14/2008	1,321.26	10.42	---	0.00	---	1,310.84	---	---
TW-25S	2/10/2009	1,321.26	10.58	---	0.00	---	1,310.68	---	---
TW-25D	2/10/2009	1,320.81	10.12	---	0.00	---	1,310.69	---	---
TW-26	2/14/2008	1,320.94	Dry	---	---	---	---	---	---
TW-26	2/10/2009	1,320.94	Dry	---	---	---	---	---	---
TW-27S	2/14/2008	1,327.15	24.19	---	0.00	---	1,302.96	---	---
	2/10/2009	1,327.15	23.55	---	0.00	---	1,303.60	---	---
TW-27D	2/10/2009	1,326.91	23.99	---	0.00	---	1,302.92	---	---
TW-28	2/14/2008	1,330.17	16.31	15.01	1.30	15.27	1,313.86	1314.90	1315.16
TW-28	2/10/2009	1,330.17	16.36	15.08	1.28	15.34	1,313.81	1314.83	1315.09
TW-29	2/14/2008	1,324.93	8.36	---	0.00	---	1,316.57	---	---
TW-29	2/10/2009	1,324.93	8.25	---	0.00	---	1,316.68	---	---
TW-31S	2/14/2008	1,325.59	19.67	---	0.00	---	1,305.92	---	---
TW-31S	2/10/2009	1,325.59	19.25	---	0.00	---	1,306.34	---	---
TW-31D	2/10/2009	1,325.80	19.49	---	0.00	---	1,306.31	---	---
TW-32S	2/14/2008	1,332.47	16.39	---	0.00	---	1,316.08	---	---
TW-32S	2/10/2009	1,332.47	17.8	---	0.00	---	1,314.67	---	---
TW-32D	2/10/2009	1,332.17	38.96	---	0.00	---	1,293.21	---	---
TW-33	2/14/2008	1,325.58	7.5	7.49	0.01	7.49	1,318.08	1318.09	1318.09
TW-33	2/10/2009	1,325.58	7.18	---	0.00	---	1,318.40	---	---
TW-34	2/14/2008	1,338.29	24.51	---	0.00	---	1,313.78	---	---
TW-34	2/10/2009	1,338.29	22.8	---	0.00	---	1,315.49	---	---
TW-35	2/14/2008	1,319.39	11.15	---	0.00	---	1,308.24	---	---
TW-35	2/10/2009	1,319.39	10.22	---	0.00	---	1,309.17	---	---
TW-36	2/14/2008	1,312.82	21.25	---	0.00	---	1,291.57	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
TW-36	2/10/2009	1,312.82	19.38	---	0.00	---	1,293.44	---	---
TW-37	2/14/2008	1,323.83	8.71	8.68	0.03	8.69	1,315.12	1315.14	1315.15
TW-37	2/10/2009	1,323.83	8.22	8.21	0.01	8.21	1,315.61	1315.62	1315.62
TW-38	2/14/2008	1,317.66	21.72	---	0.00	---	1,295.94	---	---
TW-38	2/10/2009	1,317.66	20.01	---	0.00	---	1,297.65	---	---
TW-39	2/14/2008	1,317.27	6.58	---	0.00	---	1,310.69	---	---
TW-39	2/10/2009	1,317.27	5.62	---	0.00	---	1,311.65	---	---
TW-40	2/14/2008	1,335.18	18.92	---	0.00	---	1,316.26	---	---
TW-40	2/10/2009	1,335.18	19.93	---	0.00	---	1,315.25	---	---
TW-41	2/14/2008	1,326.63	8.29	---	0.00	---	1,318.34	---	---
TW-41	2/10/2009	1,326.63	8.58	---	0.00	---	1,318.05	---	---
TW-42	2/14/2008	1,317.35	6.38	---	0.00	---	1,310.97	---	---
TW-42	2/10/2009	1,317.35	6.01	---	0.00	---	1,311.34	---	---
TW-43	2/14/2008	1,313.11	7.16	---	0.00	---	1,305.95	---	---
TW-43	2/10/2009	1,313.11	7.38	---	0.00	---	1,305.73	---	---
TW-45	2/14/2008	1,307.66	6.58	---	0.00	---	1,301.08	---	---
TW-45	2/10/2009	1,307.66	6.85	---	0.00	---	1,300.81	---	---
TW-46	2/14/2008	1,310.36	6.91	---	0.00	---	1,303.45	---	---
TW-46	2/10/2009	1,310.36	5.61	---	0.00	---	1,304.75	---	---
TW-47	2/14/2008	1,306.23	4.93	---	0.00	---	1,301.30	---	---
TW-47	2/10/2009	1,306.23	4	---	0.00	---	1,302.23	---	---
TW-48	2/14/2008	1,317.29	3.18	---	0.00	---	1,314.11	---	---
TW-48	2/10/2009	1,317.29	3.51	---	0.00	---	1,313.78	---	---
TW-49	2/14/2008	1,309.63	9.26	9.24	0.02	9.24	1,300.37	1300.39	1300.39
TW-49	2/10/2009	1,309.63	9.04	---	0.00	---	1,300.59	---	---
TW-50	2/14/2008	1,309.13	11.46	11.44	0.02	11.44	1,297.67	1297.69	1297.69
TW-50	2/10/2009	1,309.13	11.56	---	0.00	---	1,297.57	---	---
TW-51	2/14/2008	1,311.84	3.17	---	0.00	---	1,308.67	---	---
TW-51	2/10/2009	1,311.84	3.43	---	0.00	---	1,308.41	---	---
TW-52	2/14/2008	1,310.06	7.95	---	0.00	---	1,302.11	---	---
TW-52	2/10/2009	1,310.06	7.34	---	0.00	---	1,302.72	---	---
TW-53	2/14/2008	1,311.46	9.03	---	0.00	---	1,302.43	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
TW-53	2/10/2009	1,311.46	8.54	---	0.00	---	1,302.92	---	---
TW-55	2/14/2008	1,316.96	8.46	---	0.00	---	1,308.50	---	---
TW-55	2/10/2009	1,316.96	5.68	---	0.00	---	1,311.28	---	---
TW-56	2/14/2008	1,322.53	6.99	---	0.00	---	1,315.54	---	---
TW-56	2/10/2009	1,322.53	8.55	---	0.00	---	1,313.98	---	---
TW-58	2/14/2008	1,324.20	10.79	---	0.00	---	1,313.41	---	---
TW-58	2/10/2009	1,324.20	11.89	11.56	0.33	11.63	1,312.31	1312.57	1312.64
TW-60	2/14/2008	1,315.10	5.28	---	0.00	---	1,309.82	---	---
TW-60	2/10/2009	1,315.10	4.82	---	0.00	---	1,310.28	---	---
TW-62	2/14/2008	1,324.50	12.08	11.99	0.09	12.01	1,312.42	1312.49	1312.51
TW-62	2/10/2009	1,324.50	11.32	11.23	0.09	11.25	1,313.18	1313.25	1313.27
TW-63	2/14/2008	1,317.56	5.73	---	0.00	---	1,311.83	---	---
TW-63	2/10/2009	1,317.56	5.73	---	0.00	---	1,311.83	---	---
TW-64	2/14/2008	1,313.56	6.71	---	0.00	---	1,306.85	---	---
TW-64	2/10/2009	1,313.56	6.31	---	0.00	---	1,307.25	---	---
TW-65	2/14/2008	1,317.06	3.94	---	0.00	---	1,313.12	---	---
TW-65	2/10/2009	1,317.06	4.93	---	0.00	---	1,312.13	---	---
TW-66	2/14/2008	1,321.24	6.7	6.68	0.02	6.68	1,314.54	1314.56	1314.56
TW-66	2/10/2009	1,321.24	6.34	6.05	0.29	6.11	1,314.90	1315.13	1315.19
TW-67	2/14/2008	1,314.69	2.09	---	0.00	---	1,312.60	---	---
TW-67	2/10/2009	1,314.69	4.8	---	0.00	---	1,309.89	---	---
TW-69	2/14/2008	1,324.91	3.76	---	0.00	---	1,321.15	---	---
TW-69	2/10/2009	1,324.91	12.03	---	0.00	---	1,312.88	---	---
TW-72	2/14/2008	1,300.29	NM	---	---	---	---	---	---
TW-72	2/10/2009	1,300.29	9.57	---	0.00	---	1,290.72	---	---
TW-73	2/14/2008	1,300.40	6.68	---	0.00	---	1,293.72	---	---
TW-73	2/10/2009	1,300.40	8.99	---	0.00	---	1,291.41	---	---
TW-74	2/14/2008	1,299.76	9.01	---	0.00	---	1,290.75	---	---
TW-74	2/10/2009	1,299.76	8.63	---	0.00	---	1,291.13	---	---
TW-75	2/14/2008	1,298.38	7.31	---	0.00	---	1,291.07	---	---
TW-75	2/10/2009	1,298.38	9.97	---	0.00	---	1,288.41	---	---
TW-76	2/14/2008	1,297.07	5.7	---	0.00	---	1,291.37	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
TW-76	2/10/2009	1,297.07	7.25	---	0.00	---	1,289.82	---	---
TW-77	2/14/2008	1,297.59	NM	---	---	---	---	---	---
TW-77	2/10/2009	1,297.59	8.4	---	0.00	---	1,289.19	---	---
TW-78	2/14/2008	1,297.58	NM	---	---	---	---	---	---
TW-78	2/10/2009	1,297.58	8.82	---	0.00	---	1,288.76	---	---
TW-79	2/14/2008	1,314.17	20.53	---	0.00	---	1,293.64	---	---
TW-79	2/10/2009	1,314.17	19.82	---	0.00	---	1,294.35	---	---
TW-80	2/14/2008	1,308.99	Dry	---	---	---	---	---	---
TW-80	2/10/2009	1,308.99	15.1	---	0.00	---	1,293.89	---	---
TW-81	2/10/2009	1,310.90	17.16	---	0.00	---	1,293.74	---	---
TW-82	2/10/2009	1,306.56	14.53	---	0.00	---	1,292.03	---	---
TW-83	2/10/2009	1,331.42	11.81	---	0.00	---	1,319.61	---	---
TW-84	2/10/2009	1,335.99	29.18	---	0.00	---	1,306.81	---	---
TW-85	2/10/2009	1,333.05	25.8	---	0.00	---	1,307.25	---	---
TW-86	2/10/2009	1,327.69	16.86	---	0.00	---	1,310.83	---	---
TW-87	2/10/2009	1,320.23	2.76	---	0.00	---	1,317.47	---	---
TW-88	2/10/2009	1,332.29	11.02	---	0.00	---	1,321.27	---	---
TW-89	2/10/2009	1,331.25	19.18	---	0.00	---	1,312.07	---	---
TW-90	2/10/2009	1,323.06	14.19	---	0.00	---	1,308.87	---	---
TW-91	2/10/2009	1,318.61	10.08	---	0.00	---	1,308.53	---	---
TW-92	2/10/2009	1,326.95	16.34	---	0.00	---	1,310.61	---	---
TW-93	2/10/2009	1,310.74	5.79	---	0.00	---	1,304.95	---	---
TW-94	2/10/2009	1,307.44	4.18	---	0.00	---	1,303.26	---	---
TW-96	2/10/2009	1,312.73	4.68	---	0.00	---	1,308.05	---	---
TW-97	2/10/2009	1,308.33	7.01	---	0.00	---	1,301.32	---	---
TW-98	2/10/2009	1,306.15	5.82	---	0.00	---	1,300.33	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
TW-99	2/10/2009	1,304.77	6.6	---	0.00	---	1,298.17	---	---
TW-100	2/10/2009	1,312.66	15.55	---	0.00	---	1,297.11	---	---
TW-101	2/10/2009	1,323.10	13.01	---	0.00	---	1,310.09	---	---
TW-102S	2/10/2009	1,329.59	8.12	---	0.00	---	1,321.47	---	---
TW-102D	2/10/2009	1,329.45	10.96	---	0.00	---	1,318.49	---	---
TW-103S	2/10/2009	1,324.73	10.38	---	0.00	---	1,314.35	---	---
TW-103D	2/10/2009	1,325.02	13.53	12.3	1.23	12.55	1,311.49	1312.47	1312.72
TW-104S	2/10/2009	1,328.75	16.48	---	0.00	---	1,312.27	---	---
TW-104D	2/10/2009	1,328.88	16.13	---	0.00	---	1,312.75	---	---
TW-105S	2/10/2009	1,331.53	Dry	---	---	---	---	---	---
TW-105D	2/10/2009	1,331.16	18.06	---	0.00	---	1,313.10	---	---
TW-106S	2/10/2009	1,320.76	3.78	---	0.00	---	1,316.98	---	---
TW-106D	2/10/2009	1,321.33	4.22	---	0.00	---	1,317.11	---	---
TW-107	2/10/2009	1,314.07	21.28	---	0.00	---	1,292.79	---	---
TW-108	2/10/2009	1,314.67	20.25	---	0.00	---	1,294.42	---	---
TW-109	2/10/2009	1,316.48	17.17	---	0.00	---	1,299.31	---	---
TW-110	2/10/2009	1,313.93	11.1	---	0.00	---	1,302.83	---	---
TW-111	2/10/2009	1,299.02	7.9	---	0.00	---	1,291.12	---	---
TW-112	2/10/2009	1,294.79	5.1	---	0.00	---	1,289.69	---	---
TW-113	2/10/2009	1,296.31	5.61	---	0.00	---	1,290.70	---	---
TW-114	2/10/2009	1,297.30	5.11	---	0.00	---	1,292.19	---	---
TW-115	2/10/2009	1,317.22	5.23	---	0.00	---	1,311.99	---	---
TW-116S	2/10/2009	1,311.23	3.74	---	0.00	---	1,307.49	---	---
TW-116D	2/10/2009	1,311.49	4.12	---	0.00	---	1,307.37	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
TW-118	2/10/2009	1,324.39	12.68	---	0.00	---	1,311.71	---	---
TW-119	2/10/2009	1,324.17	12.16	---	0.00	---	1,312.01	---	---
TW-120	2/10/2009	1,327.26	14.14	---	0.00	---	1,313.12	---	---
TW-121	2/10/2009	1,319.24	7.65	7.59	0.06	7.60	1,311.59	1311.64	1311.65
TW-122	2/10/2009	1,319.97	7.79	7.74	0.05	7.75	1,312.18	1312.22	1312.23
TW-123	2/10/2009	1,307.83	5.96	---	0.00	---	1,301.87	---	---
TW-124	2/10/2009	1,319.55	7.16	---	0.00	---	1,312.39	---	---
TW-125	2/10/2009	1,329.78	13.46	---	0.00	---	1,316.32	---	---
TW-126	2/10/2009	1,306.72	5.38	---	0.00	---	1,301.34	---	---
TW-128	2/10/2009	1,307.37	3.87	---	0.00	---	1,303.50	---	---
TW-129	2/10/2009	1,309.43	6.01	---	0.00	---	1,303.42	---	---
TW-130	2/10/2009	1,307.49	6.32	---	0.00	---	1,301.17	---	---
TW-131	2/10/2009	1,305.84	9.22	---	0.00	---	1,296.62	---	---
PZ-01	12/4/2006	1,295.56	16.99	---	0.00	---	1,278.57	---	---
PZ-01	12/8/2006	1,295.56	18.78	---	0.00	---	1,276.78	---	---
PZ-01	12/13/2006	1,295.56	18.78	---	0.00	---	1,276.78	---	---
PZ-01	12/14/2006	1,295.56	18.78	---	0.00	---	1,276.78	---	---
PZ-01	12/21/2006	1,295.56	18.79	---	0.00	---	1,276.77	---	---
PZ-01	12/26/2006	1,295.56	18.79	---	0.00	---	1,276.77	---	---
PZ-01	1/4/2007	1,295.56	18.78	---	0.00	---	1,276.78	---	---
PZ-01	1/10/2007	1,295.56	18.78	---	0.00	---	1,276.78	---	---
PZ-01	1/18/2007	1,295.56	18.79	---	0.00	---	1,276.77	---	---
PZ-01	1/25/2007	1,295.56	18.79	---	0.00	---	1,276.77	---	---
PZ-01	2/21/2007	1,295.56	18.79	---	0.00	---	1,276.77	---	---
PZ-01	3/13/2007	1,295.56	18.77	---	0.00	---	1,276.79	---	---
PZ-01	4/29/2007	1,295.56	18.71	---	0.00	---	1,276.85	---	---
PZ-01	5/21/2007	1,295.56	18.56	---	0.00	---	1,277.00	---	---
PZ-01	6/22/20007	1,295.56	18.48	---	0.00	---	1,277.08	---	---
PZ-01	7/18/2007	1,295.56	19.57	---	0.00	---	1,275.99	---	---
PZ-01	8/17/2007	1,295.56	18.67	---	0.00	---	1,276.89	---	---
PZ-01	9/14/2007	1,295.56	18.68	---	0.00	---	1,276.88	---	---
PZ-01	10/25/2007	1,295.56	18.62	---	0.00	---	1,276.94	---	---
PZ-01	11/15/2007	1,295.56	18.64	---	0.00	---	1,276.92	---	---
PZ-01	12/19/2007	1,295.56	18.63	---	0.00	---	1,276.93	---	---
PZ-01	1/23/2008	1,295.56	18.64	---	0.00	---	1,276.92	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
PZ-01	2/14/2008	1,295.56	18.64	---	0.00	---	1,276.92	---	---
PZ-01	2/28/2008	1,295.56	18.57	---	0.00	---	1,276.99	---	---
PZ-01	3/25/2008	1,295.56	18.5	---	0.00	---	1,277.06	---	---
PZ-01	4/22/2008	1,295.56	18.42	---	0.00	---	1,277.14	---	---
PZ-01	5/15/2008	1,295.56	18.17	---	0.00	---	1,277.39	---	---
PZ-01	6/28/2008	1,295.56	17.87	---	0.00	---	1,277.69	---	---
PZ-01	7/22/2008	1,295.56	18.54	---	0.00	---	1,277.02	---	---
PZ-01	8/27/2008	1,295.56	18.51	---	0.00	---	1,277.05	---	---
PZ-01	9/25/2008	1,295.56	15.89	---	0.00	---	1,279.67	---	---
PZ-01	10/23/2008	1,295.56	18.37	---	0.00	---	1,277.19	---	---
PZ-01	11/21/2008	1,295.56	18.47	---	0.00	---	1,277.09	---	---
PZ-01	12/30/2008	1,295.56	18.43	---	0.00	---	1,277.13	---	---
PZ-01	2/10/2009	1,295.56	18.39	---	0.00	---	1,277.17	---	---
PZ-02	12/4/2006	1,293.31	15.32	---	0.00	---	1,277.99	---	---
PZ-02	12/8/2006	1,293.31	16.2	---	0.00	---	1,277.11	---	---
PZ-02	12/13/2006	1,293.31	16.24	---	0.00	---	1,277.07	---	---
PZ-02	12/14/2006	1,293.31	16.25	---	0.00	---	1,277.06	---	---
PZ-02	12/21/2006	1,293.31	16.25	---	0.00	---	1,277.06	---	---
PZ-02	12/26/2006	1,293.31	16.26	---	0.00	---	1,277.05	---	---
PZ-02	1/4/2007	1,293.31	16.24	---	0.00	---	1,277.07	---	---
PZ-02	1/10/2007	1,293.31	16.25	---	0.00	---	1,277.06	---	---
PZ-02	1/18/2007	1,293.31	16.25	---	0.00	---	1,277.06	---	---
PZ-02	1/25/2007	1,293.31	16.25	---	0.00	---	1,277.06	---	---
PZ-02	2/21/2007	1,293.31	16.22	---	0.00	---	1,277.09	---	---
PZ-02	3/13/2007	1,293.31	16.22	---	0.00	---	1,277.09	---	---
PZ-02	4/29/2007	1,293.31	16.17	---	0.00	---	1,277.14	---	---
PZ-02	5/21/2007	1,293.31	16.16	---	0.00	---	1,277.15	---	---
PZ-02	6/22/20007	1,293.31	16.16	---	0.00	---	1,277.15	---	---
PZ-02	7/18/2007	1,293.31	16.16	---	0.00	---	1,277.15	---	---
PZ-02	8/17/2007	1,293.31	16.16	---	0.00	---	1,277.15	---	---
PZ-02	9/14/2007	1,293.31	16.19	---	0.00	---	1,277.12	---	---
PZ-02	10/25/2007	1,293.31	16.2	---	0.00	---	1,277.11	---	---
PZ-02	11/15/2007	1,293.31	16.21	---	0.00	---	1,277.10	---	---
PZ-02	12/19/2007	1,293.31	16.16	---	0.00	---	1,277.15	---	---
PZ-02	1/23/2008	1,293.31	16.19	---	0.00	---	1,277.12	---	---
PZ-02	2/14/2008	1,293.31	16.21	---	0.00	---	1,277.10	---	---
PZ-02	2/28/2008	1,293.31	16.15	---	0.00	---	1,277.16	---	---
PZ-02	3/25/2008	1,293.31	16.21	---	0.00	---	1,277.10	---	---
PZ-02	4/22/2008	1,293.31	16.21	---	0.00	---	1,277.10	---	---
PZ-02	5/15/2008	1,293.31	16.21	---	0.00	---	1,277.10	---	---
PZ-02	6/28/2008	1,293.31	16.17	---	0.00	---	1,277.14	---	---
PZ-02	7/22/2008	1,293.31	16.22	---	0.00	---	1,277.09	---	---
PZ-02	8/27/2008	1,293.31	16.25	---	0.00	---	1,277.06	---	---
PZ-02	9/25/2008	1,293.31	16.23	---	0.00	---	1,277.08	---	---
PZ-02	10/23/2008	1,293.31	16.23	---	0.00	---	1,277.08	---	---
PZ-02	11/21/2008	1,293.31	16.23	---	0.00	---	1,277.08	---	---
PZ-02	12/30/2008	1,293.31	16.21	---	0.00	---	1,277.10	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
PZ-02	2/10/2009	1,293.31	16.19	---	0.00	---	1,277.12	---	---
PZ-03	12/4/2006	1,293.41	15.71	---	0.00	---	1,277.70	---	---
PZ-03	12/8/2006	1,293.41	17.35	---	0.00	---	1,276.06	---	---
PZ-03	12/13/2006	1,293.41	17.53	---	0.00	---	1,275.88	---	---
PZ-03	12/14/2006	1,293.41	17.55	---	0.00	---	1,275.86	---	---
PZ-03	12/21/2006	1,293.41	17.62	---	0.00	---	1,275.79	---	---
PZ-03	12/26/2006	1,293.41	17.64	---	0.00	---	1,275.77	---	---
PZ-03	1/4/2007	1,293.41	17.72	---	0.00	---	1,275.69	---	---
PZ-03	1/10/2007	1,293.41	17.77	---	0.00	---	1,275.64	---	---
PZ-03	1/18/2007	1,293.41	17.87	---	0.00	---	1,275.54	---	---
PZ-03	1/25/2007	1,293.41	17.91	---	0.00	---	1,275.50	---	---
PZ-03	2/21/2007	1,293.41	17.97	---	0.00	---	1,275.44	---	---
PZ-03	3/13/2007	1,293.41	17.81	---	0.00	---	1,275.60	---	---
PZ-03	4/29/2007	1,293.41	17.5	---	0.00	---	1,275.91	---	---
PZ-03	5/21/2007	1,293.41	17.31	---	0.00	---	1,276.10	---	---
PZ-03	6/22/20007	1,293.41	17.45	---	0.00	---	1,275.96	---	---
PZ-03	7/18/2007	1,293.41	17.01	---	0.00	---	1,276.40	---	---
PZ-03	8/17/2007	1,293.41	17.22	---	0.00	---	1,276.19	---	---
PZ-03	9/14/2007	1,293.41	18.38	---	0.00	---	1,275.03	---	---
PZ-03	10/25/2007	1,293.41	17.31	---	0.00	---	1,276.10	---	---
PZ-03	11/15/2007	1,293.41	17.29	---	0.00	---	1,276.12	---	---
PZ-03	12/19/2007	1,293.41	17.31	---	0.00	---	1,276.10	---	---
PZ-03	1/23/2008	1,293.41	17.26	---	0.00	---	1,276.15	---	---
PZ-03	2/14/2008	1,293.41	17.27	---	0.00	---	1,276.14	---	---
PZ-03	2/28/2008	1,293.41	17.18	---	0.00	---	1,276.23	---	---
PZ-03	3/25/2008	1,293.41	17.08	---	0.00	---	1,276.33	---	---
PZ-03	4/22/2008	1,293.41	17.12	---	0.00	---	1,276.29	---	---
PZ-03	5/15/2008	1,293.41	16.81	---	0.00	---	1,276.60	---	---
PZ-03	6/28/2008	1,293.41	16.43	---	0.00	---	1,276.98	---	---
PZ-03	7/22/2008	1,293.41	17.06	---	0.00	---	1,276.35	---	---
PZ-03	8/27/2008	1,293.41	17.73	---	0.00	---	1,275.68	---	---
PZ-03	9/25/2008	1,293.41	16.97	---	0.00	---	1,276.44	---	---
PZ-03	10/23/2008	1,293.41	17.17	---	0.00	---	1,276.24	---	---
PZ-03	11/21/2008	1,293.41	17.26	---	0.00	---	1,276.15	---	---
PZ-03	12/30/2008	1,293.41	17.33	---	0.00	---	1,276.08	---	---
PZ-03	2/10/2009	1,293.41	17.32	---	0.00	---	1,276.09	---	---
PZ-04	12/4/2006	1,293.04	15.37	---	0.00	---	1,277.67	---	---
PZ-04	12/8/2006	1,293.04	17.1	---	0.00	---	1,275.94	---	---
PZ-04	12/13/2006	1,293.04	17.4	---	0.00	---	1,275.64	---	---
PZ-04	12/14/2006	1,293.04	17.45	---	0.00	---	1,275.59	---	---
PZ-04	12/21/2006	1,293.04	17.83	---	0.00	---	1,275.21	---	---
PZ-04	12/26/2006	1,293.04	17.97	---	0.00	---	1,275.07	---	---
PZ-04	1/4/2007	1,293.04	18.17	---	0.00	---	1,274.87	---	---
PZ-04	1/10/2007	1,293.04	18.27	---	0.00	---	1,274.77	---	---
PZ-04	1/18/2007	1,293.04	18.35	---	0.00	---	1,274.69	---	---
PZ-04	1/25/2007	1,293.04	18.4	---	0.00	---	1,274.64	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
PZ-04	2/21/2007	1,293.04	18.4	---	0.00	---	1,274.64	---	---
PZ-04	3/13/2007	1,293.04	18.25	---	0.00	---	1,274.79	---	---
PZ-04	4/29/2007	1,293.04	17.5	---	0.00	---	1,275.54	---	---
PZ-04	5/21/2007	1,293.04	17.07	---	0.00	---	1,275.97	---	---
PZ-04	6/22/20007	1,293.04	17.3	---	0.00	---	1,275.74	---	---
PZ-04	7/18/2007	1,293.04	17.06	---	0.00	---	1,275.98	---	---
PZ-04	8/17/2007	1,293.04	17.6	---	0.00	---	1,275.44	---	---
PZ-04	9/14/2007	1,293.04	17.99	---	0.00	---	1,275.05	---	---
PZ-04	10/25/2007	1,293.04	17.97	---	0.00	---	1,275.07	---	---
PZ-04	11/15/2007	1,293.04	17.99	---	0.00	---	1,275.05	---	---
PZ-04	12/19/2007	1,293.04	18.07	---	0.00	---	1,274.97	---	---
PZ-04	1/23/2008	1,293.04	18	---	0.00	---	1,275.04	---	---
PZ-04	2/14/2008	1,293.04	17.98	---	0.00	---	1,275.06	---	---
PZ-04	2/28/2008	1,293.04	17.72	---	0.00	---	1,275.32	---	---
PZ-04	3/25/2008	1,293.04	17.01	---	0.00	---	1,276.03	---	---
PZ-04	4/22/2008	1,293.04	17.12	---	0.00	---	1,275.92	---	---
PZ-04	5/15/2008	1,293.04	16.51	---	0.00	---	1,276.53	---	---
PZ-04	6/28/2008	1,293.04	15.76	---	0.00	---	1,277.28	---	---
PZ-04	7/22/2008	1,293.04	17.06	---	0.00	---	1,275.98	---	---
PZ-04	8/27/2008	1,293.04	17.37	---	0.00	---	1,275.67	---	---
PZ-04	9/25/2008	1,293.04	16.98	---	0.00	---	1,276.06	---	---
PZ-04	10/23/2008	1,293.04	17.36	---	0.00	---	1,275.68	---	---
PZ-04	11/21/2008	1,293.04	17.61	---	0.00	---	1,275.43	---	---
PZ-04	12/30/2008	1,293.04	17.84	---	0.00	---	1,275.20	---	---
PZ-04	2/10/2009	1,293.04	17.86	---	0.00	---	1,275.18	---	---
PZ-05	12/4/2006	1,292.62	15.1	---	0.00	---	1,277.52	---	---
PZ-05	12/8/2006	1,292.62	18.7	---	0.00	---	1,273.92	---	---
PZ-05	12/13/2006	1,292.62	18.73	---	0.00	---	1,273.89	---	---
PZ-05	12/14/2006	1,292.62	18.73	---	0.00	---	1,273.89	---	---
PZ-05	12/21/2006	1,292.62	18.74	---	0.00	---	1,273.88	---	---
PZ-05	12/26/2006	1,292.62	18.75	---	0.00	---	1,273.87	---	---
PZ-05	1/4/2007	1,292.62	18.76	---	0.00	---	1,273.86	---	---
PZ-05	1/10/2007	1,292.62	18.78	---	0.00	---	1,273.84	---	---
PZ-05	1/18/2007	1,292.62	18.8	---	0.00	---	1,273.82	---	---
PZ-05	1/25/2007	1,292.62	18.84	---	0.00	---	1,273.78	---	---
PZ-05	2/21/2007	1,292.62	18.72	---	0.00	---	1,273.90	---	---
PZ-05	3/13/2007	1,292.62	18.71	---	0.00	---	1,273.91	---	---
PZ-05	6/22/20007	1,292.62	18.3	---	0.00	---	1,274.32	---	---
PZ-05	7/18/2007	1,292.62	18.25	---	0.00	---	1,274.37	---	---
PZ-05	8/17/2007	1,292.62	18.4	---	0.00	---	1,274.22	---	---
PZ-05	9/14/2007	1,292.62	18.46	---	0.00	---	1,274.16	---	---
PZ-05	10/25/2007	1,292.62	18.39	---	0.00	---	1,274.23	---	---
PZ-05	11/15/2007	1,292.62	18.43	---	0.00	---	1,274.19	---	---
PZ-05	12/19/2007	1,292.62	18.32	---	0.00	---	1,274.30	---	---
PZ-05	1/23/2008	1,292.62	18.34	---	0.00	---	1,274.28	---	---
PZ-05	2/14/2008	1,292.62	18.29	---	0.00	---	1,274.33	---	---
PZ-05	2/28/2008	1,292.62	18.15	---	0.00	---	1,274.47	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
PZ-05	3/25/2008	1,292.62	18.09	---	0.00	---	1,274.53	---	---
PZ-05	4/22/2008	1,292.62	18.11	---	0.00	---	1,274.51	---	---
PZ-05	5/15/2008	1,292.62	16.62	---	0.00	---	1,276.00	---	---
PZ-05	6/28/2008	1,292.62	14.91	---	0.00	---	1,277.71	---	---
PZ-05	7/22/2008	1,292.62	17.18	---	0.00	---	1,275.44	---	---
PZ-05	8/27/2008	1,292.62	18.42	---	0.00	---	1,274.20	---	---
PZ-05	9/25/2008	1,292.62	18.27	---	0.00	---	1,274.35	---	---
PZ-05	10/23/2008	1,292.62	18.35	---	0.00	---	1,274.27	---	---
PZ-05	11/21/2008	1,292.62	18.38	---	0.00	---	1,274.24	---	---
PZ-05	12/30/2008	1,292.62	18.41	---	0.00	---	1,274.21	---	---
PZ-05	2/10/2009	1,292.62	18.41	---	0.00	---	1,274.21	---	---
ES-01	12/4/2006	1,291.44	12.84	---	0.00	---	1,278.60	---	---
ES-01	12/8/2006	1,291.44	14.4	---	0.00	---	1,277.04	---	---
ES-01	12/13/2006	1,291.44	22.75	---	0.00	---	1,268.69	---	---
ES-01	12/14/2006	1,291.44	22.75	---	0.00	---	1,268.69	---	---
ES-01	12/21/2006	1,291.44	22.75	---	0.00	---	1,268.69	---	---
ES-01	12/26/2006	1,291.44	22.75	---	0.00	---	1,268.69	---	---
ES-01	1/4/2007	1,291.44	22.75	---	0.00	---	1,268.69	---	---
ES-01	1/10/2007	1,291.44	22.75	---	0.00	---	1,268.69	---	---
ES-01	1/18/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	1/25/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	2/21/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	3/13/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	4/29/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	5/21/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	6/22/20007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	7/18/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	8/17/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	9/14/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	10/25/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	11/15/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	12/19/2007	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	1/23/2008	1,291.44	24.5	---	0.00	---	1,266.94	---	---
ES-01	2/14/2008	1,291.44	23.51	---	0.00	---	1,267.93	---	---
ES-01	2/28/2008	1,291.44	24.25	---	0.00	---	1,267.19	---	---
ES-01	3/25/2008	1,291.44	24.25	---	0.00	---	1,267.19	---	---
ES-01	4/14/2008	1,291.44	23.51	---	0.00	---	1,267.93	---	---
ES-01	4/22/2008	1,291.44	24.32	21.52	2.80	22.08	1,267.12	1269.36	1269.92
ES-01	5/15/2008	1,291.44	24.68	21.04	3.64	21.77	1,266.76	1269.67	1270.4
ES-01	6/28/2008	1,291.44	24.58	20.91	3.67	21.64	1,266.86	1269.80	1270.53
ES-01	7/22/2008	1,291.44	24.56	21.15	3.41	21.83	1,266.88	1269.61	1270.29
ES-01	8/27/2008	1,291.44	24.38	20.98	3.40	21.66	1,267.06	1269.78	1270.46
ES-01	9/25/2008	1,291.44	13.96	---	0.00	---	1,277.48	---	---
ES-01	10/23/2008	1,291.44	24.69	---	0.00	---	1,266.75	---	---
ES-01	11/21/2008	1,291.44	24.56	---	0.00	---	1,266.88	---	---
ES-01	12/30/2008	1,291.44	24.4	---	0.00	---	1,267.04	---	---
ES-01	2/10/2009	1,291.44							

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
ES-02	12/4/2006	1,291.98	14.23	---	0.00	---	1,277.75	---	---
ES-02	12/8/2006	1,291.98	20.4	---	0.00	---	1,271.58	---	---
ES-02	12/13/2006	1,291.98	20.4	---	0.00	---	1,271.58	---	---
ES-02	12/14/2006	1,291.98	20.4	---	0.00	---	1,271.58	---	---
ES-02	12/21/2006	1,291.98	20.4	---	0.00	---	1,271.58	---	---
ES-02	12/26/2006	1,291.98	20.4	---	0.00	---	1,271.58	---	---
ES-02	1/4/2007	1,291.98	20.4	---	0.00	---	1,271.58	---	---
ES-02	1/10/2007	1,291.98	20.4	---	0.00	---	1,271.58	---	---
ES-02	1/18/2007	1,291.98	22	---	0.00	---	1,269.98	---	---
ES-02	1/25/2007	1,291.98	22	---	0.00	---	1,269.98	---	---
ES-02	2/21/2007	1,291.98	19.67	19.6	0.07	19.61	1,272.31	1272.37	1272.38
ES-02	3/13/2007	1,291.98	21.97	21.8	0.17	21.83	1,270.01	1270.15	1270.18
ES-02	4/29/2007	1,291.98	21.97	21.8	0.17	21.83	1,270.01	1270.15	1270.18
ES-02	5/21/2007	1,291.98	22	21.98	0.02	21.98	1,269.98	1270.00	1270
ES-02	6/22/20007	1,291.98	22	---	0.00	---	1,269.98	---	---
ES-02	7/18/2007	1,291.98	22	---	0.00	---	1,269.98	---	---
ES-02	8/17/2007	1,291.98	22	---	0.00	---	1,269.98	---	---
ES-02	9/14/2007	1,291.98	22	---	0.00	---	1,269.98	---	---
ES-02	10/25/2007	1,291.98	22	---	0.00	---	1,269.98	---	---
ES-02	11/15/2007	1,291.98	22	---	0.00	---	1,269.98	---	---
ES-02	12/19/2007	1,291.98	22	21.5	0.50	21.60	1,269.98	1270.38	1270.48
ES-02	1/23/2008	1,291.98	22	21.8	0.20	21.84	1,269.98	1270.14	1270.18
ES-02	2/14/2008	1,291.98	21.3	20.46	0.84	20.63	1,270.68	1271.35	1271.52
ES-02	2/28/2008	1,291.98	22	21.8	0.20	21.84	1,269.98	1270.14	1270.18
ES-02	3/25/2008	1,291.98	22	21.8	0.20	21.84	1,269.98	1270.14	1270.18
ES-02	4/22/2008	1,291.98	21.99	18.61	3.38	19.29	1,269.99	1272.69	1273.37
ES-02	5/15/2008	1,291.98	22.05	18.41	3.64	19.14	1,269.93	1272.84	1273.57
ES-02	6/28/2008	1,291.98	21.23	---	0.00	---	1,270.75	---	---
ES-02	7/22/2008	1,291.98	22.05	---	0.00	---	1,269.93	---	---
ES-02	8/27/2008	1,291.98	22.37	18.58	3.79	19.34	1,269.61	1272.64	1273.4
ES-02	9/25/2008	1,291.98	22.1	18.51	3.59	19.23	1,269.88	1272.75	1273.47
ES-02	10/23/2008	1,291.98	22.1	---	0.00	---	1,269.88	---	---
ES-02	11/21/2008	1,291.98	21.13	---	0.00	---	1,270.85	---	---
ES-02	12/30/2008	1,291.98	22.2	---	0.00	---	1,269.78	---	---
ES-02	2/10/2009	1,291.98							
ES-03	12/4/2006	1,288.25	10.68	---	0.00	---	1,277.57	---	---
ES-03	12/8/2006	1,288.25	20.05	---	0.00	---	1,268.20	---	---
ES-03	12/13/2006	1,288.25	20.05	---	0.00	---	1,268.20	---	---
ES-03	12/14/2006	1,288.25	20.05	---	0.00	---	1,268.20	---	---
ES-03	12/21/2006	1,288.25	20.05	---	0.00	---	1,268.20	---	---
ES-03	12/26/2006	1,288.25	20.05	---	0.00	---	1,268.20	---	---
ES-03	1/4/2007	1,288.25	20.05	---	0.00	---	1,268.20	---	---
ES-03	1/10/2007	1,288.25	20.05	---	0.00	---	1,268.20	---	---
ES-03	1/18/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	1/25/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	2/21/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---

Table 2a
Groundwater Elevation Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Well Identification	Gauging Date	Top of Casing Elevation Feet, AMSL	Depth to Water Feet, TOC	Depth to LNAPL Feet, TOC	LNAPL Thickness Feet	Corrected Depth to Water Feet, TOC	Groundwater Elevation Feet, AMSL	Corrected Groundwater Elevation Feet, AMSL	LNAPL Elevation
ES-03	3/13/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	4/29/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	5/21/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	6/22/20007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	7/18/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	8/17/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	9/14/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	10/25/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	11/15/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	12/19/2007	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	1/23/2008	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	2/14/2008	1,288.25	19.12	---	0.00	---	1,269.13	---	---
ES-03	2/28/2008	1,288.25	16.15	---	0.00	---	1,272.10	---	---
ES-03	3/25/2008	1,288.25	16.15	---	0.00	---	1,272.10	---	---
ES-03	4/22/2008	1,288.25	14.71	---	0.00	---	1,273.54	---	---
ES-03	5/15/2008	1,288.25	12.55	---	0.00	---	1,275.70	---	---
ES-03	6/28/2008	1,288.25	10.79	---	0.00	---	1,277.46	---	---
ES-03	7/22/2008	1,288.25	15.47	---	0.00	---	1,272.78	---	---
ES-03	8/27/2008	1,288.25	20.82	---	0.00	---	1,267.43	---	---
ES-03	9/25/2008	1,288.25	20.78	---	0.00	---	1,267.47	---	---
ES-03	10/23/2008	1,288.25	21.81	---	0.00	---	1,266.44	---	---
ES-03	11/21/2008	1,288.25	21.65	---	0.00	---	1,266.60	---	---
ES-03	12/30/2008	1,288.25	21.8	---	0.00	---	1,266.45	---	---
ES-03	2/10/2009	1,288.25							

Notes:
Depth to water and groundwater elevation corrected using an assumed specific gravity of 0.8 for LNAPL.
--- Not applicable
AMSL Above Mean Sea Level
TOC Measured relative to top of casing

Table 2b

Clustered Well Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 5)

Well Designation	Screened Formation	Gauging Date	Groundwater Elevation, Feet, AMSL	Bottom of Screen, Feet, BGS	Head Difference*	Vertical Gradient, Feet/Foot (+ upward - downward)
W-22	Alluvium/Residuum	1/23/2008	1275.83	16.5	2.83	0.120
OW-03	Fort Riley (Deep)	1/23/2008	1278.66	40	12.39	0.319
N3-1	Florence	1/23/2008	1291.05	78.8	NA	NA
W-22	Alluvium/Residuum	2/28/2008	1276.21	16.5	2.93	0.125
OW-03	Fort Riley (Deep)	2/28/2008	1279.14	40	13.38	0.345
N3-1	Florence	2/28/2008	1292.52	78.8	NA	NA
W-22	Alluvium/Residuum	3/25/2008	1276.52	16.5	2.59	0.110
OW-03	Fort Riley (Deep)	3/25/2008	1279.11	40	14.1	0.363
N3-1	Florence	3/25/2008	1293.21	78.8	NA	NA
W-22	Alluvium/Residuum	4/22/2008	1276.22	16.5	2.64	0.112
OW-03	Fort Riley (Deep)	4/22/2008	1278.86	40	13.92	0.359
N3-1	Florence	4/22/2008	1292.78	78.8	NA	NA
W-22	Alluvium/Residuum	5/15/2008	1276.65	16.5	2.76	0.117
OW-03	Fort Riley (Deep)	5/15/2008	1279.41	40	14.61	0.377
N3-1	Florence	5/15/2008	1294.02	78.8	NA	NA
W-22	Alluvium/Residuum	7/22/2008	1276.1	16.5	3.32	0.141
OW-03	Fort Riley (Deep)	7/22/2008	1279.42	40	13.19	0.340
N3-1	Florence	7/22/2008	1292.61	78.8	NA	NA
W-22	Alluvium/Residuum	8/27/2008	1275.99	16.5	2.93	0.125
OW-03	Fort Riley (Deep)	8/27/2008	1278.92	40	8.75	0.226
N3-1	Florence	8/27/2008	1287.67	78.8	NA	NA
W-22	Alluvium/Residuum	9/25/2008	1276.59	16.5	3.35	0.143
OW-03	Fort Riley (Deep)	9/25/2008	1279.94	40	8.78	0.226
N3-1	Florence	9/25/2008	1288.72	78.8	NA	NA
W-22	Alluvium/Residuum	10/23/2008	1276.21	16.5	3.57	0.152
OW-03	Fort Riley (Deep)	10/23/2008	1279.78	40	9.59	0.247
N3-1	Florence	10/23/2008	1289.37	78.8	NA	NA
W-22	Alluvium/Residuum	11/21/2008	1275.89	16.5	3.22	0.137
OW-03	Fort Riley (Deep)	11/21/2008	1279.11	40	9.58	0.247
N3-1	Florence	11/21/2008	1288.69	78.8	NA	NA
W-22	Alluvium/Residuum	12/30/2008	1276.24	16.5	2.63	0.112
OW-03	Fort Riley (Deep)	12/30/2008	1278.87	40	9.44	0.243
N3-1	Florence	12/30/2008	1288.31	78.8	NA	NA
W-22	Alluvium/Residuum	2/10/2009	1275.83	16.5	2.34	0.100
OW-03	Fort Riley (Deep)	2/10/2009	1278.17	40	9.18	0.237
N3-1	Florence	2/10/2009	1287.35	78.8	NA	NA

Table 2b

Clustered Well Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 5)

Well Designation	Screened Formation	Gauging Date	Groundwater Elevation, Feet, AMSL	Bottom of Screen, Feet, BGS	Head Difference*	Vertical Gradient, Feet/Foot (+ upward - downward)
W-01S	Alluvium/Residuum	1/23/2008	1274.74	17	1.3	0.059
OW-05	Fort Riley (Deep)	1/23/2008	1276.04	39	10.74	0.224
W-01D	Florence	1/23/2008	1286.78	87	NA	NA
W-01S	Alluvium/Residuum	2/14/2008	1275.21	17	0.87	0.040
OW-05	Fort Riley (Deep)	2/14/2008	1276.08	39	11.38	0.237
W-01D	Florence	2/14/2008	1287.46	87	NA	NA
W-01S	Alluvium/Residuum	2/28/2008	1275.81	17	0.04	0.002
OW-05	Fort Riley (Deep)	2/28/2008	1275.85	39	12.97	0.270
W-01D	Florence	2/28/2008	1288.82	87	NA	NA
W-01S	Alluvium/Residuum	3/25/2008	1275.96	17	1.18	0.054
OW-05	Fort Riley (Deep)	3/25/2008	1277.14	39	12.79	0.266
W-01D	Florence	3/25/2008	1289.93	87	NA	NA
W-01S	Alluvium/Residuum	4/22/2008	1275.47	17	1.68	0.076
OW-05	Fort Riley (Deep)	4/22/2008	1277.15	39	12.61	0.263
W-01D	Florence	4/22/2008	1289.76	87	NA	NA
W-01S	Alluvium/Residuum	5/15/2008	1276.32	17	1.61	0.073
OW-05	Fort Riley (Deep)	5/15/2008	1277.93	39	12.41	0.259
W-01D	Florence	5/15/2008	1290.34	87	NA	NA
W-01S	Alluvium/Residuum	6/28/2008	1280.73	17	-1.36	-0.062
OW-05	Fort Riley (Deep)	6/28/2008	1279.37	39	11.23	0.234
W-01D	Florence	6/28/2008	1290.6	87	NA	NA
W-01S	Alluvium/Residuum	7/22/2008	1274.88	17	3.04	0.138
OW-05	Fort Riley (Deep)	7/22/2008	1277.92	39	10.61	0.221
W-01D	Florence	7/22/2008	1288.53	87	NA	NA
W-01S	Alluvium/Residuum	8/27/2008	1273.39	17	3.71	0.169
OW-05	Fort Riley (Deep)	8/27/2008	1277.1	39	8.31	0.173
W-01D	Florence	8/27/2008	1285.41	87	NA	NA
W-01S	Alluvium/Residuum	9/25/2008	1275.2	17	3.1	0.141
OW-05	Fort Riley (Deep)	9/25/2008	1278.3	39	7.94	0.165
W-01D	Florence	9/25/2008	1286.24	87	NA	NA
W-01S	Alluvium/Residuum	10/23/2008	1275.39	17	1.64	0.075
OW-05	Fort Riley (Deep)	10/23/2008	1277.03	39	10.33	0.215
W-01D	Florence	10/23/2008	1287.36	87	NA	NA
W-01S	Alluvium/Residuum	11/21/2008	1274.92	17	1.77	0.080
OW-05	Fort Riley (Deep)	11/21/2008	1276.69	39	10.15	0.211
W-01D	Florence	11/21/2008	1286.84	87	NA	NA
W-01S	Alluvium/Residuum	12/30/2008	1275.06	17	1.26	0.057
OW-05	Fort Riley (Deep)	12/30/2008	1276.32	39	10.07	0.210
W-01D	Florence	12/30/2008	1286.39	87	NA	NA
W-01S	Alluvium/Residuum	2/10/2009	1274.56	17	1.29	0.059
OW-05	Fort Riley (Deep)	2/10/2009	1275.85	39	-0.35	-0.007
W-01D	Florence	2/10/2009	1275.5	87	NA	NA

Table 2b

Clustered Well Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 5)

Well Designation	Screened Formation	Gauging Date	Groundwater Elevation, Feet, AMSL	Bottom of Screen, Feet, BGS	Head Difference*	Vertical Gradient, Feet/Foot (+ upward - downward)
W-15S	Doyle	2/14/2008	1305.96	21	-9.57	-0.089
W-15D	Florence	2/14/2008	1296.39	129	NA	NA
W-15S	Doyle	2/10/2009	1305.86	21	-9.52	-0.088
W-15D	Florence	2/10/2009	1296.34	129	NA	NA
W-29S	Doyle	2/14/2008	1326.3	22.5	-4.98	-0.082
W-29D	Fort Riley (Deep)	2/14/2008	1321.32	83	NA	NA
W-29S	Doyle	2/10/2009	1325.26	22.5	-8.22	-0.136
W-29D	Fort Riley (Deep)	2/12/2009	1317.04	83	NA	NA
OW-16	Alluvium/Residuum	2/14/2008	1292.18	14	-0.3	-0.025
N2-4	Fort Riley	2/14/2008	1291.88	26	NA	NA
OW-16	Alluvium/Residuum	2/10/2009	1293.08	14	0.15	0.013
N2-4	Fort Riley	2/10/2009	1293.23	26	NA	NA
N5-3	Alluvium/Residuum	2/14/2008	1291.62	20	1.16	0.046
OW-06	Fort Riley	2/14/2008	1292.78	45	NA	NA
N5-3	Alluvium/Residuum	2/10/2009	1291.69	20	1.46	0.058
OW-06	Fort Riley	2/10/2009	1293.15	45	NA	NA
OW-31	Alluvium/Residuum	1/23/2008	1276.83	14.9	-0.19	-0.008
OW-04	Fort Riley (Deep)	1/23/2008	1276.64	38	NA	NA
OW-31	Alluvium/Residuum	2/14/2008	1276.8	14.9	-0.14	-0.006
OW-04	Fort Riley (Deep)	2/14/2008	1276.66	38	NA	NA
OW-31	Alluvium/Residuum	2/28/2008	1276.87	14.9	0.15	0.006
OW-04	Fort Riley (Deep)	2/28/2008	1277.02	38	NA	NA
OW-31	Alluvium/Residuum	3/25/2008	1276.86	14.9	0.05	0.002
OW-04	Fort Riley (Deep)	3/25/2008	1276.91	38	NA	NA
OW-31	Alluvium/Residuum	4/22/2008	1271.85	14.9	4.88	0.211
OW-04	Fort Riley (Deep)	4/22/2008	1276.73	38	NA	NA
OW-31	Alluvium/Residuum	5/15/2008	1277.01	14.9	0.01	0.000
OW-04	Fort Riley (Deep)	5/15/2008	1277.02	38	NA	NA
OW-31	Alluvium/Residuum	6/28/2008	1277.58	14.9	0.76	0.033
OW-04	Fort Riley (Deep)	6/28/2008	1278.34	38	NA	NA
OW-31	Alluvium/Residuum	7/22/2008	1276.99	14.9	-0.2	-0.009
OW-04	Fort Riley (Deep)	7/22/2008	1276.79	38	NA	NA
OW-31	Alluvium/Residuum	8/27/2008	1276.89	14.9	-0.2	-0.009
OW-04	Fort Riley (Deep)	8/27/2008	1276.69	38	NA	NA
OW-31	Alluvium/Residuum	9/25/2008	1276.93	14.9	0.07	0.003
OW-04	Fort Riley (Deep)	9/25/2008	1277	38	NA	NA

Table 2b

Clustered Well Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Well Designation	Screened Formation	Gauging Date	Groundwater Elevation, Feet, AMSL	Bottom of Screen, Feet, BGS	Head Difference*	Vertical Gradient, Feet/Foot (+ upward - downward)
OW-31	Alluvium/Residuum	10/23/2008	1276.9	14.9	0.12	0.005
OW-04	Fort Riley (Deep)	10/23/2008	1277.02	38	NA	NA
OW-31	Alluvium/Residuum	11/21/2008	1276.83	14.9	-0.1	-0.004
OW-04	Fort Riley (Deep)	11/21/2008	1276.73	38	NA	NA
OW-31	Alluvium/Residuum	12/30/2008	1276.83	14.9	-0.02	-0.001
OW-04	Fort Riley (Deep)	12/30/2008	1276.81	38	NA	NA
OW-31	Alluvium/Residuum	2/10/2009	1276.95	14.9	-0.48	-0.021
OW-04	Fort Riley (Deep)	2/10/2009	1276.47	38	NA	NA
TW-23S	Alluvium/Residuum	2/10/2009	1297.21	17.5	-2.56	-0.341
TW-23D	Fort Riley	2/10/2009	1294.65	25	NA	NA
TW-24S	Alluvium/Residuum	2/10/2009	1308.6	12.8	-0.45	-0.044
TW-24D	Fort Riley	2/10/2009	1308.15	23	NA	NA
TW-25S	Fort Riley	2/10/2009	1310.68	15	0.01	0.001
TW-25D	Fort Riley	2/10/2009	1310.69	29.82	NA	NA
TW-27S	Alluvium/Residuum	2/10/2009	1303.6	19.8	-0.68	-0.045
TW-27D	Fort Riley	2/10/2009	1302.92	34.99	NA	NA
TW-31S	Fort Riley	2/10/2009	1306.34	26.6	-0.03	-0.004
TW-31D	Fort Riley	2/10/2009	1306.31	34.94	NA	NA
TW-32S	Fort Riley	2/10/2009	1314.67	30.3	-21.46	-2.212
TW-32D	Fort Riley	2/10/2009	1293.21	40	NA	NA
TW-102S	Alluvium/Residuum	2/10/2009	1321.47	15	-2.98	-0.192
TW-102D	Fort Riley	2/10/2009	1318.49	30.5	NA	NA
TW-103S	Fort Riley	2/10/2009	1314.35	20.25	-1.88	-0.130
TW-103D	Fort Riley	2/10/2009	1312.47	34.74	NA	NA
TW-104S	Alluvium/Residuum	2/10/2009	1312.27	19.8	0.48	0.024
TW-104D	Fort Riley	2/10/2009	1312.75	39.82	NA	NA
TW-105S	Alluvium/Residuum	2/10/2009	Dry	15	NA	NA
TW-105D	Fort Riley	2/10/2009	1313.1	44.93	NA	NA
TW-106S	Alluvium/Residuum	2/10/2009	1316.98	10	0.13	0.006
TW-106D	Fort Riley	2/10/2009	1317.11	30	NA	NA

Table 2b

Clustered Well Data
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 5)

Well Designation	Screened Formation	Gauging Date	Groundwater Elevation, Feet, AMSL	Bottom of Screen, Feet, BGS	Head Difference*	Vertical Gradient, Feet/Foot (+ upward - downward)
TW-116S	Alluvium/Residuum	2/10/2009	1307.49	11	-0.12	-0.013
TW-116D	Fort Riley	2/10/2009	1307.37	19.92	NA	NA

Legend

*	Difference in groundwater head compared with data from clustered well screened in underlying aquifer.
AMSL	above mean sea level
NA	Not available
BGS	below ground surface

Table 3

Groundwater Monitoring Well Field Parameters
February 2008 Through February 2009
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

WELL ID	Date	pH	Temp (C)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	Purge Method (Sump, Peristaltic Pump or Bailer)
2008 Semi-annual Groundwater Sampling February 15-16, 2008								
OW-01	2/15/08	6.89	10.6	1061	0.7	25.1	5.7	Dedicated bladder pump
OW-02	2/16/08	6.95	8.20	1561	0.6	-85.1	24.3	Peristaltic pump and dedicated tubing
OW-03	2/16/08	7.53	11.80	1264	3.3	-101.2	10.6	Peristaltic pump and dedicated tubing
OW-04	2/15/08	6.94	11.50	1310	5.0	70.2	5.7	Peristaltic pump and dedicated tubing
OW-05	2/16/08	7.71	13.20	1231	4.6	-45.1	8.1	Peristaltic pump and dedicated tubing
OW-08	2/16/08	7.41	11.70	1017	0.5	-88.1	10.9	Peristaltic pump and dedicated tubing
OW-09	2/15/08	7.14	11.40	1023	0.2	-94.0	50.2	Dedicated bladder pump
OW-10	2/16/08	7.86	10.70	1509	0.7	-84.5	29.7	Peristaltic pump and dedicated tubing
OW-12	2/16/08	7.13	9.60	997	0.2	-92.1	40.5	Peristaltic pump and dedicated tubing
OW-14	2/15/08	7.68	12.20	748	0.5	-185.7	7.7	Peristaltic pump and dedicated tubing
OW-29	2/16/08	7.08	11.10	1299	3.1	-102.8	5.2	Peristaltic pump and dedicated tubing
OW-31	2/15/08	6.97	12.90	1468	0.6	-143.3	8.8	Dedicated bladder pump
OW-32	2/15/08	6.82	9.60	1261	3.0	-105.7	3.0	Peristaltic pump and dedicated tubing
OW-37	2/15/08	6.90	12.90	1756	0.3	-109.5	12.0	Dedicated bladder pump
OW-39	2/16/08	7.96	11.10	626	2.0	56.4	8.7	Peristaltic pump and dedicated tubing
W-01S	2/16/08	6.92	10.50	1424	0.6	18.7	46.0	Peristaltic pump and dedicated tubing
W-22	2/16/08	6.96	10.90	1116	3.5	-76.8	13.6	Peristaltic pump and dedicated tubing
W-24	2/15/08	7.00	7.20	890	0.5	-117.9	5.8	Dedicated bladder pump
N2-4	2/15/08	7.53	13.10	1357	0.7	-106.7	7.4	Peristaltic pump and dedicated tubing
N3-2	2/15/08	6.95	8.70	1257	2.5	-92.7	18.5	Peristaltic pump and dedicated tubing
N3-3	2/15/08	7.30	11.90	1273	0.8	-101.1	17.1	Peristaltic pump and dedicated tubing
N4-1	2/16/08	7.70	11.90	827	2.7	6.0	4.3	Peristaltic pump and dedicated tubing
OW-13	2/15/08	Not Sampled - LNAPL						
OW-24	2/15/08	Not Sampled - LNAPL						
OW-25	2/15/08	Not Sampled - LNAPL						
N6-1	2/15/08	Not Sampled - LNAPL						

Table 3

Groundwater Monitoring Well Field Parameters
February 2008 Through February 2009
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

WELL ID	Date	pH	Temp (C)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	Purge Method (Sump, Peristaltic Pump or Bailer)
Phase III Investigation Groundwater Sampling February 18 - 22, 2008								
TW-03	2/18/08	6.78	12.10	901	1.1	-48.9	40.7	Peristaltic pump and dedicated tubing
TW-05	2/19/08	7.37	9.50	1914	0.6	34.1	>200	Peristaltic pump and dedicated tubing
TW-07	2/18/08	7.97	11.90	617	0.8	-29.7	17.4	Peristaltic pump and dedicated tubing
TW-10	2/19/08	7.52	11.70	1222	1.2	-35.3	11.1	Peristaltic pump and dedicated tubing
TW-11	2/19/08	7.65	13.40	782	0.9	36.1	90	Peristaltic pump and dedicated tubing
TW-12	2/18/08	7.23	13.00	947	1.7	-9.5	47.6	Peristaltic pump and dedicated tubing
TW-13	2/19/08	7.56	11.20	1903	0.7	-22.3	24	Peristaltic pump and dedicated tubing
TW-14	2/19/08	7.49	12.50	702	0.5	-60.7	144	Peristaltic pump and dedicated tubing
TW-15	2/19/08	7.44	12.50	3000	1.4	29.7	56.4	Peristaltic pump and dedicated tubing
TW-16	2/19/08	7.37	12.20	1395	0.6	-61.5	42.1	Peristaltic pump and dedicated tubing
TW-17	2/18/08	6.92	10.50	1423	3.8	20.4	44.6	Peristaltic pump and dedicated tubing
TW-18	2/19/08	7.20	11.30	1011	1.3	49.1	36.5	Peristaltic pump and dedicated tubing
TW-19	2/18/08	7.48	10.00	1254	0.7	-70.2	60.9	Peristaltic pump and dedicated tubing
TW-20	2/18/08	6.86	12.60	862	2.7	-2.2	19.8	Peristaltic pump and dedicated tubing
TW-21	2/18/08	6.96	11.10	1888	1.1	-29.8	8.1	Peristaltic pump and dedicated tubing
TW-22	2/19/08	7.40	11.50	3748	2.3	57.7	11.3	Peristaltic pump and dedicated tubing
TW-24	2/19/08	7.03	10.20	2467	6.3	143.5	8.6	Peristaltic pump and dedicated tubing
TW-25	2/18/08	7.14	11.50	1387	2.7	157.4	8.8	Peristaltic pump and dedicated tubing
TW-27	2/19/08	6.88	12.00	2193	2.7	-35.5	19.8	Peristaltic pump and dedicated tubing
TW-29	2/18/08	6.90	9.80	2173	1.1	-88.0	9.8	Peristaltic pump and dedicated tubing
TW-31	2/19/08	7.10	12.60	2294	2.0	-30.2	12.9	Peristaltic pump and dedicated tubing
TW-32	2/20/08	7.68	10.10	1333	0.9	-31.5	>200	Peristaltic pump and dedicated tubing
TW-34	2/22/08	7.63	10.50	1137	2.4	7.9	22.1	Peristaltic pump and dedicated tubing
TW-35	2/18/08	7.26	12.90	1574	3.7	56.7	17.5	Peristaltic pump and dedicated tubing
TW-38	2/18/08	7.29	13.60	2830	1.9	87.1	6.9	Peristaltic pump and dedicated tubing
TW-39	2/20/08	7.6	9.20	3010	2.2	55.9	>200	Peristaltic pump and dedicated tubing
TW-40	2/22/08	7.46	11.10	2750	1.5	-33.1	71.9	Peristaltic pump and dedicated tubing
TW-41	2/22/08	7.45	10.40	2670	0.5	2.7	>200	Peristaltic pump and dedicated tubing

Table 3

Groundwater Monitoring Well Field Parameters
February 2008 Through February 2009
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

WELL ID	Date	pH	Temp (C)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	Purge Method (Sump, Peristaltic Pump or Bailer)
TW-42	2/22/08	7.39	11.40	1458	1.0	-69.7	>200	Peristaltic pump and dedicated tubing
TW-43	2/22/08	7.47	10.00	955	0.8	-27.7	48.4	Peristaltic pump and dedicated tubing
TW-45	2/20/08	6.92	7.40	923	0.1	-75.2	148	Peristaltic pump and dedicated tubing
TW-46	2/20/08	7.34	7.20	1680	1.6	-58.6	18.3	Peristaltic pump and dedicated tubing
TW-47	2/20/08	7.35	4.10	1197	0.3	-68.2	29.8	Peristaltic pump and dedicated tubing
TW-48	2/18/08	7.17	10.70	987	4.1	-19.8	18.1	Peristaltic pump and dedicated tubing
TW-51	2/22/08	7.43	4.09	1143	0.8	-99.4	18.7	Peristaltic pump and dedicated tubing
TW-52	2/22/08	7.32	10.40	782	0.9	-85.2	6.3	Peristaltic pump and dedicated tubing
TW-53	2/23/08	7.03	9.20	1086	1.8	-23.3	12	Peristaltic pump and dedicated tubing
TW-55	2/22/08	7.38	9.50	3764	0.8	52.6	4.8	Peristaltic pump and dedicated tubing
TW-56	2/18/08	7.27	11.50	626	3.4	-39.7	117	Peristaltic pump and dedicated tubing
TW-58	2/18/08	7.08	12.50	653	3.3	-39.0	30.5	Peristaltic pump and dedicated tubing
TW-60	2/18/08	7.07	9.70	1177	2.9	-53.2	13.1	Peristaltic pump and dedicated tubing
TW-63	2/19/08	7.22	22.40	1210	4.9	-56.0	41.2	Peristaltic pump and dedicated tubing
TW-64	2/18/08	6.85	11.00	2270	4.1	-81.8	115	Peristaltic pump and dedicated tubing
TW-65	2/18/08	7.06	11.40	779	2.7	-58.2	23.2	Peristaltic pump and dedicated tubing
TW-67	2/19/08	6.84	7.20	7300	5.0	-39.0	14	Peristaltic pump and dedicated tubing
TW-69	2/18/08	6.92	13.20	1121	3.2	34.5	15.7	Peristaltic pump and dedicated tubing
TW-73	2/20/08	7.72	6.60	554	2.3	75.6	26.2	Peristaltic pump and dedicated tubing
TW-74	2/22/08	7.48	10.90	1025	4.8	105.4	19.8	Peristaltic pump and dedicated tubing
TW-75	2/22/08	7.24	11.10	782	0.9	42.1	41.6	Peristaltic pump and dedicated tubing
TW-76	2/22/08	7.10	11.20	713	0.8	-3.4	60.3	Peristaltic pump and dedicated tubing
SB-08	2/22/08	7.26	6.20	927	1.7	-61.8	11.8	Peristaltic pump and dedicated tubing
SB-09	2/19/08	6.81	11.10	1493	3.5	7.6	35.2	Peristaltic pump and dedicated tubing
SB-11	2/19/08	7.48	9.60	979	3.6	-14.9	14.8	Peristaltic pump and dedicated tubing
SB-17	2/20/08	6.97	11.00	1916	3.6	-50.1	12.8	Peristaltic pump and dedicated tubing
SB-30	2/19/08	7.97	8.80	1072	3.6	39.0	19.6	Peristaltic pump and dedicated tubing
SB-36	2/19/08	7.02	10.90	2271	1.7	-46.2	98.2	Peristaltic pump and dedicated tubing
SB-37	2/19/08	7.68	7.70	2051	2.3	-111.2	14.3	Peristaltic pump and dedicated tubing

Table 3

Groundwater Monitoring Well Field Parameters
February 2008 Through February 2009
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

WELL ID	Date	pH	Temp (C)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	Purge Method (Sump, Peristaltic Pump or Bailer)
SB-38	2/19/08	7.03	12.60	1206	4.4	-28.9	12.6	Peristaltic pump and dedicated tubing
N4-2	2/20/08	7.27	10.80	2370	4.2	-4.8	9.5	Peristaltic pump and dedicated tubing
N5-1	2/22/08	7.53	14.00	1182	2.5	98.9	94.9	Peristaltic pump and dedicated tubing
N5-2	2/20/08	7.62	10.70	1815	2.1	69.6	50.9	Peristaltic pump and dedicated tubing
N5-3	2/20/08	7.70	9.80	689	0.6	-43.7	133	Peristaltic pump and dedicated tubing
OW-23T	2/20/08	7.15	9.80	2140	4.6	-37.2	10.7	Peristaltic pump and dedicated tubing
OW-26	2/20/08	7.71	10.30	1095	2.1	-53.2	40.9	Peristaltic pump and dedicated tubing
W-16S	2/20/08	7.48	13.20	1523	1.2	-38.4	19.4	Peristaltic pump and dedicated tubing
W-26	2/19/08	7.73	8.50	949	2.1	11.9	16.9	Peristaltic pump and dedicated tubing
FINA/MW-38	2/20/08	8.15	8.50	1388	2.9	49.6	11	Peristaltic pump and dedicated tubing
Phase III Supplemental Investigation Groundwater Sampling, July 2, 2008								
TW-81	7/2/08	7.20	15.78	1910	4.98	-89.0	1245	Peristaltic pump and dedicated tubing
TW-82	7/2/08	7.20	13.82	1810	3.47	-125.0		Peristaltic pump and dedicated tubing
Phase III Supplemental Investigation Groundwater Sampling, November 18-19, 2008								
TW-111	11/18/08	7.10	14.71	1728	6.22	-39.8	f. clear	Peristaltic pump and dedicated tubing
TW-112	11/18/08	6.84	14.01	1496	2.32	-87.8	clear	Peristaltic pump and dedicated tubing
TW-89	11/19/08	7.12	15.08	752	7.70	-12.7	clear	Peristaltic pump and dedicated tubing
TW-90	11/19/08	7.00	15.92	894	2.03	-38.9	clear	Peristaltic pump and dedicated tubing
TW-91	11/19/08	7.01	16.12	1147	2.40	-44.9	clear	Peristaltic pump and dedicated tubing
Phase III Supplemental Investigation Groundwater Sampling, December 17, 2008								
TW-94	12/17/08	6.54	9.66	1459	7.99	-24.5	clear	Peristaltic pump and dedicated tubing
TW-96	12/17/08	6.86	6.44	3587	10.40	-19.4	clear	Peristaltic pump and dedicated tubing
Phase III Supplemental Investigation Groundwater Sampling, January 20-22, 2009								
TW-114	1/20/09	7.26	10.00	1762	1.88	-8.6	f. clear	Peristaltic pump and dedicated tubing
TW-113	1/20/09	6.07	1.55	1791	1.02	-36.5	f. clear	Peristaltic pump and dedicated tubing
TW-108	1/20/09	6.04	14.40	1505	0.75	-31.9	clear	Peristaltic pump and dedicated tubing
TW-107	1/20/09	6.44	13.12	1404	3.51	-33.9	clear	Peristaltic pump and dedicated tubing
TW-109	1/20/09	6.40	12.65	1614	4.30	-39.0	clear	Peristaltic pump and dedicated tubing
N2-4	1/21/09	6.20	11.06	1654	1.17	-44.1	clear	Peristaltic pump and dedicated tubing

Table 3

Groundwater Monitoring Well Field Parameters
February 2008 Through February 2009
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

WELL ID	Date	pH	Temp (C)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	Purge Method (Sump, Peristaltic Pump or Bailer)
OW-13	1/21/09	6.05	13.76	828	1.14	-41.4	clear	Peristaltic pump and dedicated tubing
N4-1	1/21/09	6.28	14.06	921	1.69	-37.2	clear	Peristaltic pump and dedicated tubing
TW-36	1/21/09	5.96	14.65	1397	0.40	-40.1	clear	Peristaltic pump and dedicated tubing
TW-79	1/22/09	5.80	11.70	1890	1.61	-157.3	clear	Peristaltic pump and dedicated tubing
N4-2	1/22/09	5.73	14.00	2766	0.69	-99.8	clear	Peristaltic pump and dedicated tubing
Phase III Supplemental Investigation Groundwater Sampling, February 11-25, 2009								
TW-27D	2/11/09	7.25	13.03	1221	0.71	114.0	f. clear	Peristaltic pump and dedicated tubing
TW-102S	2/11/09	7.00	9.51	1137	0.80	53.2	clear	Peristaltic pump and dedicated tubing
TW-125	2/11/09	7.16	14.06	882	2.80	58.4	clear	Peristaltic pump and dedicated tubing
TW-118	2/11/09	6.88	15.26	891	0.23	43.1	clear	Peristaltic pump and dedicated tubing
TW-110	2/11/09	7.19	13.67	1107	0.63	82.8	clear	Peristaltic pump and dedicated tubing
TW-102D	2/11/09	6.87	14.12	2170	0.38	76.8	clear	Peristaltic pump and dedicated tubing
TW-100	2/11/09	7.03	12.50	1559	1.02	149.5	clear	Peristaltic pump and dedicated tubing
TW-94	2/11/09	6.12	8.67	1490	0.90	-5.1	clear	Peristaltic pump and dedicated tubing
TW-126	2/12/09	6.95	11.21	1306	0.76	32.3	clear	Peristaltic pump and dedicated tubing
TW-124	2/12/09	7.07	10.92	1420	1.29	26.3	clear	Peristaltic pump and dedicated tubing
TW-123	2/12/09	6.91	13.62	1210	0.50	-3.4	clear	Peristaltic pump and dedicated tubing
TW-101	2/12/09	6.89	11.67	1686	2.20	13.1	clear	Peristaltic pump and dedicated tubing
TW-115	2/12/09	6.83	11.17	2018	6.30	132.9	clear	Peristaltic pump and dedicated tubing
TW-83	2/12/09	6.77	12.22	690	0.88	-22.0	clear	Peristaltic pump and dedicated tubing
W-01S	2/12/09	6.90	13.96	1153	0.86	14.1	clear	Peristaltic pump and dedicated tubing
W-22	2/13/09	6.80	15.15	1190	0.89	-26.3	clear	Peristaltic pump and dedicated tubing
TW-120	2/13/09	7.13	15.52	934	1.11	97.9	clear	Peristaltic pump and dedicated tubing
TW-99	2/13/09	7.06	11.09	1263	1.52	47.3	clear	Peristaltic pump and dedicated tubing
TW-105D	2/17/09	7.14	16.27	1736	0.74	130.9	clear	Peristaltic pump and dedicated tubing
TW-104D	2/17/09	7.27	14.80	1497	0.68	152.9	clear	Peristaltic pump and dedicated tubing
TW-88	2/17/09	6.86	14.48	796	0.81	40.7	clear	Peristaltic pump and dedicated tubing
TW-84	2/17/09	7.06	12.71	1022	2.53	150.9	f. clear	Peristaltic pump and dedicated tubing
TW-31D	2/17/09	7.27	15.85	1143	1.13	117.2	clear	Peristaltic pump and dedicated tubing

Table 3

Groundwater Monitoring Well Field Parameters
February 2008 Through February 2009
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

WELL ID	Date	pH	Temp (C)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	Purge Method (Sump, Peristaltic Pump or Bailer)
TW-25D	2/17/09	6.92	13.40	7447	0.95	196.3	clear	Peristaltic pump and dedicated tubing
TW-131	2/17/09	7.20	12.06	685	0.65	37.3	clear	Peristaltic pump and dedicated tubing
TW-129	2/17/09	6.94	11.57	1116	0.64	22.4	clear	Peristaltic pump and dedicated tubing
TW-130	2/18/09	6.90	11.66	1398	1.79	19.9	clear	Peristaltic pump and dedicated tubing
TW-106S	2/18/09	6.96	9.60	2105	2.06	15.4	clear	Peristaltic pump and dedicated tubing
TW-98	2/18/09	6.53	10.41	757	0.81	-49.0	clear	Peristaltic pump and dedicated tubing
TW-97	2/18/09	6.63	11.20	1129	0.81	-41.1	clear	Peristaltic pump and dedicated tubing
TW-92	2/18/09	6.82	13.51	1255	0.95	37.6	clear	Peristaltic pump and dedicated tubing
TW-96	2/18/09	6.93	8.80	3070	0.86	-18.6	clear	Peristaltic pump and dedicated tubing
TW-32B	2/18/09	7.32	13.69	1772	2.44	110.8	f. cloudy	Peristaltic pump and dedicated tubing
TW-24D	2/18/09	7.10	13.29	1334	0.59	-73.4	clear	Peristaltic pump and dedicated tubing
OW-32	2/19/09	6.92	13.00	1498	0.51	-88.9	clear	Peristaltic pump and dedicated tubing
OW-31	2/19/09	6.97	13.35	1130	0.38	-96.3	clear	Peristaltic pump and dedicated tubing
OW-30	2/19/09	6.80	10.93	1781	1.26	-71.6	f. clear	Peristaltic pump and dedicated tubing
OW-29	2/19/09	6.90	11.05	1163	0.91	-81.5	f. clear	Peristaltic pump and dedicated tubing
N3-3	2/19/09	6.83	14.39	1182	1.49	-24.1	clear	Peristaltic pump and dedicated tubing
N3-2	2/19/09	6.72	15.52	1608	2.42	-12.6	sl. cloudy	Peristaltic pump and dedicated tubing
ES-03	2/19/09	6.89	15.52	1132	0.31	-42.2	clear	Peristaltic pump and dedicated tubing
TW-116B	2/19/09	6.80	12.00	1266	1.09	-25.7	clear	Peristaltic pump and dedicated tubing
OW-33	2/19/09	6.76	12.86	1394	0.51	-51.4	clear	Peristaltic pump and dedicated tubing
TW-106D	2/20/09	Not Sampled - LNAPL						
TW-87	2/20/09	6.72	11.08	779	0.83	-39.9	clear	Peristaltic pump and dedicated tubing
TW-23D	2/20/09	7.31	14.22	1507	3.65	43.1	clear	Peristaltic pump and dedicated tubing
SB-37	2/20/09	6.96	11.11	1600	0.88	-40.9	clear	Peristaltic pump and dedicated tubing
SB-11	2/20/09	7.14	9.48	1321	0.85	30.1	clear	Peristaltic pump and dedicated tubing
OW-36	2/20/09	7.01	15.90	962	0.34	-52.2	clear	Peristaltic pump and dedicated tubing
TW-119	2/20/09	Not Sampled - LNAPL						
TW-116S	2/20/09	6.96	13.06	1475	5.12	123.3	clear	Peristaltic pump and dedicated tubing
OW-27T	2/23/09	7.03	16.02	2124	0.25	-67.1	clear	Peristaltic pump and dedicated tubing

Table 3

Groundwater Monitoring Well Field Parameters
February 2008 Through February 2009
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

WELL ID	Date	pH	Temp (C)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (ntu)	Purge Method (Sump, Peristaltic Pump or Bailer)
OW-28T	2/23/09	6.85	15.07	1802	0.45	-86.1	clear	Peristaltic pump and dedicated tubing
TW-75	2/23/09	6.80	11.41	1270	3.56	161.7	clear	Peristaltic pump and dedicated tubing
TW-78	2/23/09	6.92	14.19	1426	0.47	-3.2	clear	Peristaltic pump and dedicated tubing
TW-56	2/24/09	7.23	15.34	698	0.49	86.0	clear	Peristaltic pump and dedicated tubing
SB-38	2/24/09	7.02	15.46	1257	0.36	74.6	clear	Peristaltic pump and dedicated tubing
OW-35	2/24/09	6.85	14.23	1829	0.95	-37.0	clear	Peristaltic pump and dedicated tubing
OW-21	2/24/09	6.85	9.88	1166	1.40	-45.0	clear	Peristaltic pump and dedicated tubing
N3-4	2/24/09	6.53	13.81	2412	0.37	70.8	clear	Peristaltic pump and dedicated tubing
TW-108	2/25/09	6.64	15.97	1391	0.39	-38.3	clear	Peristaltic pump and dedicated tubing
TW-107	2/25/09	6.92	16.42	1539	1.30	-17.5	clear	Peristaltic pump and dedicated tubing
TW-79	2/25/09	6.92	17.30	1945	0.91	-8.7	clear	Peristaltic pump and dedicated tubing
TW-36	2/25/09	6.65	16.71	1196	0.35	-41.9	clear	Peristaltic pump and dedicated tubing

DO (mg/L) = Dissolved oxygen in milligrams per liter
ntu = nephelometric turbity units
ORP (mV) = Oxidation reduction potential in millivolts
Conductivity (uS/cm) = Specific conductivity in microSiemens per centimeter
Temp (C) = Temperature in degrees Celsius

Table 4a

River/Creek Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 4)

	Location Identification	**SED-01**	**SED-02**	**SED-03**	**SED-03-50 (DUP of SED-03)**	**SED-04**
	Source Area	**WBWR**	**WBWR**	**WBWR**	**WBWR**	**WBWR**
	Laboratory Sample Identification	**A7C42903**	**A7C42904**	**A7C42909**	**A7C42910**	**A7C42908**
Analyte/Methods (Units)	**Date Collected**	**10/24/2007**	**10/24/2007**	**10/25/2007**	**10/25/2007**	**10/25/2007**
	Sediment Standard TEC [(A)]					
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	NA	<5	<27	<7	<7	<4
1,1-Dichloroethane	NA	<5	<27	<7	<7	<4
1,2-Dibromoethane (Ethylene dibromide)	NA	<5	<27	<7	<7	<4
1,2-Dichlorobenzene	NA	<5	<27	<7	<7	<4
1,2-Dichloroethane	NA	<5	<27	<7	<7	<4
1,4-Dioxane (p-dioxane)	NA	<25	<130	<33	<34	<22
Benzene	NA	<5	<27	**9**	<7	<4
Carbon disulfide	NA	<5	<27	<7	<7	<4
Chlorobenzene	NA	<5	<27	<7	<7	<4
Chloroform	NA	<5	<27	<7	<7	<4
Ethylbenzene	NA	<5	<27	**1J**	<7	<4
Methyl ethyl ketone (2-Butanone)	NA	<5	<27	<7	<7	<4
Methyl tert-butyl ether (tert-butyl methyl ether)	NA	<5	<27	<7	<7	<4
Styrene	NA	<5	<27	<7	<7	<4
Tetrachloroethene	NA	<5	<27	<7	<7	<4
Toluene	NA	<5	<27	**1J**	<7	<4
Trichloroethene	NA	<5	<27	<7	<7	<4
Xylenes, total	NA	<5	<27	**13**	<7	<4

(µg/kg) micrograms per kilogram

(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).

TEC Consensus-Based Threshold Effect Concentration

Bold Bolded result indicates positively identified compound.

J The analyte was positively identified, the quantitation is an estimation.

NA Not applicable

DUP Duplicate sample

Table 4a

River/Creek Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 4)

	Location Identification	**SED-05A**	**SED-05B**	**SED-05C**
	Source Area	**WBWR Background**	**WBWR Background**	**WBWR Background**
	Laboratory Sample Identification	**A8020501/A7C42905**	**A8020502/A7C42906**	**A8020503**
Analyte/Methods (Units)	**Date Collected**	**1/7/2008-10/23/2007**	**1/7/2008-10/23/2008**	**1/7/2008**
	Sediment Standard TEC [(A)]			
Volatile Organic Compounds (µg/kg)				
1,1,1-Trichloroethane	NA	<65	<50	<36
1,1-Dichloroethane	NA	<65	<50	<36
1,2-Dibromoethane (Ethylene dibromide)	NA	<65	<50	<36
1,2-Dichlorobenzene	NA	<65	<50	<36
1,2-Dichloroethane	NA	<65	<50	<36
1,4-Dioxane (p-dioxane)	NA	<320	<250	<180
Benzene	NA	<65	<50	<36
Carbon disulfide	NA	<65	<50	<36
Chlorobenzene	NA	<65	<50	<36
Chloroform	NA	<65	<50	<36
Ethylbenzene	NA	<65	<50	<36
Methyl ethyl ketone (2-Butanone)	NA	**17J**	**17J**	<36
Methyl tert-butyl ether (tert-butyl methyl ether)	NA	<65	<50	<36
Styrene	NA	<65	<50	<36
Tetrachloroethene	NA	<65	<50	<36
Toluene	NA	<65	<50	<36
Trichloroethene	NA	<65	<50	<36
Xylenes, total	NA	<65	<50	<36

(µg/kg) micrograms per kilogram

(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).

TEC Consensus-Based Threshold Effect Concentration

Bold Bolded result indicates positively identified compound.

J The analyte was positively identified, the quantitation is an estimation.

NA Not applicable

DUP Duplicate sample

Table 4a

River/Creek Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 4)

	Location Identification	**SED-05D**	**SED-05E**	**SED-10**	**SED-11**
	Source Area	**WBWR Background**	**WBWR Background**	**STF Creek**	**STF Creek**
	Laboratory Sample Identification	**A7C42901**	**A7C42902**	**A8020505**	**A8020504/A7C51502**
Analyte/Methods (Units)	**Date Collected**	**10/24/2007**	**10/24/2007**	**1/7/2008**	**1/7/2008-10/26/2007**
	Sediment Standard TEC [(A)]				
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	NA	<6	<5	<74	<220
1,1-Dichloroethane	NA	<6	<5	<74	<220
1,2-Dibromoethane (Ethylene dibromide)	NA	<6	<5	<74	<220
1,2-Dichlorobenzene	NA	<6	<5	<74	<220
1,2-Dichloroethane	NA	<6	<5	<74	<220
1,4-Dioxane (p-dioxane)	NA	<28	<24	<370	<1100
Benzene	NA	<6	<5	<74	**1900**
Carbon disulfide	NA	<6	<5	<74	**2J**
Chlorobenzene	NA	<6	<5	<74	<220
Chloroform	NA	<6	<5	<74	<220
Ethylbenzene	NA	<6	<5	<74	**310**
Methyl ethyl ketone (2-Butanone)	NA	**9**	**6**	<74	<220
Methyl tert-butyl ether (tert-butyl methyl ether)	NA	<6	<5	<74	**27J**
Styrene	NA	<6	<5	<74	<220
Tetrachloroethene	NA	<6	<5	<74	<220
Toluene	NA	<6	<5	<74	<220
Trichloroethene	NA	<6	<5	<74	<220
Xylenes, total	NA	<6	<5	<74	**550**

(µg/kg) micrograms per kilogram

(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).

TEC Consensus-Based Threshold Effect Concentration

Bold Bolded result indicates positively identified compound.

J The analyte was positively identified, the quantitation is an estimation.

NA Not applicable

DUP Duplicate sample

Table 4a

River/Creek Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 4)

	Location Identification	**SED-12**	**SED-12-50 (DUP of SED-12)**	**SED-13**	**STF-CR-E (0-6**	**STF-CR-W (0-6)**
	Source Area	**STF Creek**	**STF Creek**	**AHA Spring**	**STF Creek**	**STF Creek**
	Laboratory Sample Identification	**A8020506**	**A8020507**	**A7C51505**	**A8E53202**	**A8E56201**
Analyte/Methods (Units)	**Date Collected**	**1/7/2008**	**1/7/2008**	**10/29/2007**	**11/13/2008**	**11/13/2008**
	Sediment Standard TEC [(A)]					
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	NA	<100	<52	<5	<45	<64
1,1-Dichloroethane	NA	<100	<52	<5	<45	<64
1,2-Dibromoethane (Ethylene dibromide)	NA	<100	<52	<5	<45	<64
1,2-Dichlorobenzene	NA	<100	<52	<5	<45	<64
1,2-Dichloroethane	NA	<100	<52	<5	<45	<64
1,4-Dioxane (p-dioxane)	NA	<500	<260	<25	<540	<770
Benzene	NA	<100	<52	<5	<45	<64
Carbon disulfide	NA	<100	<52	<5	<45	<64
Chlorobenzene	NA	<100	<52	<5	<45	<64
Chloroform	NA	<100	<52	<5	<45	<64
Ethylbenzene	NA	<100	<52	<5	<45	<64
Methyl ethyl ketone (2-Butanone)	NA	<100	<52	<5	<91	<130
Methyl tert-butyl ether (tert-butyl methyl ether)	NA	<100	<52	<5	<45	<64
Styrene	NA	<100	<52	<5	<45	<64
Tetrachloroethene	NA	<100	<52	<5	<45	<64
Toluene	NA	<100	<52	<5	<45	<64
Trichloroethene	NA	<100	<52	<5	<45	<64
Xylenes, total	NA	<100	<52	<5	<45	<64

(µg/kg) micrograms per kilogram
(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).
TEC Consensus-Based Threshold Effect Concentration
Bold Bolded result indicates positively identified compound.
J The analyte was positively identified, the quantitation is an estimation.
NA Not applicable
DUP Duplicate sample

Table 4b

River/Creek Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 8)

	Location Identification	**SED-01**	**SED-02**	**SED-03**	**SED-03-50 (DUP of SED-03)**	**SED-04**
	Source Area	**WBWR**	**WBWR**	**WBWR**	**WBWR**	**WBWR**
	Laboratory Sample Identification	**A7C42903RE**	**A7C42904RE**	**A7C42909RE**	**A7C42910RE**	**A7C42908RE**
	Date Collected	**10/24/2007**	**10/24/2007**	**10/25/2007**	**10/25/2007**	**10/25/2007**
Analyte/Methods (Units)						
	Sediment Standard TEC [(A)]					
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	NA	<240	<250	<230	<250	<280
1,3-Dichlorobenzene	NA	<240	<250	<230	<250	<280
1,4-Dichlorobenzene	NA	<240	<250	<230	<250	<280
2,4-Dimethylphenol	NA	<150	<150	<140	<150	<170
2,4-Dinitrophenol	NA	<150	<150	<140	<150	<170
2-Methylphenol (o-cresol)	NA	<150	<150	<140	<150	<170
3+4-Methylphenol (m&p-cresols)	NA	<150	<150	<140	<150	<170
4-Nitrophenol	NA	<150	<150	<140	<150	<170
Acenaphthene	NA	<150	<150	<140	<150	<170
Anthracene	57.2	<150	<150	<140	<150	<170
Benzo(a)anthracene	108	<150	<150	**13J**	<150	**20J**
Benzo(a)pyrene	150	<150	<150	**60J**	<150	<170
Benzo(b)fluoranthene	NA	<150	<150	**15J**	<150	<170
Benzo(k)fluoranthene	NA	<150	<150	<140	<150	<170
Bis(2-ethylhexyl)phthalate	NA	<150	<150	<140	**110J**	<170
Chrysene	166	<150	<150	**17J**	<150	<170
Dibenzo(a,h)anthracene	33.0	<150	<150	**9J**	<150	<170
Diethyl phthalate	NA	<150	<150	**13J**	<150	<170
Dimethyl phthalate	NA	<150	<150	<140	<150	<170
Di-n-butylphthalate	NA	<150	<150	<140	<150	<170
Fluoranthene	423	<150	<150	**12J**	<150	<170
Fluorene	77.4	<150	<150	**12J**	<150	<170
Indeno(1,2,3-cd)pyrene	NA	<150	<150	**16J**	<150	<170
Naphthalene	176	<150	<150	**32J**	**25J**	<170

Table 4b

River/Creek Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 8)

	Location Identification	**SED-01**	**SED-02**	**SED-03**	**SED-03-50 (DUP of SED-03)**	**SED-04**
	Source Area	**WBWR**	**WBWR**	**WBWR**	**WBWR**	**WBWR**
	Laboratory Sample Identification	**A7C42903RE**	**A7C42904RE**	**A7C42909RE**	**A7C42910RE**	**A7C42908RE**
	Date Collected	**10/24/2007**	**10/24/2007**	**10/25/2007**	**10/25/2007**	**10/25/2007**
Analyte/Methods (Units)	**Sediment Standard TEC [(A)]**					
Semivolatile Organic Compounds (µg/kg)						
Phenanthrene	204	<150	**25J**	**14J**	<150	<170
Phenol	NA	<150	<150	<140	<150	<170
Pyrene	195	<150	<150	**10J**	<150	**55J**
Pyridine	NA	<150	<150	<140	<150	<170
Quinoline	NA	<150	<150	<140	<150	<170

(µg/kg) micrograms per kilogram
(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).
TEC Consensus-Based Threshold Effect Concentration
Bold Bolded result indicates positively identified compound.
Shaded Shaded result indicates result greater than or equal to the Sediment Standard
NA Not applicable
J The analyte was positively identified, the quantitation is an estimation.
B The analyte was found in an associated blank, as well as in the sample.
DUP Duplicate sample

Table 4b

River/Creek Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 8)

	Location Identification	**SED-05A**	**SED-05B**	**SED-05C**	**SED-05D**	**SED-05E**
	Source Area	**WBWR Background**	**WBWR Background**	**WBWR Background**	**WBWR Background**	**WBWR Background**
	Laboratory Sample Identification	**A7C42906RE**	**A7C42906RE**	**A7C42907RE**	**A7C42901RE**	**A7C42902RE**
	Date Collected	**10/23/2007**	**10/23/2007**	**10/23/2007**	**10/24/2007**	**10/24/2007**
Analyte/Methods (Units)						
	Sediment Standard TEC [(A)]					
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	NA	<210	<220	<250	<230	<230
1,3-Dichlorobenzene	NA	<210	<220	<250	<230	<230
1,4-Dichlorobenzene	NA	<210	<220	<250	<230	<230
2,4-Dimethylphenol	NA	<130	<130	<150	<140	<140
2,4-Dinitrophenol	NA	<130	<130	<150	<140	<140
2-Methylphenol (o-cresol)	NA	<130	<130	<150	<140	<140
3+4-Methylphenol (m&p-cresols)	NA	<130	<130	<150	<140	<140
4-Nitrophenol	NA	<130	<130	<150	<140	<140
Acenaphthene	NA	<130	<130	<150	<140	<140
Anthracene	57.2	<130	<130	<150	<140	<140
Benzo(a)anthracene	108	<130	<130	<150	**10J**	<140
Benzo(a)pyrene	150	<130	<130	<150	<140	<140
Benzo(b)fluoranthene	NA	<130	<130	<150	<140	<140
Benzo(k)fluoranthene	NA	<130	<130	<150	<140	<140
Bis(2-ethylhexyl)phthalate	NA	<130	<130	<150	<140	<140
Chrysene	166	<130	<130	<150	<140	<140
Dibenzo(a,h)anthracene	33.0	<130	<130	<150	<140	<140
Diethyl phthalate	NA	<130	<130	<150	<140	<140
Dimethyl phthalate	NA	<130	<130	<150	<140	<140
Di-n-butylphthalate	NA	<130	<130	<150	<140	<140
Fluoranthene	423	<130	<130	<150	<140	<140
Fluorene	77.4	<130	<130	<150	<140	<140
Indeno(1,2,3-cd)pyrene	NA	<130	<130	<150	<140	<140
Naphthalene	176	<130	<130	<150	<140	<140

Table 4b

River/Creek Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 8)

	Location Identification	**SED-05A**	**SED-05B**	**SED-05C**	**SED-05D**	**SED-05E**
	Source Area	**WBWR Background**	**WBWR Background**	**WBWR Background**	**WBWR Background**	**WBWR Background**
	Laboratory Sample Identification	**A7C42906RE**	**A7C42906RE**	**A7C42907RE**	**A7C42901RE**	**A7C42902RE**
	Date Collected	**10/23/2007**	**10/23/2007**	**10/23/2007**	**10/24/2007**	**10/24/2007**
Analyte/Methods (Units)						
	Sediment Standard TEC [(A)]					
Semivolatile Organic Compounds (µg/kg)						
Phenanthrene	204	**19J**	<130	<150	**10J**	<140
Phenol	NA	<130	<130	<150	<140	<140
Pyrene	195	<130	<130	<150	<140	<140
Pyridine	NA	<130	<130	<150	<140	<140
Quinoline	NA	<130	<130	<150	<140	<140

(µg/kg) micrograms per kilogram
(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).
TEC Consensus-Based Threshold Effect Concentration
Bold Bolded result indicates positively identified compound.
Shaded Shaded result indicates result greater than or equal to the Sediment Standard
NA Not applicable
J The analyte was positively identified, the quantitation is an estimation.
B The analyte was found in an associated blank, as well as in the sample.
DUP Duplicate sample

Table 4b

River/Creek Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 8)

	Location Identification	**SED-10**	**SED-11**	**SED-12**	**SED-12-50 (DUP of SED-12)**	**SED-13**
	Source Area	**STF Creek**	**STF Creek**	**STF Creek**	**STF Creek**	**AHA Spring**
	Laboratory Sample Identification	**A7C51501RE**	**A7C51502RE**	**A7C51503RE**	**A7C51504RE/RA**	**A7C51505RE**
	Date Collected	**10/26/2007**	**10/26/2007**	**10/26/2007**	**10/26/2007**	**10/29/2007**
Analyte/Methods (Units)						
	Sediment Standard TEC [(A)]					
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	NA	<220	<250	<240	<280	<220
1,3-Dichlorobenzene	NA	<220	<250	<240	<280	<220
1,4-Dichlorobenzene	NA	**14J**	<250	<240	<280	<220
2,4-Dimethylphenol	NA	<130	<150	<150	<170	<130
2,4-Dinitrophenol	NA	<130	<150	<150	<170	<130
2-Methylphenol (o-cresol)	NA	<130	<150	<150	<170	<130
3+4-Methylphenol (m&p-cresols)	NA	<130	<150	<150	<170	<130
4-Nitrophenol	NA	<130	<150	<150	<170	<130
Acenaphthene	NA	**9J**	<150	<150	**15JB**	<130
Anthracene	57.2	<130	<150	<150	**25J**	<130
Benzo(a)anthracene	108	**17J**	<150	<150	<170	<130
Benzo(a)pyrene	150	**11J**	<150	<150	<170	<130
Benzo(b)fluoranthene	NA	**11J**	<150	<150	<170	<130
Benzo(k)fluoranthene	NA	**11J**	<150	<150	<170	<130
Bis(2-ethylhexyl)phthalate	NA	**180**	**230**	**98J**	**160JB**	<130
Chrysene	166	**15J**	<150	<150	<170	<130
Dibenzo(a,h)anthracene	33.0	**12J**	<150	<150	<170	<130
Diethyl phthalate	NA	<130	<150	<150	<170	<130
Dimethyl phthalate	NA	<130	<150	<150	<170	<130
Di-n-butylphthalate	NA	<130	<150	<150	<170	<130
Fluoranthene	423	**12J**	<150	<150	<170	<130
Fluorene	77.4	<130	<150	<150	**23JB**	<130
Indeno(1,2,3-cd)pyrene	NA	**16J**	<150	<150	<170	<130
Naphthalene	176	<130	<150	<150	**1400JB**	**23JB**

Table 4b

River/Creek Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 6 of 8)

	Location Identification	**SED-10**	**SED-11**	**SED-12**	**SED-12-50 (DUP of SED-12)**	**SED-13**
	Source Area	**STF Creek**	**STF Creek**	**STF Creek**	**STF Creek**	**AHA Spring**
	Laboratory Sample Identification	**A7C51501RE**	**A7C51502RE**	**A7C51503RE**	**A7C51504RE/RA**	**A7C51505RE**
	Date Collected	**10/26/2007**	**10/26/2007**	**10/26/2007**	**10/26/2007**	**10/29/2007**
Analyte/Methods (Units)						
	Sediment Standard TEC [(A)]					
Semivolatile Organic Compounds (µg/kg)						
Phenanthrene	204	**14J**	<150	<150	**25JB**	<130
Phenol	NA	**26JB**	<150	<150	<170	<130
Pyrene	195	**10J**	**660**	<150	<170	<130
Pyridine	NA	<130	<150	<150	<170	<130
Quinoline	NA	<130	<150	<150	<170	<130

(µg/kg) micrograms per kilogram
(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).
TEC Consensus-Based Threshold Effect Concentration
Bold Bolded result indicates positively identified compound.
Shaded Shaded result indicates result greater than or equal to the Sediment Standard
NA Not applicable
J The analyte was positively identified, the quantitation is an estimation.
B The analyte was found in an associated blank, as well as in the sample.
DUP Duplicate sample

Table 4b

River/Creek Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 7 of 8)

	Location Identification	**STF-CR-E (0-6)**	**STF-CR-W (0-6)**
	Source Area	**STF Creek**	**STF Creek**
	Laboratory Sample Identification	**A8E56202**	**A8E56201**
	Date Collected	**11/13/2008**	**11/13/2008**
Analyte/Methods (Units)			
	Sediment Standard TEC [(A)]		
Semivolatile Organic Compounds (µg/kg)			
1,2-Dichlorobenzene	NA	<240	<260
1,3-Dichlorobenzene	NA	<240	<260
1,4-Dichlorobenzene	NA	<240	<260
2,4-Dimethylphenol	NA	<140	<160
2,4-Dinitrophenol	NA	<140	<160
2-Methylphenol (o-cresol)	NA	<140	**120J**
3+4-Methylphenol (m&p-cresols)	NA	<140	<160
4-Nitrophenol	NA	<140	<160
Acenaphthene	NA	<140	**14J**
Anthracene	57.2	<140	**31J**
Benzo(a)anthracene	108	**10J**	**82J**
Benzo(a)pyrene	150	**41J**	**61J**
Benzo(b)fluoranthene	NA	<140	<160
Benzo(k)fluoranthene	NA	<140	<160
Bis(2-ethylhexyl)phthalate	NA	<140	<160
Chrysene	166	**44J**	**81J**
Dibenzo(a,h)anthracene	33.0	<140	<160
Diethyl phthalate	NA	<140	<160
Dimethyl phthalate	NA	<140	**14J**
Di-n-butylphthalate	NA	<140	<160
Fluoranthene	423	**12J**	**160**
Fluorene	77.4	<140	**16J**
Indeno(1,2,3-cd)pyrene	NA	<140	**46J**
Naphthalene	176	**15J**	**18J**

Table 4b

River/Creek Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 8 of 8)

	Location Identification	**STF-CR-E (0-6)**	**STF-CR-W (0-6)**
	Source Area	**STF Creek**	**STF Creek**
	Laboratory Sample Identification	**A8E56202**	**A8E56201**
	Date Collected	**11/13/2008**	**11/13/2008**
Analyte/Methods (Units)			
	Sediment Standard TEC [(A)]		
Semivolatile Organic Compounds (µg/kg)			
Phenanthrene	204	**12J**	**160**
Phenol	NA	<140	<160
Pyrene	195	**15J**	**140J**
Pyridine	NA	<140	<160
Quinoline	NA	<140	<160

(µg/kg) micrograms per kilogram
(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).
TEC Consensus-Based Threshold Effect Concentration
Bold Bolded result indicates positively identified compound.
Shaded Shaded result indicates result greater than or equal to the Sediment Standard
NA Not applicable
J The analyte was positively identified, the quantitation is an estimation.
B The analyte was found in an associated blank, as well as in the sample.
DUP Duplicate sample

Table 4c

River/Creek Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 3)

	Location Identification	**SED-01**	**SED-02**	**SED-03**	**SED-03-50 (DUP of SED-03)**	**SED-04**	**SED-05A**
	Source Area	**WBWR**	**WBWR**	**WBWR**	**WBWR**	**WBWR**	**WBWR Background**
	Laboratory Sample Identification	**A7C42903**	**A7C42904**	**A7C42909**	**A7C42910**	**A7C42908**	**A7C42905/A8020501**
	Date Collected	**10/24/2007**	**10/24/2007**	**10/25/2007**	**10/25/2007**	**10/25/2007**	**10/23/2007-1/7/2008**
Analyte/Methods (Units)	**Sediment Standard TEC[(A)]**						
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	NA	**10**	**130**	<3.3	<3.3	<3.3	<3.3
Gasoline Range Organics	NA	<5	**120J**	**5.1J**	**4.4J**	<5UJ	<5

(mg/kg) milligrams per kilogram

(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).

TEC Consensus-Based Threshold Effect Concentration

Bold Bolded result indicates positively identified compound.

n/a Not analyzed

J The analyte was positively identified, the quantitation is an

UJ Potential false negative due to low QC recoveries.

NA Not applicable

DUP Duplicate sample

Table 4c

River/Creek Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 3)

	Location Identification	**SED-05B**	**SED-05C**	**SED-05D**	**SED-05E**	**SED-10**	**SED-11**
	Source Area	**WBWR Background**	**WBWR Background**	**WBWR Background**	**WBWR Background**	**STF Creek**	**STF Creek**
	Laboratory Sample Identification	**A7C42906/A8020502**	**A7C42907/A8020503**	**A7C42901**	**A7C42902**	**A7C51501/A8020505**	**A7C51502/A8020504**
	Date Collected	**10/23/2007-1/7/2008**	**10/23/2007-1/7/2008**	**10/24/2007**	**10/24/2007**	**10/26/2007-1/7/2008**	**10/26/2007-1/7/2008**
Analyte/Methods (Units)	**Sediment Standard TEC[(A)]**						
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	NA	<3.3	<3.3	<3.3	<3.3	**11**	**510**
Gasoline Range Organics	NA	<5	<5	<5	<5	**86**	**150**

(mg/kg) milligrams per kilogram

(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).

TEC Consensus-Based Threshold Effect Concentration

Bold Bolded result indicates positively identified compound.

n/a Not analyzed

J The analyte was positively identified, the quantitation is an

UJ Potential false negative due to low QC recoveries.

NA Not applicable

DUP Duplicate sample

Table 4c

River/Creek Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 3)

	Location Identification	**SED-12**	**SED-12-50 (DUP of SED-12)**	**SED-13**	**STF-CR-E (0-6)**	**STF-CR-W (0-6)**
	Source Area	**STF Creek**	**STF Creek**	**AHA Spring**	**STF Creek**	**STF Creek**
	Laboratory Sample Identification	**A7C51503/A8020506**	**A7C51504/A8020507**	**A7C51505**	**A8E56202**	**A8E56201**
	Date Collected	**10/26/2007-1/7/2008**	**10/26/2007-1/7/2008**	**10/29/2007**	**11/13/2008**	**11/13/2008**
Analyte/Methods (Units)	**Sediment Standard TEC[(A)]**					
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	NA	<3.3	<3.3	<3.3	<5	**34**
Gasoline Range Organics	NA	<5	<5	<5	<5	<5

(mg/kg) milligrams per kilogram

(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).

TEC Consensus-Based Threshold Effect Concentration

Bold Bolded result indicates positively identified compound.

n/a Not analyzed

J The analyte was positively identified, the quantitation is an

UJ Potential false negative due to low QC recoveries.

NA Not applicable

DUP Duplicate sample

Table 4d

River/Creek Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 3)

	Location Identification	**SED-01**	**SED-02**	**SED-03**	**SED-03-50 (DUP of SED-03)**	**SED-04**	**SED-05A**	**SED-05B**
	Source Area	**WBWR**	**WBWR**	**WBWR**	**WBWR**	**WBWR**	**WBWR Background**	**WBWR Background**
	Laboratory Sample Identification	**A7C42903**	**A7C42904**	**A7C42909**	**A7C42910**	**A7C42908**	**A7C42905**	**A7C42906**
	Date Collected	**10/24/2007**	**10/24/2007**	**10/25/2007**	**10/25/2007**	**10/25/2007**	**10/23/2007**	**10/23/2007**
Analyte/Methods (Units)								
	Sediment Standard TEC[(A)]							
ICP Metals (mg/kg)								
Antimony	NA	<21.8	<25.4	<20.5	<23.5	<24.7	<20	<19.1
Arsenic	9.79	**3.4**	**4.7**	**4**	<3.1	<3.3	**3.9**	**3.7**
Barium	NA	**159**	**180**	**116**	**112**	**149**	**116**	**134**
Beryllium	NA	**0.68**	**0.67**	**0.61**	**0.56**	**0.74**	**0.52**	**0.57**
Cadmium	0.99	<0.29	<0.34	<0.27	<0.31	<0.33	**0.32**	**0.31**
Chromium, Total	43.4	**13.9**	**13.2**	**10.8**	**10.8**	**17.5**	**11.5**	**11.1**
Cobalt	NA	**6.1**	**6.9**	**6.4**	**6.1**	**9.3**	**7.6**	**6.4**
Lead	35.8	**29.3**	**15.2**	**11.6**	**12.6**	**13**	**11.4**	**11.6**
Magnesium	NA	**2710**	**2850**	**2140**	**2170**	**2750**	**2370**	**2240**
Manganese	NA	**198**	**375**	**209**	**203**	**395**	**380**	**528**
Mercury	0.18	<0.025	<0.027	<0.025	<0.024	<0.027	<0.021	<0.022
Nickel	22.7	**12**	**13.7**	**10.6J**	**10.7**	**13.4**	**11.3**	**11.9**
Potassium	NA	**1860**	**1750**	**1570**	**1540**	**2080**	**1580**	**1670**
Selenium	NA	<5.8	<6.8	<5.5	<6.3	<6.6	<5.3	<5.1
Silver	NA	<0.73	<0.85	<0.68	<0.78	<0.82	<0.67	<0.64
Vanadium	NA	**23.8**	**25.2**	**21.5**	**20.3**	**18.8**	**19.6**	**20.8**
Zinc	121	**33.3**	**28.5**	**28.3**	**27.6**	**38.9**	**25.7**	**29.7**

(mg/kg) milligrams per kilogram

(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).

TEC Consensus-Based Threshold Effect Concentration

Bold Bolded result indicates positively identified compound.

Shaded Shaded result indicates result greater than or equal to the Sediment Standard TEC.

NA Not applicable

DUP Duplicate sample

Table 4d

River/Creek Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 3)

	Location Identification	**SED-05C**	**SED-05D**	**SED-05E**	**SED-10**	**SED-11**	**SED-12**	**SED-12-50 (DUP of SED-12)**
	Source Area	**WBWR Background**	**WBWR Background**	**WBWR Background**	**STF Creek**	**STF Creek**	**STF Creek**	**STF Creek**
	Laboratory Sample Identification	**A7C42907**	**A7C42901**	**A7C42902**	**A7C51501**	**A7C51502**	**A7C51503**	**A7C51504**
	Date Collected	**10/23/2007**	**10/24/2007**	**10/24/2007**	**10/26/2007**	**10/26/2007**	**10/26/2007**	**10/26/2007**
Analyte/Methods (Units)	**Sediment Standard TEC[(A)]**							
ICP Metals (mg/kg)								
Antimony	NA	<21.7	<22.8	<22.2	<18.3	<19.8	<19.6	<22.6
Arsenic	9.79	**6.1**	**3.5**	**3.5**	**8.7**	**7.5**	**4.5**	**6.5**
Barium	NA	**140**	**153**	**91.6**	**191**	**123**	**136**	**169**
Beryllium	NA	**0.67**	**0.65**	**0.63**	**0.83**	**0.88**	**0.76**	**1**
Cadmium	0.99	**0.33**	<0.3	<0.3	**0.46**	**0.31**	**0.48**	**0.68**
Chromium, Total	43.4	**16.5**	**11.4**	**11.3**	**20.4**	**16.6**	**14.9**	**18.5**
Cobalt	NA	**12.2**	**6**	**7.7**	**24.6**	**8.6**	**11.1**	**17.6**
Lead	35.8	**19.1**	**14.8**	**10.1**	**45.9**	**11.6**	**19.7**	**34.6**
Magnesium	NA	**2390**	**2280**	**1910**	**3420**	**4510**	**2250**	**2770**
Manganese	NA	**193**	**192**	**85.3**	**1650**	**299**	**312**	**527**
Mercury	0.18	<0.026	<0.024	<0.024	<0.023	<0.026	<0.025	<0.029
Nickel	22.7	**14.7**	**11**	**12.8**	**22.9**	**23.2**	**16.5**	**23.9**
Potassium	NA	**1360**	**1960**	**1840**	**1480**	**2290**	**1770**	**2110**
Selenium	NA	<5.8	<6.1	<5.9	<4.9	<5.3	<5.2	<6
Silver	NA	<0.72	<0.76	<0.74	<0.61	<0.66	<0.65	<0.75
Vanadium	NA	**41.3**	**22**	**20**	**42.7**	**28.6**	**30**	**42.6**
Zinc	121	**24.8**	**34.4**	**30**	**40.5**	**37.5**	**46.8**	**56.8**

(mg/kg) milligrams per kilogram

(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).

TEC Consensus-Based Threshold Effect Concentration

Bold Bolded result indicates positively identified compound.

Shaded Shaded result indicates result greater than or equal to the Sediment Standard TEC.

NA Not applicable

DUP Duplicate sample

Table 4d

River/Creek Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 3)

	Location Identification	**SED-13**	**STF-CR-E (0-6)**	**STF-CR-W (0-6)**
	Source Area	**AHA Spring**	**STF Creek**	**STF Creek**
	Laboratory Sample Identification	**A7C51505**	**A8E56202**	**A8E56201**
	Date Collected	**10/29/2007**	**11/13/2008**	**11/13/2008**
Analyte/Methods (Units)				
	Sediment Standard TEC[(A)]			
ICP Metals (mg/kg)				
Antimony	NA	<18.2	<21.5	<23.8
Arsenic	9.79	**5.4**	**3.5**	**8.5**
Barium	NA	**152**	**82.5**	**392**
Beryllium	NA	**0.87**	**0.39**	**1**
Cadmium	0.99	**0.34**	<0.29	**0.55**
Chromium, Total	43.4	**16**	**11**	**15.3**
Cobalt	NA	**9.8**	**5.6**	**36.2**
Lead	35.8	**19.9**	**8**	**30.5**
Magnesium	NA	**2010**	**29500**	**2170**
Manganese	NA	**384**	**497**	**1890**
Mercury	0.18	<0.021	<0.029	<0.032
Nickel	22.7	**15**	**11.8**	**28.7**
Potassium	NA	**1890**	**1510**	**1870**
Selenium	NA	<4.8	<5.7	<6.4
Silver	NA	<0.61	<0.72	<0.79
Vanadium	NA	**33.8**	**18.6**	**41.2**
Zinc	121	**38.7**	**20.5**	**48.7**

(mg/kg) milligrams per kilogram

(A) Bureau of Environmental Remediation Sediment Policy, #BER-ARS-045, Jan. 9, 2004 and D.D. MacDonald, C.G. Ingersoll, and T.A. Berger, 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology, 39, 20-31 (2000).

TEC Consensus-Based Threshold Effect Concentration

Bold Bolded result indicates positively identified compound.

Shaded Shaded result indicates result greater than or equal to the Sediment Standard TEC.

NA Not applicable

DUP Duplicate sample

Table 5

Summary of Analytical Data for Surface Water Samples
El Paso Merchant Energy-Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 2)

	Location Description	Pester East - WBWR	Pester North - WBWR		El Dorado Refinery North -WBWR				El Dorado Refinery Middle - WBWR			
	Transect	Transect #1	Transect #1	Transect #1	Transect #2	Transect #2	Transect #2	Transect #2	Transect #3	Transect #3	Transect #3	Transect #3
	Sample Identification	TRANSECT-1*	T1	#1	TRANSECT-2	TRANSECT-2 Dup	T2	#2	TRANSECT-3	T3	T3 Dup	#3
	Laboratory Sample Identification	400-2938-1	A6D89801	RSB0168-02	400-2953-1	400-2953-3	A6D89802	RSB0168-03	400-2953-2	A6D89803	A6D89804	RSB0168-04
	Date Collected	6/7/2005	11/20/2006	2/5/2009	6/8/2005	6/8/2005	11/20/2006	2/5/2009	6/8/2005	11/20/2006	11/20/2006	2/5/2009
Analyte (Units)	**Kansas Surface Water Quality Standards/EPA Part 131.36 Surface Water Pathway**											
General Chemistry (mg/L)												
Alkalinity, Bicarbonate (as $CaCO_3$)	NA	**160**	n/a	n/a	**180**	**180**	n/a	n/a	**170**	n/a	n/a	n/a
Alkalinity, Carbonate (as $CaCO_3$)	NA	0	n/a	n/a	0	0	n/a	n/a	0	n/a	n/a	n/a
Alkalinity, Hydroxide (as $CaCO_3$)	NA	0	n/a	n/a	0	0	n/a	n/a	0	n/a	n/a	n/a
Alkalinity, Total (as $CaCO_3$)	NA	**160**	**334**	**302**	**180**	**180**	**332**	**298**	**180**	**338**	**337**	**298**
Chloride (as Cl)	250	**40**	**754 D**	**95**	**45**	**45**	**818 D**	**96**	**46 J**	**695 DJ**	**451 D**	**96**
Cyanide	0.0052	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0132**
Fluoride	1	**0.26**	**0.26**	**0.18**	**0.35**	**0.36**	**0.27**	**0.19**	**0.31**	**0.31**	**0.31**	**0.19**
Nitrate	10	**0.76**	**0.25**	**0.534B**	**0.97**	**0.84**	**0.33**	**0.56B**	**0.83**	**0.56**	**0.63**	**0.596B**
Sulfate (as SO4)	250	**16**	**20.8**	**38.5J**	**18**	**18**	**32.5**	**39.3J**	**18**	**34.6**	**34.1**	**31.6B**
Total Dissolved Solids	NA	**290**	**1310**	**445**	**310**	**300**	**1150**	**458**	**300**	**1110**	**1270**	**443**
Metals (ug/L)												
Arsenic	10	<4	<4.2	<5	**5**	<4	<4.2	<5	<4	<4.2	<4.2	<5
Barium	1000	**200**	**407**	**201B**	**200**	**200**	**391**	**211B**	**200**	**370**	**373**	**203B**
Calcium	NA	**50000**	**155000**	**83900B**	**57000**	**57000**	**151000**	**88000B**	**55000**	**145000**	**146000**	**85100B**
Chromium, Hexavalent	11	<20	n/a	**9J**	<20	<20	n/a	<30UJ	<20	n/a	n/a	<30UJ
Chromium, Total	40	<10	<5	<5	<10	<10	<5	<5	<10	<5	<5	<5
Cobalt	24	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Copper	200	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Iron	NA	**5100**	**779**	**296**	**4200**	**4100**	**1140**	**465**	**3900**	**804**	**861**	**299**
Lead	15	**5.3**	<5	<5	<5	**5.4**	<5	<5	**5.1**	<5	<5	<5
Magnesium	NA	**11000**	**32800**	**21100**	**12000**	**12000**	**30600**	**22200**	**12000**	**30500**	**30500**	**21500**
Manganese	NA	**210**	**275**	**87.8B**	**210**	**200**	**559**	**108B**	**220**	**302**	**321**	**86.2B**
Mercury	0.146	**0.63**	<0.12	**1.1**	**1.4**	**1.4**	<0.12	**0.5**	**6.3 J**	<0.12	<0.12	<0.2
Nickel	200	<5	<5	<5	<5	<5	<5	**1.1J**	<5	<5	<5	<5
Potassium	NA	**4400**	**4770**	**1880J**	**4000**	**4000**	**4250**	**2000J**	**4000**	**3670**	**3690**	**1870J**
Sodium	NA	**29000**	**270000**	**59200**	**34000**	**33000**	**259000**	**62600**	**34000 J**	**236000**	**236000**	**60600**
Vanadium	12	**15**	<10	**1.3J**	**13**	**13**	<10	**2.2J**	**13**	<10	<10	**1.4J**
Zinc	2000	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Petroleum Hydrocarbons (µg/l)												
Petroleum hydrocarbons above C-10	NA	**55**	n/a	n/a	<20	<20	n/a	n/a	<20	n/a	n/a	n/a
PHC as diesel fuel	NA	<98 UJ	<95	<0.48	<98	<98	<96	<0.47	<98	<96	<95	<0.48
TPHC10C28	NA	**23 J**	n/a	n/a	<20	<20	n/a	n/a	<20	n/a	n/a	n/a
TPHC28C35	NA	**27 JB**	n/a	n/a	<20	<20	n/a	n/a	<20	n/a	n/a	n/a
PHCJP8	NA	<98	n/a	n/a	<98	<98	n/a	n/a	<98	n/a	n/a	n/a
PHC as gasoline	NA	<100	<50	<0.025	<100	<100	<50	<0.025	<100	**44 T**	**41 T**	<0.025
Volatile Organic Compounds (µg/L)												
Benzene	5	<1	<0.35 D	<1UJ	<1	<1	<1	<1UJ	<1	**2.2**	**1.8 TD**	<1UJ
Carbon disulfide	15	<5	<10 D	**1.4J**	<5	<5	<5	<5UJ	<5	<5	<10 D	<5UJ
Methyl tert-butyl ether (tert-butyl methyl ether)	NA	<5	<10 D	<5UJ	<5	<5	**2.8 T**	<5UJ	<5	**2.1 T**	**1.8 TD**	<5UJ
Methylene chloride	4.7	<0.2	**1.1 TD**	<5UJ	<0.2	<0.2	<0.44	<5UJ	<0.2	<0.44	**1.6 TD**	<5UJ
Semi-Volatile Organic Compounds (µg/L)												
1-Methylnaphthalene	NA	n/a	<0.02	<0.143	n/a	n/a	**0.04**	<0.143	n/a	**0.49**	**0.35**	<0.143
2-Methylnaphthalene	330	<9.8	<0.1	<0.143	<9.8	<9.8	<0.1	<0.143	<9.8	**0.2**	**0.2**	<0.143
Naphthalene	620	<9.8	<0.02	<0.143	<9.8	<9.8	**0.03**	<0.143	<9.8	**0.1**	**0.05**	<0.143

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
B	Analyte detected in the associated blank, as well as the sample.
Bold	Bolded result indicates positively identified compound.
D	Sample dilution required for analysis; reported values reflect the dilution.
Dup	Duplicate
J	The analyte was positively identified, the quantitation is an estimation.
n/a	Not analyzed
NA	Not applicable
Shaded	Shaded result indicates result greater than or equal to the surface water standard.
T	Analyte was positively identified but the reported concentration is estimated; reported concentration is less than the reporting limit, but greater than the method detection limit.
UJ	Potential low bias, possible false negative.
WBWR	West Branch Walnut River

* Surface water samples were collected adjacent to the Pester site to the east in 2005 and to the north in 2006 and 2009.
** Sample locations STF-5, STF-6, and STF-7 were referred to as TRANSECT-5, TRANSECT-6, and TRANSECT-7 in the Second Phase Environmental Investigation Report, El Dorado Refinery, El Dorado, Kansas (October 2005).
*** Sample collected from ponded water within former tank berm at the northwest corner of the South Tank Farm.
**** Same location as STF-6 (Transect -6)

Table 5

Summary of Analytical Data for Surface Water Samples
El Paso Merchant Energy-Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 2)

	Location Description	El Dorado Refinery South - WBWR			Upgradient North - WBWR		South Tank Farm		South Tank Farm Creek - 2005 Locations		
	Transect	Transect #4	Transect #4	Transect #4	Transect #5	Transect #5	***	****			
	Sample Identification	TRANSECT-4	T4	#4	T5	#5	SW-POND	SW-CREEK	STF-5**	STF-6**	STF-7**
	Laboratory Sample Identification	400-2938-2	A6D89805	RSB0168-05	A6D89806	RSB0168-01	RSB0835-01	RSB0835-02	400-2796-1	400-2796-2	400-2796-3
	Date Collected	6/7/2005	11/20/2006	2/5/2009	11/20/2006	2/5/2009	2/25/2009	2/25/2009	6/1/2005	6/1/2005	6/1/2005
Analyte (Units)	**Kansas Surface Water Quality Standards/EPA Part 131.36 Surface Water Pathway**										
General Chemistry (mg/L)											
Alkalinity, Bicarbonate (as $CaCO_3$)	NA	**160**	n/a	n/a	n/a	n/a	n/a	n/a	**310**	**310**	**310**
Alkalinity, Carbonate (as $CaCO_3$)	NA	0	n/a	n/a	n/a	n/a	n/a	n/a	**1.2**	**1**	0
Alkalinity, Hydroxide (as $CaCO_3$)	NA	0	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0
Alkalinity, Total (as $CaCO_3$)	NA	**160**	**342**	**294**	**311**	**303**	**320**	**352**	**310**	**310**	**310**
Chloride (as Cl)	250	**41**	**464D**	**95**	**774D**	**98**	**50D**	**450D**	**230**	**350**	**280**
Cyanide	0.0052	<0.005	<0.005	<0.005	<0.005	<0.005	n/a	n/a	<0.005	<0.005	<0.005
Fluoride	1	**0.35**	**0.33**	**0.2**	**0.27**	**0.2**	n/a	n/a	**0.34**	**0.34**	**0.31**
Nitrate	10	**0.91**	**0.39**	**0.596B**	<0.05	**0.475B**	<0.05	<0.05	<0.1	<0.1	<0.1
Sulfate (as SO4)	250	**16**	**34.5**	**31.9B**	**22.2**	**37.8DJ**	**208DB**	**30.4DB**	**24**	**23**	**21**
Total Dissolved Solids	NA	**290**	**1130**	**464**	**1120**	**461**	**643**	**1080**	**740**	**910**	**820**
Metals (ug/L)											
Arsenic	10	<4	<4.2	**4.2J**	<4.2	<5	n/a	n/a	<4	*<4*	*<4*
Barium	1000	**200**	**363**	**204B**	**367**	**222B**	n/a	n/a	**240**	**270**	**260**
Calcium	NA	**49000**	**144000**	**85400B**	**137000**	**85500B**	n/a	n/a	**110000**	**120000**	**120000**
Chromium, Hexavalent	11	<20	n/a	<30UJ	n/a	**21J**	n/a	n/a	<20	<20	<20
Chromium, Total	40	<10	<5	<5	<5	**2J**	n/a	n/a	<10	<10	<10
Cobalt	24	<10	<10	<10	<10	**1.3J**	n/a	n/a	<10	<10	<10
Copper	200	<10	<10	<10	<10	**1.7J**	n/a	n/a	<10	<10	<10
Iron	NA	**5200**	**628**	**347**	**393**	**1750**	n/a	n/a	**590**	**390**	**720**
Lead	15	<5	<5	<5	<5	<5	n/a	n/a	<5	<5	<5
Magnesium	NA	**11000**	**30200**	**21600**	**31300**	**21200**	n/a	n/a	**16000**	**17000**	**15000**
Manganese	NA	**210**	**299**	**86.8B**	**332**	**252B**	n/a	n/a	**260**	**220**	**230**
Mercury	0.146	**2.6**	<0.12	**0.3**	<0.12	<0.2	n/a	n/a	<0.07	*<0.07*	*<0.07*
Nickel	200	<5	<5	<5	<5	**2.4J**	n/a	n/a	<5	<5	<5
Potassium	NA	**4400**	**3360**	**1900J**	**5160**	**2420J**	n/a	n/a	**3200**	**2800**	**2500**
Sodium	NA	**29000**	**214000**	**60900**	**234000**	**60300**	n/a	n/a	**140000 D**	**200000 D**	**160000 D**
Vanadium	12	**15**	<10	**2J**	<10	**4.6J**	n/a	n/a	<10	<10	<10
Zinc	2000	<20	<20	<20	<20	**5.6J**	n/a	n/a	<20	<20	<20
Petroleum Hydrocarbons (µg/l)											
Petroleum hydrocarbons above C-10	NA	**34**	n/a	n/a	n/a	n/a	n/a	n/a	**95**	**91**	**160**
PHC as diesel fuel	NA	<98 UJ	<95	<0.48	<97	<0.48	**0.13J**	<0.47	<95	<95	<95
TPHC10C28	NA	<20 UJ	n/a	n/a	n/a	n/a	n/a	n/a	**40**	**27**	**60**
TPHC28C35	NA	**38 JB**	n/a	n/a	n/a	n/a	n/a	n/a	**57**	**69**	**81**
PHCJP8	NA	<98	n/a	n/a	n/a	n/a	n/a	n/a	<95	<95	<95
PHC as gasoline	NA	<100	<50	<0.025	<50	<0.025	**0.0057J**	**0.013J**	<100	<100	<100
Volatile Organic Compounds (µg/L)											
Benzene	5	<1	<0.35 D	<1UJ	<0.35 D	<1UJ	<1	**1.8**	<1	<1	<1
Carbon disulfide	15	<5	<10 D	<5UJ	<10 D	<5UJ	<1	<1	<5	<5	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	NA	<5	**1.2 TD**	<5UJ	<10 D	<5UJ	<1	**1.7**	<5	<5	<5
Methylene chloride	4.7	<0.2	**1.6 TD**	<5UJ	**1.3 TD**	<5UJ	<1	<1	<0.2	<0.2	<0.2
Semi-Volatile Organic Compounds (µg/L)											
1-Methylnaphthalene	NA	n/a	**0.13**	<0.0952	<0.02	<0.0943	n/a	n/a	n/a	n/a	n/a
2-Methylnaphthalene	330	<9.8	<0.1	<0.0952	<0.1	<0.0943	n/a	n/a	<9.7	<10	<9.8
Naphthalene	620	<9.8	<0.02	<0.0952	<0.02	<0.0943	n/a	n/a	<9.7	<10	<9.8

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
B	Analyte detected in the associated blank, as well as the sample.
Bold	Bolded result indicates positively identified compound.
D	Sample dilution required for analysis; reported values reflect the dilution.
Dup	Duplicate.
J	The analyte was positively identified, the quantitation is an estimation.
n/a	Not analyzed
NA	Not applicable
Shaded	Shaded result indicates result greater than or equal to the surface water standard.
T	Analyte was positively identified but the reported concentration is estimated; reported concentration is less than the reporting limit, but greater than the method detection limit.
UJ	Potential low bias, possible false negative.
WBWR	West Branch Walnut River

* Surface water samples were collected adjacent to the Pester site to the east in 2005 and to the north in 2006 and 2009.
** Sample locations STF-5, STF-6, and STF-7 were referred to as TRANSECT-5, TRANSECT-6, and TRANSECT-7 in the Second Phase Environmental Investigation Report, El Dorado Refinery, El Dorado, Kansas (October 2005).
*** Sample collected from ponded water within former tank berm at the northwest corner of the South Tank Farm.
**** Same location as STF-6 (Transect -6)

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 13)

		Location Identification	**PB-SED-14A-28-40**	**PB-SED-14A-58-70**	**PB-SED-16D-47-59**
		Sample Depth (inches below top of sediment)	**0-12"**	**30-42"**	**0-12"**
		Source Area	**Spray Pond**	**Spray Pond**	**Marley Pond**
		Laboratory Sample Identification	**A7C82909/KA014**	**A7C82910/KA015**	**A7C82905/KA012**
Analyte/Methods (Units)		**Date Collected**	**11/2/2007**	**11/2/2007**	**11/2/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<1400UJ	<3300	<8.1UJ
1,1-Dichloroethane	2,100,000	13,000	<1400UJ	<3300	<8.1UJ
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<1400UJ*	*<3300*	*<8.1UJ*
1,2-Dichlorobenzene	990,000	77,000	<1400UJ	<3300	<8.1UJ
1,2-Dichloroethane	7,300	40	*<1400UJ*	*<3300*	<8.1UJ
1,4-Dioxane (p-dioxane)	1,700,000	1,100	*<71000UJ*	*<170000*	<400UJ
Benzene	17,000	80	**590J**	**790J**	**2.3J**
Carbon disulfide	950,000	450	*<1400UJ*	**530J**	**4.1J**
Chlorobenzene	240,000	4,800	<1400UJ	<3300	<8.1UJ
Chloroform	6,000	960	*<1400UJ*	*<3300*	<8.1UJ
Ethylbenzene	650,000	55,000	<1400UJ	**4800**	**2.8J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<1400UJ	<3300	<8.1UJ
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<1400UJ*	*<3300*	**7.5J**
Styrene	2,400,000	16,000	<1400UJ	<3300	<8.1UJ
Tetrachloroethene	140,000	180	*<1400UJ*	*<3300*	<8.1UJ
Toluene	1,000,000	40,000	**240J**	**1900J**	**5.4J**
Trichloroethene	98,000	200	*<1400UJ*	*<3300*	<8.1UJ
Xylenes, total	700,000	700,000	**880J**	**26000**	**36J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 13)

		Location Identification	PB-SED-16D-47-59	PB-SED-16D-84-96	PB-SED-18D-74-78
		Sample Depth (inches below top of sediment)	0-12"	37-49"	0-4"
		Source Area	Marley Pond	Marley Pond	Polishing Pond
		Laboratory Sample Identification	A8034203	A7C82906/KA013	A7D07301/KA5EQ
Analyte/Methods (Units)		Date Collected	1/9/2008	11/2/2007	11/6/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<57	<980	<9.6
1,1-Dichloroethane	2,100,000	13,000	<57	<980	<9.6
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<57*	*<980*	*<9.6*
1,2-Dichlorobenzene	990,000	77,000	<57	<980	<9.6
1,2-Dichloroethane	7,300	40	*<57*	*<980*	<9.6
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<280	*<49000*	**25**
Benzene	17,000	80	**300**	**2200**	<9.6
Carbon disulfide	950,000	450	<57	*<980*	**8.7J**
Chlorobenzene	240,000	4,800	<57	<980	<9.6
Chloroform	6,000	960	<57	*<980*	<9.6
Ethylbenzene	650,000	55,000	**44J**	**22000**	<9.6
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<57	<980	<9.6
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<57	*<980*	<9.6
Styrene	2,400,000	16,000	<57	<980	<9.6
Tetrachloroethene	140,000	180	<57	*<980*	<9.6
Toluene	1,000,000	40,000	**120**	**520J**	**1.1J**
Trichloroethene	98,000	200	<57	*<980*	<9.6
Xylenes, total	700,000	700,000	**350**	**5000**	**32**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 13)

		Location Identification	**PB-SED-18D-74-78**	**PB-SED-20D-144-160**	**PB-SED-22D-158-164**
		Sample Depth (inches below top of sediment)	**0-4"**	**0-16"**	**0-6"**
		Source Area	**Polishing Pond**	**Aeration Pond #3**	**Aertion Pond #2**
		Laboratory Sample Identification	**A8034202**	**A7D07302/KA5EW**	**A7D07303/KA5E6**
Analyte/Methods (Units)		**Date Collected**	**1/9/2008**	**11/6/2007**	**11/7/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<63	<410UJ	<440
1,1-Dichloroethane	2,100,000	13,000	<63	<410UJ	<440
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<63*	*<410UJ*	*<440*
1,2-Dichlorobenzene	990,000	77,000	<63	<410UJ	<440
1,2-Dichloroethane	7,300	40	*<63*	*<410UJ*	*<440*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<320	*<21000UJ*	<22000
Benzene	17,000	80	<63	**320J**	*<440*
Carbon disulfide	950,000	450	**120**	*<410UJ*	<440
Chlorobenzene	240,000	4,800	<63	<410UJ	<440
Chloroform	6,000	960	<63	<410UJ	<440
Ethylbenzene	650,000	55,000	<63	**84J**	<440
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<63	<410UJ	**110J**
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<63	*<410UJ*	*<440*
Styrene	2,400,000	16,000	<63	<410UJ	<440
Tetrachloroethene	140,000	180	<63	*<410UJ*	*<440*
Toluene	1,000,000	40,000	<63	**60J**	**25J**
Trichloroethene	98,000	200	<63	*<410UJ*	*<440*
Xylenes, total	700,000	700,000	<63	**490J**	<440

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 13)

		Location Identification	**PB-SED-24B-156-162**	**PB-SED-24B-156-162**	**PB-SED-26B-66-78**
		Sample Depth (inches below top of sediment)	**0-6"**	**0-6"**	**0-12"**
		Source Area	**Aeration Pond #1**	**Aeration Pond #1**	**Equilization Basin**
		Laboratory Sample Identification	**A7D07306/KA5FJ**	**A8034201**	**A7D07307/KA5FM**
Analyte/Methods (Units)		**Date Collected**	**11/8/2007**	**1/9/2008**	**11/8/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<24	<62	<1300UJ
1,1-Dichloroethane	2,100,000	13,000	<24	<62	<1300UJ
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<24*	*<62*	*<1300UJ*
1,2-Dichlorobenzene	990,000	77,000	<24	<62	<1300UJ
1,2-Dichloroethane	7,300	40	<24	*<62*	*<1300UJ*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<310	*<1200*	*<64000UJ*
Benzene	17,000	80	**130J**	<62	**5500J**
Carbon disulfide	950,000	450	**42J**	<62	*<1300UJ*
Chlorobenzene	240,000	4,800	<24	<62	<1300UJ
Chloroform	6,000	960	<24	<62	*<1300UJ*
Ethylbenzene	650,000	55,000	**21J**	<62	**910J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<24	<62	<1300UJ
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<24	<62	*<1300UJ*
Styrene	2,400,000	16,000	<24	<62	<1300UJ
Tetrachloroethene	140,000	180	<24	<62	*<1300UJ*
Toluene	1,000,000	40,000	**22J**	<62	**100J**
Trichloroethene	98,000	200	<24	<62	*<1300UJ*
Xylenes, total	700,000	700,000	**450J**	<62	**2100J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 13)

		Location Identification	**PB-SED-26B-88-100**	**PB-SED-28D**	**PB-SED-30D**
		Sample Depth (inches below top of sediment)	**22-34"**	**6-18"**	**0-15"**
		Source Area	**Equilization Basin**	**Southeast Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D07308/KA5FP**	**A7D18101/KA89A**	**A7D24303**
Analyte/Methods (Units)		**Date Collected**	**11/8/2007**	**11/9/2007**	**11/13/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<410	<690UJ	<320
1,1-Dichloroethane	2,100,000	13,000	<410	<690UJ	<320
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<410*	*<690UJ*	*<320*
1,2-Dichlorobenzene	990,000	77,000	<410	<690UJ	<320
1,2-Dichloroethane	7,300	40	*<410*	*<690UJ*	*<320*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	*<21000*	*<34000UJ*	*<1600*
Benzene	17,000	80	**840**	*<690UJ*	**370**
Carbon disulfide	950,000	450	<410	**1800J**	<320
Chlorobenzene	240,000	4,800	<410	<690UJ	<320
Chloroform	6,000	960	<410	<690UJ	<320
Ethylbenzene	650,000	55,000	**480**	**120J**	**1800J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	**2500**	<690UJ	<320
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<410*	*<690UJ*	*<320*
Styrene	2,400,000	16,000	<410	<690UJ	<320
Tetrachloroethene	140,000	180	*<410*	**140J**	*<320*
Toluene	1,000,000	40,000	**25J**	**98J**	**290J**
Trichloroethene	98,000	200	*<410*	*<690UJ*	*<320*
Xylenes, total	700,000	700,000	**1100**	**2000J**	**6400J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 6 of 13)

		Location Identification	PB-SED-30D-52 (DUP of PB-SED-30D)	PB-SED-32D	PB-SED-34D
		Sample Depth (inches below top of sediment)	0-15"	0-6"	0-12"
		Source Area	West Oxidation Pond	West Oxidation Pond	West Oxidation Pond
		Laboratory Sample Identification	A7D24304	A7D40702	A7D40703
Analyte/Methods (Units)		Date Collected	11/13/2007	11/15/2007	11/15/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<340	<120	<880
1,1-Dichloroethane	2,100,000	13,000	<340	<120	*<880*
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<340*	*<120*	*<880*
1,2-Dichlorobenzene	990,000	77,000	<340	<120	<880
1,2-Dichloroethane	7,300	40	*<340*	*<120*	*<880*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	*<1700*	<630	*<4400*
Benzene	17,000	80	**270J**	**78J**	**2100**
Carbon disulfide	950,000	450	**640**	**83J**	*<880*
Chlorobenzene	240,000	4,800	<340	<120	<880
Chloroform	6,000	960	<340	<120	<880
Ethylbenzene	650,000	55,000	**2000**	**1100**	**1300**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<340	<120	<880
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<340*	*<120*	*<880*
Styrene	2,400,000	16,000	<340	<120	<880
Tetrachloroethene	140,000	180	*<340*	<120	*<880*
Toluene	1,000,000	40,000	**330J**	**280**	**730J**
Trichloroethene	98,000	200	*<340*	<120	*<880*
Xylenes, total	700,000	700,000	**7900**	**6200**	**3800**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 7 of 13)

		Location Identification	PB-SED-36D	PB-SED-39D	SED-15A
		Sample Depth (inches below top of sediment)	0-12"	0-6"	0-12"
		Source Area	West Oxidation Pond	Primary Pond	Spray Pond
		Laboratory Sample Identification	A7D40706	A7D18103/K889N	A7C82901/KA010
Analyte/Methods (Units)		Date Collected	11/15/2007	11/10/2007	11/1/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<300	<680	<400UJ
1,1-Dichloroethane	2,100,000	13,000	<300	<680	<400UJ
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<300*	*<680*	*<400UJ*
1,2-Dichlorobenzene	990,000	77,000	<300	<680	<400UJ
1,2-Dichloroethane	7,300	40	*<300*	*<680*	*<400UJ*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	*<1500*	*<34000*	*<20000UJ*
Benzene	17,000	80	**830**	**130J**	**23J**
Carbon disulfide	950,000	450	<300	*<680*	<400UJ
Chlorobenzene	240,000	4,800	<300	<680	<400UJ
Chloroform	6,000	960	<300	<680	<400UJ
Ethylbenzene	650,000	55,000	**3700**	**2100**	<400UJ
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<300	<680	**400J**
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<300*	*<680*	*<400UJ*
Styrene	2,400,000	16,000	<300	<680	<400UJ
Tetrachloroethene	140,000	180	*<300*	*<680*	*<400UJ*
Toluene	1,000,000	40,000	**330**	**100J**	**32J**
Trichloroethene	98,000	200	*<300*	*<680*	*<400UJ*
Xylenes, total	700,000	700,000	**12000**	**5600**	**69J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**SED-17D**	**SED-17**	**SED-19D**	**SED-21D**
		Sample Depth (inches below top of sediment)	**0-12"**	**0-12"**	**0-12"**	**0-8"**
		Source Area	**Marley Pond**	**Marley Pond**	**Polishing Pond**	**Aeration Pond #3**
		Laboratory Sample Identification	**A7C82902/KA011**	**A8026101**	**A7C82911/KA016**	**A7C82912/KA017**
Analyte/Methods (Units)		**Date Collected**	**11/1/2007**	**1/8/2008**	**11/5/2007**	**11/5/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<6.7UJ	<86	<290UJ	<6.2
1,1-Dichloroethane	2,100,000	13,000	<6.7UJ	<86	<290UJ	<6.2
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<6.7UJ*	*<86*	*<290UJ*	*<6.2*
1,2-Dichlorobenzene	990,000	77,000	<6.7UJ	<86	<290UJ	<6.2
1,2-Dichloroethane	7,300	40	<6.7UJ	*<86*	*<290UJ*	<6.2
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<330UJ	<430	*<14000UJ*	<310
Benzene	17,000	80	**37J**	*<86*	*<290UJ*	<6.2
Carbon disulfide	950,000	450	**0.77J**	<86	*<290UJ*	<6.2
Chlorobenzene	240,000	4,800	<6.7UJ	<86	<290UJ	<6.2
Chloroform	6,000	960	<6.7UJ	<86	<290UJ	<6.2
Ethylbenzene	650,000	55,000	**8.6J**	<86	<290UJ	<6.2
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<6.7UJ	<86	**74J**	**1.8J**
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<6.7UJ	<86	*<290UJ*	<6.2
Styrene	2,400,000	16,000	<6.7UJ	<86	<290UJ	<6.2
Tetrachloroethene	140,000	180	<6.7UJ	<86	*<290UJ*	<6.2
Toluene	1,000,000	40,000	**9.4J**	<86	<290UJ	<6.2
Trichloroethene	98,000	200	<6.7UJ	<86	*<290UJ*	<6.2
Xylenes, total	700,000	700,000	**27J**	<86	**110J**	<6.2

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**SED-21D**	**SED-23D**	**SED-23D**
		Sample Depth (inches below top of sediment)	**0-8"**	**0-12"**	**0-12"**
		Source Area	**Aeration Pond #3**	**Aeration Pond #2**	**Aeration Pond #2**
		Laboratory Sample Identification	**A8026105**	**A7C82913/KA018**	**A8026106**
Analyte/Methods (Units)		**Date Collected**	**1/8/2008**	**11/5/2007**	**1/8/2008**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<86	<310	<51
1,1-Dichloroethane	2,100,000	13,000	<86	<310	<51
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<86*	*<310*	*<51*
1,2-Dichlorobenzene	990,000	77,000	<86	<310	<51
1,2-Dichloroethane	7,300	40	*<86*	*<310*	*<51*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<430	*<16000*	<250
Benzene	17,000	80	*<86*	*<310*	<51
Carbon disulfide	950,000	450	<86	<310	<51
Chlorobenzene	240,000	4,800	<86	<310	<51
Chloroform	6,000	960	<86	<310	<51
Ethylbenzene	650,000	55,000	<86	<310	<51
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<86	<310	<51
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<86	*<310*	<51
Styrene	2,400,000	16,000	<86	<310	<51
Tetrachloroethene	140,000	180	<86	*<310*	<51
Toluene	1,000,000	40,000	<86	<310	<51
Trichloroethene	98,000	200	<86	*<310*	<51
Xylenes, total	700,000	700,000	<86	<310	<51

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 10 of 13)

		Location Identification	**SED-25B**	**SED-25B**	**SED-27B**	**SED-29D**
		Sample Depth (inches below top of sediment)	**0-12"**	**0-12"**	**0-8"**	**0-12"**
		Source Area	**Aeration Pond #1**	**Aeration Pond #1**	**Equilization Basin**	**Southeast Pond**
		Laboratory Sample Identification	**A7D07304/KA5FA**	**A8026108**	**A7D07305/KA5FH**	**A7D18102/KA89J**
Analyte/Methods (Units)		**Date Collected**	**11/7/2007**	**1/8/2008**	**11/7/2007**	**11/9/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<7UJ	<68	<360	<6.6UJ
1,1-Dichloroethane	2,100,000	13,000	<7UJ	<68	<360	<6.6UJ
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<7UJ*	*<68*	*<360*	*<6.6UJ*
1,2-Dichlorobenzene	990,000	77,000	**1JB**	<68	<360	<6.6UJ
1,2-Dichloroethane	7,300	40	<7UJ	*<68*	*<360*	<6.6UJ
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<350UJ	<340	*<18000*	<330UJ
Benzene	17,000	80	**18J**	<68	*<360*	**0.34J**
Carbon disulfide	950,000	450	**5.2J**	<68	<360	**0.95J**
Chlorobenzene	240,000	4,800	<7UJ	<68	<360	<6.6UJ
Chloroform	6,000	960	<7UJ	<68	<360	<6.6UJ
Ethylbenzene	650,000	55,000	**2.1J**	<68	<360	<6.6UJ
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	**30J**	<68	**170J**	**30J**
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<7UJ	<68	*<360*	<6.6UJ
Styrene	2,400,000	16,000	<7UJ	<68	<360	<6.6UJ
Tetrachloroethene	140,000	180	<7UJ	<68	*<360*	**1.5JB**
Toluene	1,000,000	40,000	**1.7J**	<68	<360	**0.76J**
Trichloroethene	98,000	200	<7UJ	<68	*<360*	<6.6UJ
Xylenes, total	700,000	700,000	**16J**	<68	<360	<6.6UJ

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 11 of 13)

		Location Identification	**SED-29D**	**SED-31B**	**SED-33B**
		Sample Depth (inches below top of sediment)	**0-12"**	**0-14"**	**0-6"**
		Source Area	**Southeast Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A8026107**	**A7D24302**	**A7D24301**
Analyte/Methods (Units)		**Date Collected**	**1/8/2008**	**11/13/2007**	**11/13/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<42	<89	<130
1,1-Dichloroethane	2,100,000	13,000	<42	<89	<130
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<42*	*<89*	*<130*
1,2-Dichlorobenzene	990,000	77,000	<42	<89	<130
1,2-Dichloroethane	7,300	40	*<42*	*<89*	*<130*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<210	*<440*	<670
Benzene	17,000	80	<42	*<89*	*<130*
Carbon disulfide	950,000	450	<42	<89	<130
Chlorobenzene	240,000	4,800	<42	<89	<130
Chloroform	6,000	960	<42	<89	<130
Ethylbenzene	650,000	55,000	<42	<89	<130
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<42	<89	<130
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<42	<89	*<130*
Styrene	2,400,000	16,000	<42	<89	<130
Tetrachloroethene	140,000	180	<42	<89	<130
Toluene	1,000,000	40,000	<42	<89	<130
Trichloroethene	98,000	200	<42	<89	<130
Xylenes, total	700,000	700,000	<42	<89	<130

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 12 of 13)

		Location Identification	**SED-35B**	**SED-35B**	**SED-37B**
		Sample Depth (inches below top of sediment)	**0-4"**	**0-4"**	**0-6"**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D18106/KA892**	**A8026104**	**A7D18105/KA89V**
Analyte/Methods (Units)		**Date Collected**	**11/12/2007**	**1/8/2008**	**11/12/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway(A)	**Soil to GW Pathway(A)**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<4.5	<70	<5.9UJ
1,1-Dichloroethane	2,100,000	13,000	<4.5	<70	<5.9UJ
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<4.5*	*<70*	*<5.9UJ*
1,2-Dichlorobenzene	990,000	77,000	<4.5	<70	<5.9UJ
1,2-Dichloroethane	7,300	40	<4.5	*<70*	<5.9UJ
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<220	<350	<290UJ
Benzene	17,000	80	**0.24J**	<70	**0.28J**
Carbon disulfide	950,000	450	**0.39J**	<70	**0.48J**
Chlorobenzene	240,000	4,800	<4.5	<70	<5.9UJ
Chloroform	6,000	960	<4.5	<70	<5.9UJ
Ethylbenzene	650,000	55,000	<4.5	<70	<5.9UJ
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	**7.8**	<70	<5.9UJ
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<4.5	<70	<5.9UJ
Styrene	2,400,000	16,000	<4.5	<70	<5.9UJ
Tetrachloroethene	140,000	180	**0.84JB**	<70	<5.9UJ
Toluene	1,000,000	40,000	**0.43J**	<70	**0.62J**
Trichloroethene	98,000	200	<4.5	<70	<5.9UJ
Xylenes, total	700,000	700,000	<4.5	<70	**0.96J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6a

Pond Sediment Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 13 of 13)

		Location Identification	**SED-37B**	**SED-38D**	**SED-38D**
		Sample Depth (inches below top of sediment)	**0-6"**	**0-12"**	**0-12"**
		Source Area	**West Oxidation Pond**	**Primary Pond**	**Primary Pond**
		Laboratory Sample Identification	**A8026103**	**A7D18104/KA89R**	**A8026102**
Analyte/Methods (Units)		**Date Collected**	**1/8/2008**	**11/12/2007**	**1/8/2008**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<120	<7.4UJ	<160
1,1-Dichloroethane	2,100,000	13,000	<120	<7.4UJ	<160
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<120*	*<7.4UJ*	*<160*
1,2-Dichlorobenzene	990,000	77,000	<120	**7.9JB**	**170**
1,2-Dichloroethane	7,300	40	*<120*	<7.4UJ	*<160*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<610	<370UJ	<800
Benzene	17,000	80	*<120*	**100J**	**1100**
Carbon disulfide	950,000	450	<120	**2J**	<160
Chlorobenzene	240,000	4,800	<120	<7.4UJ	<160
Chloroform	6,000	960	<120	<7.4UJ	<160
Ethylbenzene	650,000	55,000	<120	**19J**	**14000**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<120	<7.4UJ	<160
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<120*	**0.53J**	*<160*
Styrene	2,400,000	16,000	<120	<7.4UJ	<160
Tetrachloroethene	140,000	180	<120	<7.4UJ	<160
Toluene	1,000,000	40,000	<120	**14J**	**480**
Trichloroethene	98,000	200	<120	<7.4UJ	<160
Xylenes, total	700,000	700,000	<120	**160J**	**11000**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	The analyte was found in an associated blank, as well as in the sample.
NA	Not applicable
DUP	Duplicate sample

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 16)

		Location Identification	**PB-SED-14-TOS**	**PB-SED-14-BOS**	**PB-SED-16-BOS**	**PB-SED-16-TOS**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**	**Composite**
		Source Area	**Spray Pond**	**Spray Pond**	**Marley Pond**	**Marley Pond**
		Laboratory Sample Identification	**A7C82907/DL**	**A7C82908/DL**	**A7C82904**	**A7C82903**
		Date Collected	**11/2/2007**	**11/2/2007**	**11/2/2007**	**11/2/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	990,000	77,000	<1700	<1900UJ	<1400	<1600
1,3-Dichlorobenzene	NA	NA	<1700	<1900UJ	<1400	<1600
1,4-Dichlorobenzene	92,000	9,500	<1700	<1900UJ	<1400	<1600
2,4-Dimethylphenol	14,000,000	81,000	<1000	<1200UJ	<820	<940
2,4-Dinitrophenol	1,200,000	2,100	<1000	<1200UJ	<820	<940
2-Methylphenol (o-cresol)	6,500,000	29,000	<1000	<1200UJ	<820	<940
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<1000	<1200UJ	<820	<940
4-Nitrophenol	NA	NA	<1000	<1200UJ	<820	<940
Acenaphthene	300,000	300,000	**3600J**	**30000D**	**990**	<940
Anthracene	13,000	13,000	**34000D**	**57000D**	**1300**	**240J**
Benzo(a)anthracene	26,000	35,000	**20000D**	**18000DJ**	**3400**	**910J**
Benzo(a)pyrene	2,600	16,000	**12000J**	**6600DJ**	**2000**	**640J**
Benzo(b)fluoranthene	19,000	19,000	**11000DJ**	**6900DJ**	**1600**	**660J**
Benzo(k)fluoranthene	10,000	10,000	**4100DJ**	**1900DJ**	<820	<940
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<1000	<1200UJ	**940**	**660J**
Chrysene	6,400	6,400	**49000D**	**40000D**	**8600**	**2600**
Dibenzo(a,h)anthracene	2,600	11,000	<1000	<1200UJ	<820	<940
Diethyl phthalate	3,200,000	3,200,000	<1000	<1200UJ	<820	<940
Dimethyl phthalate	6,812,563,000	11,456,000	<1000	<1200UJ	<820	<940
Di-n-butylphthalate	3,798,000	3,798,000	<1000	<1200UJ	<820	<940
Fluoranthene	220,000	220,000	**18000DJ**	**30000D**	**1700**	**360J**
Fluorene	270,000	270,000	**12000DJ**	**35000D**	**1500**	**210J**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<1000	**2400DJ**	<820	<940
Naphthalene	325,000	3,520	**14000J**	**33000J**	**18000**	**300J**

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-14-TOS**	**PB-SED-14-BOS**	**PB-SED-16-BOS**	**PB-SED-16-TOS**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**	**Composite**
		Source Area	**Spray Pond**	**Spray Pond**	**Marley Pond**	**Marley Pond**
		Laboratory Sample Identification	**A7C82907/DL**	**A7C82908/DL**	**A7C82904**	**A7C82903**
		Date Collected	**11/2/2007**	**11/2/2007**	**11/2/2007**	**11/2/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
Phenanthrene	NA	NA	**140000D**	**240000D**	**8000**	**1000**
Phenol	32,000,000	560,000	<1000	<1200UJ	<820	<940
Pyrene	140,000	140,000	**130000D**	**230000D**	**6900**	**1200**
Pyridine	150,000	50	*<1000*	*<1200UJ*	*<820*	*<940*
Quinoline	NA	NA	<1000	<1200UJ	<820	<940

(µg/kg)	micrograms per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**PB-SED-18**	**PB-SED-20**	**PB-SED-22**	**PB-SED-24**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**	**Composite**
		Source Area	**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #2**	**Aeration Pond #1**
		Laboratory Sample Identification	**A7D07002**	**A7D07003**	**A7D07005**	**A7D07011**
		Date Collected	**11/6/2007**	**11/6/2007**	**11/7/2007**	**11/8/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	990,000	77,000	<360	<400	<520	<6900
1,3-Dichlorobenzene	NA	NA	<360	<400	<520	<6900
1,4-Dichlorobenzene	92,000	9,500	<360	<400	<520	<6900
2,4-Dimethylphenol	14,000,000	81,000	<220	<240	<320	<4200
2,4-Dinitrophenol	1,200,000	2,100	<220	<240	<320	*<4200*
2-Methylphenol (o-cresol)	6,500,000	29,000	<220	<240	<320	<4200
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<220	<240	<320	<4200
4-Nitrophenol	NA	NA	<220	<240	<320	<4200
Acenaphthene	300,000	300,000	<220	**55J**	<320	<4200
Anthracene	13,000	13,000	**58J**	**210J**	<320	<4200
Benzo(a)anthracene	26,000	35,000	**47J**	**230J**	**130J**	**1800J**
Benzo(a)pyrene	2,600	16,000	<220	**220J**	**100J**	**2100J**
Benzo(b)fluoranthene	19,000	19,000	<220	<240	**58J**	**1100J**
Benzo(k)fluoranthene	10,000	10,000	<220	<240	<320	<4200
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	**82J**	**120J**	<320	<4200
Chrysene	6,400	6,400	**190J**	**530**	**310J**	**3600J**
Dibenzo(a,h)anthracene	2,600	11,000	<220	<240	<320	*<4200*
Diethyl phthalate	3,200,000	3,200,000	<220	<240	<320	<4200
Dimethyl phthalate	6,812,563,000	11,456,000	<220	<240	<320	<4200
Di-n-butylphthalate	3,798,000	3,798,000	<220	<240	<320	<4200
Fluoranthene	220,000	220,000	**40J**	<240	<320	**310J**
Fluorene	270,000	270,000	**25J**	**45J**	<320	<4200
Indeno(1,2,3-cd)pyrene	5,100	5,100	<220	<240	<320	**430J**
Naphthalene	325,000	3,520	**18J**	**72J**	<320	*<4200*

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 16)

		Location Identification	**PB-SED-18**	**PB-SED-20**	**PB-SED-22**	**PB-SED-24**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**	**Composite**
		Source Area	**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #2**	**Aeration Pond #1**
		Laboratory Sample Identification	**A7D07002**	**A7D07003**	**A7D07005**	**A7D07011**
		Date Collected	**11/6/2007**	**11/6/2007**	**11/7/2007**	**11/8/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
Phenanthrene	NA	NA	**41J**	**220J**	<320	**770J**
Phenol	32,000,000	560,000	<220	<240	<320	<4200
Pyrene	140,000	140,000	**94J**	**330**	**120J**	**1800J**
Pyridine	150,000	50	*<220*	*<240*	*<320*	*<4200*
Quinoline	NA	NA	<220	<240	<320	<4200

(µg/kg)	micrograms per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 16)

		Location Identification	**PB-SED-26-BOS**	**PB-SED-26-TOS**	**PB-SED-28**	**PB-SED-30**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**	**Composite**
		Source Area	**Equilization Basin**	**Equilization Basin**	**Southeast Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D07015**	**A7D07013**	**A7D17801**	**A7D23703/RD/RE**
		Date Collected	**11/8/2007**	**11/8/2007**	**11/9/2007**	**11/13/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	990,000	77,000	<5500	<44000	<3200	<290UJ
1,3-Dichlorobenzene	NA	NA	<5500	<44000	<3200	<290UJ
1,4-Dichlorobenzene	92,000	9,500	<5500	*<44000*	<3200	<290UJ
2,4-Dimethylphenol	14,000,000	81,000	<3300	<26000	<2000	<180UJ
2,4-Dinitrophenol	1,200,000	2,100	*<3300*	*<26000*	<2000	<180UJ
2-Methylphenol (o-cresol)	6,500,000	29,000	<3300	<26000	<2000	<180UJ
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<3300	*<26000*	<2000	<180UJ
4-Nitrophenol	NA	NA	<3300	<26000	<2000	<180UJ
Acenaphthene	300,000	300,000	**1700J**	<26000	**1700J**	**5200J**
Anthracene	13,000	13,000	**2800J**	**4500J**	**3100**	**11000J**
Benzo(a)anthracene	26,000	35,000	**8000**	**18000J**	**1200J**	**22000DJ**
Benzo(a)pyrene	2,600	16,000	**4600**	**11000J**	**1200J**	**8600J**
Benzo(b)fluoranthene	19,000	19,000	**3300**	**5500J**	**950J**	**9200DJ**
Benzo(k)fluoranthene	10,000	10,000	<3300	*<26000*	**450J**	**1800J**
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<3300	<26000	<2000	<180UJ
Chrysene	6,400	6,400	**15000**	**36000**	**3100**	**38000J**
Dibenzo(a,h)anthracene	2,600	11,000	*<3300*	*<26000*	<2000	**2500DJ**
Diethyl phthalate	3,200,000	3,200,000	<3300	<26000	<2000	<180UJ
Dimethyl phthalate	6,812,563,000	11,456,000	<3300	<26000	<2000	<180UJ
Di-n-butylphthalate	3,798,000	3,798,000	<3300	<26000	<2000	<180UJ
Fluoranthene	220,000	220,000	**3000J**	**4900J**	**1400J**	**10000J**
Fluorene	270,000	270,000	**2100J**	**3000J**	**3000**	**11000J**
Indeno(1,2,3-cd)pyrene	5,100	5,100	**380J**	*<26000*	<2000	**1000DJ**
Naphthalene	325,000	3,520	**2400J**	*<26000*	**770J**	**7200J**

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-26-BOS**	**PB-SED-26-TOS**	**PB-SED-28**	**PB-SED-30**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**	**Composite**
		Source Area	**Equilization Basin**	**Equilization Basin**	**Southeast Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D07015**	**A7D07013**	**A7D17801**	**A7D23703/RD/RE**
		Date Collected	**11/8/2007**	**11/8/2007**	**11/9/2007**	**11/13/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
Phenanthrene	NA	NA	**13000**	**15000J**	**18000**	**59000J**
Phenol	32,000,000	560,000	<3300	<26000	<2000	<180UJ
Pyrene	140,000	140,000	**13000**	**25000J**	**2800**	**32000DJ**
Pyridine	150,000	50	*<3300*	*<26000*	*<2000*	*<180UJ*
Quinoline	NA	NA	<3300	<26000	<2000	<180UJ

(µg/kg)	micrograms per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 7 of 16)

		Location Identification	**PB-SED-30-52 (DUP of PB-SED-30)**	**PB-SED-32**	**PB-SED-34**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D23706/RE**	**A7D40701**	**A7D40704**
		Date Collected	**11/13/2007**	**11/15/2007**	**11/15/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Semivolatile Organic Compounds (µg/kg)					
1,2-Dichlorobenzene	990,000	77,000	<1300UJ	<9400	<2500
1,3-Dichlorobenzene	NA	NA	<1300UJ	<9400	<2500
1,4-Dichlorobenzene	92,000	9,500	<1300UJ	<9400	<2500
2,4-Dimethylphenol	14,000,000	81,000	<760UJ	<5700R	<1500R
2,4-Dinitrophenol	1,200,000	2,100	<760UJ	*<5700*	<1500
2-Methylphenol (o-cresol)	6,500,000	29,000	<760UJ	<5700	<1500
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<760UJ	<5700	<1500
4-Nitrophenol	NA	NA	<760UJ	<5700	<1500
Acenaphthene	300,000	300,000	**790J**	**11000J**	**2800J**
Anthracene	13,000	13,000	**1900J**	**22000J**	**5900J**
Benzo(a)anthracene	26,000	35,000	**3000J**	**29000J**	**7600J**
Benzo(a)pyrene	2,600	16,000	**1200J**	**14000J**	**4000J**
Benzo(b)fluoranthene	19,000	19,000	**1300J**	**9600J**	**2800J**
Benzo(k)fluoranthene	10,000	10,000	**390J**	<5700	<1500
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<760UJ	<5700	<1500
Chrysene	6,400	6,400	**6000J**	**60000J**	**15000J**
Dibenzo(a,h)anthracene	2,600	11,000	**200J**	**2900J**	<1500
Diethyl phthalate	3,200,000	3,200,000	<760UJ	<5700	<1500
Dimethyl phthalate	6,812,563,000	11,456,000	<760UJ	<5700	<1500
Di-n-butylphthalate	3,798,000	3,798,000	<760UJ	<5700	<1500
Fluoranthene	220,000	220,000	**1500J**	**16000J**	**4500J**
Fluorene	270,000	270,000	**1600J**	**21000J**	**5100J**
Indeno(1,2,3-cd)pyrene	5,100	5,100	**370J**	**1500J**	**420J**
Naphthalene	325,000	3,520	**1100J**	**15000J**	**3500J**

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-30-52 (DUP of PB-SED-30)**	**PB-SED-32**	**PB-SED-34**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D23706/RE**	**A7D40701**	**A7D40704**
		Date Collected	**11/13/2007**	**11/15/2007**	**11/15/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Semivolatile Organic Compounds (µg/kg)					
Phenanthrene	NA	NA	**10000J**	**130000J**	**33000J**
Phenol	32,000,000	560,000	<760UJ	<5700	<1500
Pyrene	140,000	140,000	**3900J**	**53000J**	**13000J**
Pyridine	150,000	50	*<760UJ*	*<5700*	*<1500*
Quinoline	NA	NA	<760UJ	<5700	<1500

(µg/kg)	micrograms per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 9 of 16)

		Location Identification	**PB-SED-36**	**PB-SED-39**	**SED-15**	**SED-17**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**	**Composite**
		Source Area	**West Oxidation Pond**	**Primary Pond**	**Spray Pond**	**Marley Pond**
		Laboratory Sample Identification	**A7D40705**	**A7D17805**	**A7C82901/RE**	**A7C82902**
		Date Collected	**11/15/2007**	**11/10/2007**	**11/1/2007**	**11/1/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	990,000	77,000	<22000	<2700	<3400	<1400
1,3-Dichlorobenzene	NA	NA	<22000	<2700	<3400	<1400
1,4-Dichlorobenzene	92,000	9,500	*<22000*	<2700	<3400	<1400
2,4-Dimethylphenol	14,000,000	81,000	<13000R	<1700	<2100	<870
2,4-Dinitrophenol	1,200,000	2,100	*<13000*	<1700	<2100	<870
2-Methylphenol (o-cresol)	6,500,000	29,000	<13000	<1700	<2100	<870
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	*<13000*	<1700	<2100	<870
4-Nitrophenol	NA	NA	<13000	<1700	<2100	<870
Acenaphthene	300,000	300,000	**16000**	**1800**	**4800J**	**480J**
Anthracene	13,000	13,000	**30000**	**2800**	**27000J**	**1400**
Benzo(a)anthracene	26,000	35,000	**52000**	**4400**	**7300J**	<870
Benzo(a)pyrene	2,600	16,000	**25000**	**2900**	**3800J**	**6200J**
Benzo(b)fluoranthene	19,000	19,000	**19000**	**1800**	<2100	<870
Benzo(k)fluoranthene	10,000	10,000	*<13000*	**490J**	<2100	<870
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<13000	<1700	<2100	<870
Chrysene	6,400	6,400	**96000**	**8700**	**14000J**	**12000J**
Dibenzo(a,h)anthracene	2,600	11,000	*<13000*	<1700	<2100	<870
Diethyl phthalate	3,200,000	3,200,000	<13000	<1700	<2100	<870
Dimethyl phthalate	6,812,563,000	11,456,000	<13000	<1700	<2100	<870
Di-n-butylphthalate	3,798,000	3,798,000	<13000	<1700	<2100	<870
Fluoranthene	220,000	220,000	**24000**	**1700**	**9900J**	**1200**
Fluorene	270,000	270,000	**27000**	**3100**	**8400J**	**500J**
Indeno(1,2,3-cd)pyrene	5,100	5,100	**2400J**	<1700	<2100	<870
Naphthalene	325,000	3,520	**28000**	**3500**	**7300J**	<870

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 10 of 16)

		Location Identification	**PB-SED-36**	**PB-SED-39**	**SED-15**	**SED-17**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**	**Composite**
		Source Area	**West Oxidation Pond**	**Primary Pond**	**Spray Pond**	**Marley Pond**
		Laboratory Sample Identification	**A7D40705**	**A7D17805**	**A7C82901/RE**	**A7C82902**
		Date Collected	**11/15/2007**	**11/10/2007**	**11/1/2007**	**11/1/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
Phenanthrene	NA	NA	**170000**	**12000**	**62000J**	**1200**
Phenol	32,000,000	560,000	<13000	<1700	<2100	<870
Pyrene	140,000	140,000	**92000**	**6600**	**72000J**	**9700J**
Pyridine	150,000	50	*<13000*	*<1700*	*<2100*	*<870*
Quinoline	NA	NA	<13000	<1700	<2100	<870

(µg/kg)	micrograms per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 11 of 16)

		Location Identification	**SED-19**	**SED-21**	**SED-23**	**SED-25**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**	**Composite**
		Source Area	**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #2**	**Aeration Pond #1**
		Laboratory Sample Identification	**A7C82911**	**A7C82912**	**A7C82913**	**A7D07007**
		Date Collected	**11/5/2007**	**11/5/2007**	**11/5/2007**	**11/7/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	990,000	77,000	<230	<220	<220	<7800
1,3-Dichlorobenzene	NA	NA	<230	<220	<220	<7800
1,4-Dichlorobenzene	92,000	9,500	<230	<220	<220	<7800
2,4-Dimethylphenol	14,000,000	81,000	<140	<130	<130	<4700
2,4-Dinitrophenol	1,200,000	2,100	<140	<130	<130	*<4700*
2-Methylphenol (o-cresol)	6,500,000	29,000	<140	<130	<130	<4700
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<140	<130	<130	<4700
4-Nitrophenol	NA	NA	<140	<130	<130	<4700
Acenaphthene	300,000	300,000	<140	<130	<130	<4700
Anthracene	13,000	13,000	<140	<130	**12J**	<4700
Benzo(a)anthracene	26,000	35,000	<140	<130	<130	**1700J**
Benzo(a)pyrene	2,600	16,000	<140	<130	<130	**1400J**
Benzo(b)fluoranthene	19,000	19,000	<140	<130	<130	<4700
Benzo(k)fluoranthene	10,000	10,000	<140	<130	<130	<4700
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	**120J**	<130	<130	<4700
Chrysene	6,400	6,400	<140	<130	<130	**3800J**
Dibenzo(a,h)anthracene	2,600	11,000	<140	<130	<130	*<4700*
Diethyl phthalate	3,200,000	3,200,000	<140	<130	<130	<4700
Dimethyl phthalate	6,812,563,000	11,456,000	<140	<130	<130	<4700
Di-n-butylphthalate	3,798,000	3,798,000	<140	<130	<130	<4700
Fluoranthene	220,000	220,000	**17J**	<130	**12J**	<4700
Fluorene	270,000	270,000	<140	<130	<130	<4700
Indeno(1,2,3-cd)pyrene	5,100	5,100	<140	<130	<130	<4700
Naphthalene	325,000	3,520	<140	<130	<130	*<4700*

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	SED-19	SED-21	SED-23	SED-25
Location Identification			**SED-19**	**SED-21**	**SED-23**	**SED-25**
Sample Depth (inches below top of sediment)			**Composite**	**Composite**	**Composite**	**Composite**
Source Area			**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #2**	**Aeration Pond #1**
Laboratory Sample Identification			**A7C82911**	**A7C82912**	**A7C82913**	**A7D07007**
Date Collected			**11/5/2007**	**11/5/2007**	**11/5/2007**	**11/7/2007**
Semivolatile Organic Compounds (µg/kg)						
Phenanthrene	NA	NA	**23J**	<130	**15J**	**440J**
Phenol	32,000,000	560,000	<140	<130	<130	<4700
Pyrene	140,000	140,000	**24J**	<130	**44J**	**1500J**
Pyridine	150,000	50	*<140*	*<130*	*<130*	*<4700*
Quinoline	NA	NA	<140	<130	<130	<4700

(µg/kg)	micrograms per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**SED-27**	**SED-29**	**SED-31B**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**0-14"**
		Source Area	**Equilization Basin**	**Southeast Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D07009**	**A7D17803**	**A7D23702RE**
		Date Collected	**11/7/2007**	**11/9/2007**	**11/13/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Semivolatile Organic Compounds (µg/kg)					
1,2-Dichlorobenzene	990,000	77,000	<29000	<230	<4600UJ
1,3-Dichlorobenzene	NA	NA	<29000	<230	<4600UJ
1,4-Dichlorobenzene	92,000	9,500	*<29000*	<230	<4600UJ
2,4-Dimethylphenol	14,000,000	81,000	<17000	<140	<2800UJ
2,4-Dinitrophenol	1,200,000	2,100	*<17000*	<140	*<2800UJ*
2-Methylphenol (o-cresol)	6,500,000	29,000	<17000	<140	<2800UJ
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	*<17000*	<140	<2800UJ
4-Nitrophenol	NA	NA	<17000	<140	<2800UJ
Acenaphthene	300,000	300,000	**1600J**	<140	<2800UJ
Anthracene	13,000	13,000	**2800J**	**55J**	**380J**
Benzo(a)anthracene	26,000	35,000	**6800J**	**280J**	**2500J**
Benzo(a)pyrene	2,600	16,000	**4400J**	**360**	**1000J**
Benzo(b)fluoranthene	19,000	19,000	**2300J**	**750J**	**900J**
Benzo(k)fluoranthene	10,000	10,000	*<17000*	<140	**250J**
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<17000	<140	<2800UJ
Chrysene	6,400	6,400	**15000J**	**770J**	**4500J**
Dibenzo(a,h)anthracene	2,600	11,000	**1600J**	**120J**	**320J**
Diethyl phthalate	3,200,000	3,200,000	<17000	<140	<2800UJ
Dimethyl phthalate	6,812,563,000	11,456,000	<17000	<140	<2800UJ
Di-n-butylphthalate	3,798,000	3,798,000	<17000	<140	<2800UJ
Fluoranthene	220,000	220,000	**3300J**	**580J**	**840J**
Fluorene	270,000	270,000	**2800J**	<140	<2800UJ
Indeno(1,2,3-cd)pyrene	5,100	5,100	*<17000*	**150J**	<2800UJ
Naphthalene	325,000	3,520	**2800J**	<140	<2800UJ

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 14 of 16)

		Location Identification	**SED-27**	**SED-29**	**SED-31B**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**0-14"**
		Source Area	**Equilization Basin**	**Southeast Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D07009**	**A7D17803**	**A7D23702RE**
		Date Collected	**11/7/2007**	**11/9/2007**	**11/13/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Semivolatile Organic Compounds (µg/kg)					
Phenanthrene	NA	NA	**16000J**	**230**	**880J**
Phenol	32,000,000	560,000	<17000	<140	<2800UJ
Pyrene	140,000	140,000	**14000J**	**500J**	**4400J**
Pyridine	150,000	50	*<17000*	*<140*	*<2800UJ*
Quinoline	NA	NA	<17000	<140	<2800UJ

(µg/kg)	micrograms per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**SED-33B**	**SED-35B**	**SED-37**	**SED-38**
		Sample Depth (inches below top of sediment)	**0-6"**	**0-4"**	**Composite**	**Composite**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**	**Primary Pond**
		Laboratory Sample Identification	**A7D23701/RE**	**A7D17811**	**A7D17809**	**A7D17807**
		Date Collected	**11/13/2007**	**11/12/2007**	**11/12/2007**	**11/12/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	990,000	77,000	<240UJ	<19000	<23000	<2500
1,3-Dichlorobenzene	NA	NA	<240UJ	<19000	<23000	<2500
1,4-Dichlorobenzene	92,000	9,500	<240UJ	*<19000*	*<23000*	<2500
2,4-Dimethylphenol	14,000,000	81,000	<150UJ	<12000	<14000	<1500
2,4-Dinitrophenol	1,200,000	2,100	<150UJ	*<12000*	*<14000*	<1500
2-Methylphenol (o-cresol)	6,500,000	29,000	<150UJ	<12000	<14000	<1500
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<150UJ	*<12000*	*<14000*	<1500
4-Nitrophenol	NA	NA	<150UJ	<12000	<14000	<1500
Acenaphthene	300,000	300,000	**340J**	**890J**	<14000	**2100**
Anthracene	13,000	13,000	**19J**	**1800J**	**17000**	**2700**
Benzo(a)anthracene	26,000	35,000	**13000J**	**32000**	**93000**	**6000**
Benzo(a)pyrene	2,600	16,000	**7800J**	**26000**	**56000**	**4300**
Benzo(b)fluoranthene	19,000	19,000	**7500J**	**20000**	**46000**	**3900**
Benzo(k)fluoranthene	10,000	10,000	**1400J**	*<12000*	**8200J**	<1500
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<150UJ	<12000	<14000	**2000**
Chrysene	6,400	6,400	**29000J**	**97000**	**210000**	**15000**
Dibenzo(a,h)anthracene	2,600	11,000	**1800J**	*<12000*	*<14000*	<1500
Diethyl phthalate	3,200,000	3,200,000	<150UJ	<12000	<14000	<1500
Dimethyl phthalate	6,812,563,000	11,456,000	<150UJ	<12000	<14000	<1500
Di-n-butylphthalate	3,798,000	3,798,000	<150UJ	<12000	<14000	<1500
Fluoranthene	220,000	220,000	**1600J**	**15000**	**37000**	**3100**
Fluorene	270,000	270,000	**160J**	<12000	**7600J**	**3400**
Indeno(1,2,3-cd)pyrene	5,100	5,100	**940J**	*<12000*	*<14000*	<1500
Naphthalene	325,000	3,520	<150UJ	*<12000*	*<14000*	**2800**

Table 6b

Pond Sediment Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	SED-33B	SED-35B	SED-37	SED-38
Location Identification			**SED-33B**	**SED-35B**	**SED-37**	**SED-38**
Sample Depth (inches below top of sediment)			**0-6"**	**0-4"**	**Composite**	**Composite**
Source Area			**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**	**Primary Pond**
Laboratory Sample Identification			**A7D23701/RE**	**A7D17811**	**A7D17809**	**A7D17807**
Date Collected			**11/13/2007**	**11/12/2007**	**11/12/2007**	**11/12/2007**
Semivolatile Organic Compounds (µg/kg)						
Phenanthrene	NA	NA	**12J**	**6200J**	**39000**	**12000**
Phenol	32,000,000	560,000	<150UJ	<12000	<14000	<1500
Pyrene	140,000	140,000	**22000J**	**74000**	**150000**	**10000**
Pyridine	150,000	50	*<150UJ*	*<12000*	*<14000*	*<1500*
Quinoline	NA	NA	<150UJ	<12000	<14000	<1500

(µg/kg)	micrograms per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 34)

		Location Identification	**PB-SED-14A-28-40**	**PB-SED-14A-58-70**	**PB-SED-14-BOS**	**PB-SED-14-TOS**
		Sample Depth (inches below top of sediment)	**0-12"**	**30-42"**	**Composite**	**Composite**
		Source Area	**Spray Pond**	**Spray Pond**	**Spray Pond**	**Spray Pond**
		Laboratory Sample Identification	**A7C82909**	**A7C82910**	**A7C82908**	**A7C82907**
		Date Collected	**11/2/2007**	**11/2/2007**	**11/2/2007**	**11/2/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	n/a	n/a	**61000**	**39000**
Gasoline Range Organics	450	150	**1300**	**2400**	n/a	n/a
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-14A-28-40**	**PB-SED-14A-58-70**	**PB-SED-14-BOS**	**PB-SED-14-TOS**
		Sample Depth (inches below top of sediment)	**0-12"**	**30-42"**	**Composite**	**Composite**
		Source Area	**Spray Pond**	**Spray Pond**	**Spray Pond**	**Spray Pond**
		Laboratory Sample Identification	**A7C82909**	**A7C82910**	**A7C82908**	**A7C82907**
		Date Collected	**11/2/2007**	**11/2/2007**	**11/2/2007**	**11/2/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 34)

		Location Identification	**PB-SED-16-BOS**	**PB-SED-16D-47-59**	**PB-SED-16D-84-96**
		Sample Depth (inches below top of sediment)	**Composite**	**0-12"**	**37-49"**
		Source Area	**Marley Pond**	**Marley Pond**	**Marley Pond**
		Laboratory Sample Identification	**A7C82904**	**A8034203**	**A7C82906**
		Date Collected	**11/2/2007**	**1/9/2008**	**11/2/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**3300J**	n/a	n/a
Gasoline Range Organics	450	150	n/a	**20**	**1000**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-16-BOS**	**PB-SED-16D-47-59**	**PB-SED-16D-84-96**
		Sample Depth (inches below top of sediment)	**Composite**	**0-12"**	**37-49"**
		Source Area	**Marley Pond**	**Marley Pond**	**Marley Pond**
		Laboratory Sample Identification	**A7C82904**	**A8034203**	**A7C82906**
		Date Collected	**11/2/2007**	**1/9/2008**	**11/2/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 34)

		Location Identification	**PB-SED-16-TOS**	**PB-SED-18**	**PB-SED-18D-74-78**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**0-4"**
		Source Area	**Marley Pond**	**Polishing Pond**	**Polishing Pond**
		Laboratory Sample Identification	**A7C82903**	**A7D07002**	**A7D07001/360-13440-1**
		Date Collected	**11/2/2007**	**11/6/2007**	**11/6/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**1000J**	**550**	n/a
Gasoline Range Organics	450	150	n/a	n/a	**12**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	<16
Acenaphthene	300	300	n/a	n/a	<16
Acenaphthylene	NA	NA	n/a	n/a	<16
Anthracene	13	13	n/a	n/a	*<16*
Benzo(a)anthracene	26	35	n/a	n/a	<16
Benzo(a)pyrene	2.6	16	n/a	n/a	*<16*
Benzo(b)fluoranthene	19	19	n/a	n/a	<16
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	<16
Benzo(k)fluoranthene	10	10	n/a	n/a	*<16*
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	**380**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	**380**
C19-C36 Aliphatics	NA	NA	n/a	n/a	**320**
C9-C18 Aliphatics	NA	NA	n/a	n/a	**250**
Chrysene	6.4	6.4	n/a	n/a	*<16*
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	*<16*
Fluoranthene	220	220	n/a	n/a	<16
Fluorene	270	270	n/a	n/a	<16
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	*<16*
Naphthalene	325	3.52	n/a	n/a	*<16*
Phenanthrene	NA	NA	n/a	n/a	<16
Pyrene	140	140	n/a	n/a	<16
Total EPH	NA	NA	n/a	n/a	**940**

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 6 of 34)

		Location Identification	**PB-SED-16-TOS**	**PB-SED-18**	**PB-SED-18D-74-78**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**0-4"**
		Source Area	**Marley Pond**	**Polishing Pond**	**Polishing Pond**
		Laboratory Sample Identification	**A7C82903**	**A7D07002**	**A7D07001/360-13440-1**
		Date Collected	**11/2/2007**	**11/6/2007**	**11/6/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	*<0.42*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	<8.4
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	<8.4
C9-C10 Aromatics	NA	NA	n/a	n/a	**13**
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	<8.4
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**21**
Ethylbenzene	650	55	n/a	n/a	<0.42
m+p-Xylenes	700	700	n/a	n/a	<0.084
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	*<0.84*
Napthalene	325	3.52	n/a	n/a	<0.84
o-Xylenes	NA	NA	n/a	n/a	<0.42
Toluene	1000	40	n/a	n/a	<0.42
Total VPH	NA	NA	n/a	n/a	**13**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-18D-74-78**	**PB-SED-20**	**PB-SED-20D-144-160**
		Sample Depth (inches below top of sediment)	**0-4"**	**Composite**	**0-16"**
		Source Area	**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #3**
		Laboratory Sample Identification	**A8034202**	**A7D07003**	**A7D07004**
		Date Collected	**1/9/2008**	**11/6/2007**	**11/6/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	n/a	**2700**	n/a
Gasoline Range Organics	450	150	<7.1	n/a	**97**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 8 of 34)

		Location Identification	**PB-SED-18D-74-78**	**PB-SED-20**	**PB-SED-20D-144-160**
		Sample Depth (inches below top of sediment)	**0-4"**	**Composite**	**0-16"**
		Source Area	**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #3**
		Laboratory Sample Identification	**A8034202**	**A7D07003**	**A7D07004**
		Date Collected	**1/9/2008**	**11/6/2007**	**11/6/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-22**	**PB-SED-22D-158-164**	**PB-SED-24**
		Sample Depth (inches below top of sediment)	**Composite**	**0-6"**	**Composite**
		Source Area	**Aeration Pond #2**	**Aeration Pond #2**	**Aeration Pond #1**
		Laboratory Sample Identification	**A7D07005**	**A7D07006**	**A7D07011**
		Date Collected	**11/7/2007**	**11/7/2007**	**11/8/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**270**	n/a	**4500J**
Gasoline Range Organics	450	150	n/a	**8.6**	n/a
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-22**	**PB-SED-22D-158-164**	**PB-SED-24**
		Sample Depth (inches below top of sediment)	**Composite**	**0-6"**	**Composite**
		Source Area	**Aeration Pond #2**	**Aeration Pond #2**	**Aeration Pond #1**
		Laboratory Sample Identification	**A7D07005**	**A7D07006**	**A7D07011**
		Date Collected	**11/7/2007**	**11/7/2007**	**11/8/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-24B-156-162**	**PB-SED-26B-66-78**	**PB-SED-26B-88-100**
		Sample Depth (inches below top of sediment)	**0-6"**	**0-12"**	**22-34"**
		Source Area	**Aeration Pond #1**	**Equilization Basin**	**Equilization Basin**
		Laboratory Sample Identification	**A8034201**	**A7D07014/360-13440-2**	**A7D07016**
		Date Collected	**1/9/2008**	**11/8/2007**	**11/8/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	n/a	n/a	n/a
Gasoline Range Organics	450	150	<5	**38**	**160**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	*<190*	n/a
Acenaphthene	300	300	n/a	<190	n/a
Acenaphthylene	NA	NA	n/a	<190	n/a
Anthracene	13	13	n/a	*<190*	n/a
Benzo(a)anthracene	26	35	n/a	*<190*	n/a
Benzo(a)pyrene	2.6	16	n/a	*<190*	n/a
Benzo(b)fluoranthene	19	19	n/a	*<190*	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	<190UJ	n/a
Benzo(k)fluoranthene	10	10	n/a	*<190*	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	**33000**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	**33000**	n/a
C19-C36 Aliphatics	NA	NA	n/a	**22000**	n/a
C9-C18 Aliphatics	NA	NA	n/a	**16000**	n/a
Chrysene	6.4	6.4	n/a	*<190*	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	*<190UJ*	n/a
Fluoranthene	220	220	n/a	<190	n/a
Fluorene	270	270	n/a	<190	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	*<190UJ*	n/a
Naphthalene	325	3.52	n/a	*<190*	n/a
Phenanthrene	NA	NA	n/a	<190	n/a
Pyrene	140	140	n/a	*<190*	n/a
Total EPH	NA	NA	n/a	**71000**	n/a

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Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**PB-SED-24B-156-162**	**PB-SED-26B-66-78**	**PB-SED-26B-88-100**
		Sample Depth (inches below top of sediment)	**0-6"**	**0-12"**	**22-34"**
		Source Area	**Aeration Pond #1**	**Equilization Basin**	**Equilization Basin**
		Laboratory Sample Identification	**A8034201**	**A7D07014/360-13440-2**	**A7D07016**
		Date Collected	**1/9/2008**	**11/8/2007**	**11/8/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	**7.9**	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	<120	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	<120	n/a
C9-C10 Aromatics	NA	NA	n/a	<120	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	**140**	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	**150**	n/a
Ethylbenzene	650	55	n/a	<5.9	n/a
m+p-Xylenes	700	700	n/a	<1.2	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	*<12*	n/a
Napthalene	325	3.52	n/a	*<12*	n/a
o-Xylenes	NA	NA	n/a	<5.9	n/a
Toluene	1000	40	n/a	<5.9	n/a
Total VPH	NA	NA	n/a	**140**	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

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Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**PB-SED-26-BOS**	**PB-SED-26-TOS**	**PB-SED-28**	**PB-SED-28D**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**	**6-18"**
		Source Area	**Equilization Basin**	**Equilization Basin**	**Southeast Pond**	**Southeast Pond**
		Laboratory Sample Identification	**A7D07015**	**A7D07013**	**A7D17801**	**A7D17802**
		Date Collected	**11/8/2007**	**11/8/2007**	**11/9/2007**	**11/9/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**20000**	**33000**	**3500**	n/a
Gasoline Range Organics	450	150	n/a	n/a	n/a	**110**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	PB-SED-26-BOS	PB-SED-26-TOS	PB-SED-28	PB-SED-28D
Location Identification			**PB-SED-26-BOS**	**PB-SED-26-TOS**	**PB-SED-28**	**PB-SED-28D**
Sample Depth (inches below top of sediment)			**Composite**	**Composite**	**Composite**	**6-18"**
Source Area			**Equilization Basin**	**Equilization Basin**	**Southeast Pond**	**Southeast Pond**
Laboratory Sample Identification			**A7D07015**	**A7D07013**	**A7D17801**	**A7D17802**
Date Collected			**11/8/2007**	**11/8/2007**	**11/9/2007**	**11/9/2007**
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**PB-SED-30**	**PB-SED-30-52 (DUP of PB-SED-30)**	**PB-SED-30D**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**0-15"**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D23703**	**A7D23706**	**A7D23704**
		Date Collected	**11/13/2007**	**11/13/2007**	**11/13/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**12000**	**11000**	n/a
Gasoline Range Organics	450	150	n/a	n/a	**260J**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

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Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**PB-SED-30**	**PB-SED-30-52 (DUP of PB-SED-30)**	**PB-SED-30D**
		Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**0-15"**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D23703**	**A7D23706**	**A7D23704**
		Date Collected	**11/13/2007**	**11/13/2007**	**11/13/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

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Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**PB-SED-30D-52 (DUP of PB-SED-30D)**	**PB-SED-32**	**PB-SED-32D**
		Sample Depth (inches below top of sediment)	**0-15"**	**Composite**	**0-6"**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D23705**	**A7D40701**	**A7D40702**
		Date Collected	**11/13/2007**	**11/15/2007**	**11/15/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	n/a	**56000**	n/a
Gasoline Range Organics	450	150	**180**	n/a	**200**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-30D-52 (DUP of PB-SED-30D)**	**PB-SED-32**	**PB-SED-32D**
		Sample Depth (inches below top of sediment)	**0-15"**	**Composite**	**0-6"**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D23705**	**A7D40701**	**A7D40702**
		Date Collected	**11/13/2007**	**11/15/2007**	**11/15/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification	**PB-SED-34**	**PB-SED-34D**	**PB-SED-36**
		Sample Depth (inches below top of sediment)	**Composite**	**0-12"**	**Composite**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D40704**	**A7D40703/360-13595-1**	**A7D40705**
		Date Collected	**11/15/2007**	**11/15/2007**	**11/15/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**13000**	n/a	**45000**
Gasoline Range Organics	450	150	n/a	**420**	n/a
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	**11**	n/a
Acenaphthene	300	300	n/a	**6.3**	n/a
Acenaphthylene	NA	NA	n/a	**4.9**	n/a
Anthracene	13	13	n/a	<1.6	n/a
Benzo(a)anthracene	26	35	n/a	**2.2**	n/a
Benzo(a)pyrene	2.6	16	n/a	<1.6	n/a
Benzo(b)fluoranthene	19	19	n/a	<1.6	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	<1.6	n/a
Benzo(k)fluoranthene	10	10	n/a	<1.6	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	**3000**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	**3100**	n/a
C19-C36 Aliphatics	NA	NA	n/a	**2100**	n/a
C9-C18 Aliphatics	NA	NA	n/a	**1800**	n/a
Chrysene	6.4	6.4	n/a	**5.5**	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	<1.6	n/a
Fluoranthene	220	220	n/a	**2.8**	n/a
Fluorene	270	270	n/a	**11**	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	<1.6	n/a
Naphthalene	325	3.52	n/a	<1.6	n/a
Phenanthrene	NA	NA	n/a	**16**	n/a
Pyrene	140	140	n/a	**17**	n/a
Total EPH	NA	NA	n/a	**7000**	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 20 of 34)

		Location Identification	**PB-SED-34**	**PB-SED-34D**	**PB-SED-36**
		Sample Depth (inches below top of sediment)	**Composite**	**0-12"**	**Composite**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D40704**	**A7D40703/360-13595-1**	**A7D40705**
		Date Collected	**11/15/2007**	**11/15/2007**	**11/15/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	*<4.8*	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	**160**	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	**160**	n/a
C9-C10 Aromatics	NA	NA	n/a	<96	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	**160**	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	**160**	n/a
Ethylbenzene	650	55	n/a	<4.8	n/a
m+p-Xylenes	700	700	n/a	<0.96	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	*<9.6*	n/a
Napthalene	325	3.52	n/a	*<9.6*	n/a
o-Xylenes	NA	NA	n/a	<4.8	n/a
Toluene	1000	40	n/a	<4.8	n/a
Total VPH	NA	NA	n/a	**330**	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 21 of 34)

		Location Identification	PB-SED-36D	PB-SED-39	PB-SED-39D	SED-15
		Sample Depth (inches below top of sediment)	0-12"	Composite	0-6"	Composite
		Source Area	West Oxidation Pond	Primary Pond	Primary Pond	Spray Pond
		Laboratory Sample Identification	A7D40706	A7D17805	A7D17806	A7C82901
		Date Collected	11/15/2007	11/10/2007	11/10/2007	11/1/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	n/a	**5800**	n/a	**33000**
Gasoline Range Organics	450	150	**980**	n/a	**460**	**290**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**PB-SED-36D**	**PB-SED-39**	**PB-SED-39D**	**SED-15**
		Sample Depth (inches below top of sediment)	**0-12"**	**Composite**	**0-6"**	**Composite**
		Source Area	**West Oxidation Pond**	**Primary Pond**	**Primary Pond**	**Spray Pond**
		Laboratory Sample Identification	**A7D40706**	**A7D17805**	**A7D17806**	**A7C82901**
		Date Collected	**11/15/2007**	**11/10/2007**	**11/10/2007**	**11/1/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**SED-17**	**SED-17**	**SED-19**	**SED-21**
		Sample Depth (inches below top of sediment)	**Composite**	**0-12"**	**Composite**	**Composite**
		Source Area	**Marley Pond**	**Marley Pond**	**Polishing Pond**	**Aeration Pond #3**
		Laboratory Sample Identification	**A7C82902RE**	**A8026101**	**A7C82911**	**A7C82912**
		Date Collected	**11/1/2007**	**1/8/2008**	**11/5/2007**	**11/5/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**3700J**	n/a	**14**	<3.3
Gasoline Range Organics	450	150	**6.1**	<5	**18**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**SED-17**	**SED-17**	**SED-19**	**SED-21**
		Sample Depth (inches below top of sediment)	**Composite**	**0-12"**	**Composite**	**Composite**
		Source Area	**Marley Pond**	**Marley Pond**	**Polishing Pond**	**Aeration Pond #3**
		Laboratory Sample Identification	**A7C82902RE**	**A8026101**	**A7C82911**	**A7C82912**
		Date Collected	**11/1/2007**	**1/8/2008**	**11/5/2007**	**11/5/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	SED-21D	SED-23	SED-23D	SED-25
Location Identification			**SED-21D**	**SED-23**	**SED-23D**	**SED-25**
Sample Depth (inches below top of sediment)			**0-8"**	**Composite**	**0-12"**	**Composite**
Source Area			**Aeration Pond #3**	**Aeration Pond #2**	**Aeration Pond #2**	**Aeration Pond #1**
Laboratory Sample Identification			**A8026105**	**A7C82913**	**A8026106**	**A7D07007**
Date Collected			**1/8/2008**	**11/5/2007**	**1/8/2008**	**11/7/2007**
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	n/a	**57**	n/a	**4400J**
Gasoline Range Organics	450	150	<5	**4**	**24**	n/a
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**SED-21D**	**SED-23**	**SED-23D**	**SED-25**
		Sample Depth (inches below top of sediment)	**0-8"**	**Composite**	**0-12"**	**Composite**
		Source Area	**Aeration Pond #3**	**Aeration Pond #2**	**Aeration Pond #2**	**Aeration Pond #1**
		Laboratory Sample Identification	**A8026105**	**A7C82913**	**A8026106**	**A7D07007**
		Date Collected	**1/8/2008**	**11/5/2007**	**1/8/2008**	**11/7/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**SED-25B**	**SED-27**	**SED-27B**	**SED-29**
		Sample Depth (inches below top of sediment)	**0-12"**	**Composite**	**0-8"**	**Composite**
		Source Area	**Aeration Pond #1**	**Equilization Basin**	**Equilization Basin**	**Southeast Pond**
		Laboratory Sample Identification	**A8026108**	**A7D07009**	**A7D07010**	**A7D17803**
		Date Collected	**1/8/2008**	**11/7/2007**	**11/7/2008**	**11/9/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	n/a	**5700J**	n/a	**30**
Gasoline Range Organics	450	150	**9.4**	n/a	**16**	n/a
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 28 of 34)

		Location Identification	**SED-25B**	**SED-27**	**SED-27B**	**SED-29**
		Sample Depth (inches below top of sediment)	**0-12"**	**Composite**	**0-8"**	**Composite**
		Source Area	**Aeration Pond #1**	**Equilization Basin**	**Equilization Basin**	**Southeast Pond**
		Laboratory Sample Identification	**A8026108**	**A7D07009**	**A7D07010**	**A7D17803**
		Date Collected	**1/8/2008**	**11/7/2007**	**11/7/2008**	**11/9/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**SED-29D**	**SED-31B**	**SED-33B**
		Sample Depth (inches below top of sediment)	**0-12"**	**0-14"**	**0-6"**
		Source Area	**Southeast Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A8026107**	**A7D23702**	**A7D23701**
		Date Collected	**1/8/2008**	**11/13/2007**	**11/13/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	n/a	**730**	**590**
Gasoline Range Organics	450	150	<5	**1.3J**	**2.9J**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**SED-29D**	**SED-31B**	**SED-33B**
		Sample Depth (inches below top of sediment)	**0-12"**	**0-14"**	**0-6"**
		Source Area	**Southeast Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A8026107**	**A7D23702**	**A7D23701**
		Date Collected	**1/8/2008**	**11/13/2007**	**11/13/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**SED-35B**	**SED-35B**	**SED-37**
		Sample Depth (inches below top of sediment)	**0-4"**	**0-4"**	**Composite**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D17811**	**A8026104**	**A7D17809**
		Date Collected	**11/12/2007**	**1/8/2008**	**11/12/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**1900**	n/a	**41000**
Gasoline Range Organics	450	150	<5	<5	n/a
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**SED-35B**	**SED-35B**	**SED-37**
		Sample Depth (inches below top of sediment)	**0-4"**	**0-4"**	**Composite**
		Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
		Laboratory Sample Identification	**A7D17811**	**A8026104**	**A7D17809**
		Date Collected	**11/12/2007**	**1/8/2008**	**11/12/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 33 of 34)

		Location Identification	**SED-37B**	**SED-38**	**SED-38D**
		Sample Depth (inches below top of sediment)	**0-6"**	**Composite**	**0-12"**
		Source Area	**West Oxidation Pond**	**Primary Pond**	**Primary Pond**
		Laboratory Sample Identification	**A8026103**	**A7D17807**	**A8026102**
		Date Collected	**1/8/2008**	**11/12/2007**	**1/8/2008**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	n/a	**250**	n/a
Gasoline Range Organics	450	150	**16**	n/a	**580**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

Table 6c

Pond Sediment Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification	**SED-37B**	**SED-38**	**SED-38D**
		Sample Depth (inches below top of sediment)	**0-6"**	**Composite**	**0-12"**
		Source Area	**West Oxidation Pond**	**Primary Pond**	**Primary Pond**
		Laboratory Sample Identification	**A8026103**	**A7D17807**	**A8026102**
		Date Collected	**1/8/2008**	**11/12/2007**	**1/8/2008**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
UJ	Potential false negative due to low QC recoveries.
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 6d

Pond Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 8)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario	PB-SED-14-BOS	PB-SED-14-TOS	PB-SED-16-BOS	PB-SED-16-TOS
Location Identification		**PB-SED-14-BOS**	**PB-SED-14-TOS**	**PB-SED-16-BOS**	**PB-SED-16-TOS**
Sample Depth (inches below top of sediment)		**Composite**	**Composite**	**Composite**	**Composite**
Source Area		**Spray Pond**	**Spray Pond**	**Marley Pond**	**Marley Pond**
Laboratory Sample Identification		**A7C82908**	**A7C82907**	**A7C82904**	**A7C82903**
Date Collected		**11/2/2007**	**11/2/2007**	**11/2/2007**	**11/2/2007**
ICP Metals (mg/kg)					
Antimony	820	<29.7	<41.5	<26.2	<30.2
Arsenic	38	**8**	**13.1**	**6.5**	**5.7**
Barium	140000	**172**	**212**	**470**	**145**
Beryllium	4100	<0.4	<0.55	**0.78**	**0.51**
Cadmium	1000	**1**	**1.2**	**0.62**	**0.65**
Chromium, Total	4000	**40.3**	**260**	**44.3**	**28.3**
Cobalt	NA	**8.8**	**11.1**	**8**	**5.2**
Lead	1000	**854**	**117**	**84**	**180**
Magnesium	NA	**5300**	**5020**	**6670**	**3920**
Manganese	95000	**791**	**577**	**319**	**304**
Mercury	20	**0.082**	**0.593**	**0.152**	**0.297**
Nickel	41000	**21.5**	**23.5**	**20.2**	**14.4**
Potassium	NA	**2890**	**2950**	**2090**	**1550**
Selenium	10000	<7.9	<11.1	<7	<8.1
Silver	10000	<0.99	<1.4	<0.87	<1
Vanadium	14000	**35.8**	**42.1**	**37.3**	**25.8**
Zinc	610000	**156**	**351**	**106**	**106**

(mg/kg)	milligrams per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample

Table 6d

Pond Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 8)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario	PB-SED-18	PB-SED-20	PB-SED-22	PB-SED-24
Location Identification		**PB-SED-18**	**PB-SED-20**	**PB-SED-22**	**PB-SED-24**
Sample Depth (inches below top of sediment)		**Composite**	**Composite**	**Composite**	**Composite**
Source Area		**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #2**	**Aeration Pond #1**
Laboratory Sample Identification		**A7D07002**	**A7D07003**	**A7D07005**	**A7D07011**
Date Collected		**11/6/2007**	**11/6/2007**	**11/7/2007**	**11/8/2007**
ICP Metals (mg/kg)					
Antimony	820	<32.6	<38	<22.1	<33.1
Arsenic	38	**7.7**	**17.4**	**7.3**	**10.2**
Barium	140000	**167**	**274J**	**193**	**228**
Beryllium	4100	**0.69**	**0.71**	**0.75**	**0.74**
Cadmium	1000	<0.43	<0.51	<0.29	<0.44
Chromium, Total	4000	**164**	**1150**	**298**	**526**
Cobalt	NA	**6.9**	**8.1**	**8.8**	**7.7**
Lead	1000	**41.6**	**35.7**	**20.4**	**36.5**
Magnesium	NA	**2300**	**2750**	**2230**	**3030**
Manganese	95000	**238**	**375J**	**366**	**346**
Mercury	20	**0.127**	**0.482**	**0.086**	**0.845**
Nickel	41000	**14.7**	**19.4**	**14.7**	**19.4**
Potassium	NA	**2170**	**2290**	**2320**	**2220**
Selenium	10000	<8.7	**18.7J**	<5.9	<8.8
Silver	10000	<1.2	<1.3	<0.78	<1.1
Vanadium	14000	**30.1**	**39.3**	**30.8**	**37.3**
Zinc	610000	**108**	**434**	**133**	**209**

(mg/kg)	milligrams per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample

Table 6d

Pond Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario	PB-SED-26-BOS	PB-SED-26-TOS	PB-SED-28	PB-SED-30
Location Identification		**PB-SED-26-BOS**	**PB-SED-26-TOS**	**PB-SED-28**	**PB-SED-30**
Sample Depth (inches below top of sediment)		**Composite**	**Composite**	**Composite**	**Composite**
Source Area		**Equilization Basin**	**Equilization Basin**	**Southeast Pond**	**West Oxidation Pond**
Laboratory Sample Identification		**A7D07015**	**A7D07013**	**A7D17801**	**A7D23703**
Date Collected		**11/8/2007**	**11/8/2007**	**11/9/2007**	**11/13/2007**
ICP Metals (mg/kg)					
Antimony	820	<25.9	<37	<28.9	<28.5
Arsenic	38	**9.8**	**13.8**	**15.5**	**13.6J**
Barium	140000	**158**	**237**	**162**	**172**
Beryllium	4100	**0.57**	**0.7**	**0.7**	**0.87**
Cadmium	1000	<0.34	**0.82**	**0.51**	**0.6**
Chromium, Total	4000	**551**	**563**	**1660**	**915**
Cobalt	NA	**5.7**	**8.1**	**6.8**	**6.4**
Lead	1000	**29.7**	**75.9**	**488**	**2440**
Magnesium	NA	**2730**	**3670**	**2090**	**2520**
Manganese	95000	**253**	**411**	**243**	**267J**
Mercury	20	**0.58**	**0.531**	**0.5**	**0.279**
Nickel	41000	**17.1**	**28.4**	**14.4**	**15.2**
Potassium	NA	**1940**	**2170**	**1820**	**2200**
Selenium	10000	<6.9	<9.9	**14.4**	**13.8J**
Silver	10000	<0.86	<1.4	<0.96	<0.95
Vanadium	14000	**33.6**	**51.7**	**31.4**	**36.1**
Zinc	610000	**268**	**380**	**564**	**342**

(mg/kg)	milligrams per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample

Table 6d

Pond Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 8)

	Location Identification	**PB-SED-30-52 (DUP of PB-SED-30)**	**PB-SED-32**	**PB-SED-34**
	Sample Depth (inches below top of sediment)	**Composite**	**Composite**	**Composite**
	Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
	Laboratory Sample Identification	**A7D23706**	**A7D40701**	**A7D40704**
	Date Collected	**11/13/2007**	**11/15/2007**	**11/15/2007**
Analyte/Methods (Units)				
	Kansas Tier II Risk-Based Standards Soil Pathway [(A)]			
	Non-Residental Scenario			
ICP Metals (mg/kg)				
Antimony	820	<23.1	<41.2	<22.5
Arsenic	38	**4.6**	**6.1**	**4.7**
Barium	140000	**139**	**223**	**113**
Beryllium	4100	**0.84**	**1.5**	**0.58**
Cadmium	1000	**0.45**	<0.55	<0.3
Chromium, Total	4000	**381**	**460**	**305**
Cobalt	NA	**8.9**	**11.9**	**5.9**
Lead	1000	**527**	**847**	**427**
Magnesium	NA	**2280**	**4270**	**1880**
Manganese	95000	**234**	**395**	**246**
Mercury	20	**0.256**	**0.378**	**0.263**
Nickel	41000	**13.2**	**21.2**	**10.5**
Potassium	NA	**2190**	**3950**	**1500**
Selenium	10000	<6.2	<11	<6
Silver	10000	<0.77	<1.4	<0.75
Vanadium	14000	**34.8**	**60**	**21.7**
Zinc	610000	**155**	**189**	**140**

(mg/kg)	milligrams per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample

Table 6d

Pond Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 8)

Analyte/Methods (Units)	Location Identification	PB-SED-36	PB-SED-39	SED-15	SED-17
	Sample Depth (inches below top of sediment)	Composite	Composite	Composite	Composite
	Source Area	West Oxidation Pond	Primary Pond	Spray Pond	Marley Pond
	Laboratory Sample Identification	A7D40705	A7D17805	A7C82901	A7C82902
	Date Collected	11/15/2007	11/10/2007	11/1/2007	11/1/2007
	Kansas Tier II Risk-Based Standards Soil Pathway [(A)]				
	Non-Residental Scenario				
ICP Metals (mg/kg)					
Antimony	820	<33.5	<26.4	<33.7	<27.3
Arsenic	38	**14.6**	**6.1**	**8.9**	**8.2**
Barium	140000	**186**	**159**	**304**	**282**
Beryllium	4100	**0.82**	**0.77**	<0.45	**0.87**
Cadmium	1000	**0.72**	**0.5**	**3.7**	**1.8**
Chromium, Total	4000	**1570**	**159**	**496**	**60.4**
Cobalt	NA	**7.4**	**8.8**	**9.9**	**9.2**
Lead	1000	**1160**	**235**	**722**	**257**
Magnesium	NA	**3290**	**3020**	**6230**	**5080**
Manganese	95000	**269**	**314**	**6090**	**405**
Mercury	20	**0.939**	**0.129**	**0.448**	**0.244**
Nickel	41000	**17.9**	**18**	**20.7**	**22.2**
Potassium	NA	**2060**	**2470**	**2290**	**2340**
Selenium	10000	**10.7**	<7	<9	<7.3
Silver	10000	<1.1	<0.88	<1.1	<0.91
Vanadium	14000	**37.2**	**31.7**	**34**	**40.1**
Zinc	610000	**570**	**126**	**529**	**164**

(mg/kg)	milligrams per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample

Table 6d

Pond Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 6 of 8)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario	SED-19	SED-21	SED-23	SED-25
Location Identification		**SED-19**	**SED-21**	**SED-23**	**SED-25**
Sample Depth (inches below top of sediment)		**Composite**	**Composite**	**Composite**	**Composite**
Source Area		**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #2**	**Aeration Pond #1**
Laboratory Sample Identification		**A7C82911**	**A7C82912**	**A7C82913**	**A7D07007**
Date Collected		**11/5/2007**	**11/5/2007**	**11/5/2007**	**11/7/2007**
ICP Metals (mg/kg)					
Antimony	820	<21.6	<21.8	<21.6	<34.3
Arsenic	38	<2.9	**5.1**	**4.6**	**17.1**
Barium	140000	**98**	**138**	**139**	**312**
Beryllium	4100	**0.62**	**0.69**	**0.73**	**0.58**
Cadmium	1000	<0.29	<0.29	<0.29	**0.51**
Chromium, Total	4000	**31.9**	**17.6**	**36.5**	**587**
Cobalt	NA	**6.2**	**7.1**	**8.1**	**6.4**
Lead	1000	**20.6**	**13.3**	**14.4**	**45.5**
Magnesium	NA	**2370**	**2050**	**2460**	**2830**
Manganese	95000	**329**	**220**	**156**	**723**
Mercury	20	<0.024	<0.022	**0.039**	**1.1**
Nickel	41000	**10.7**	**17**	**14.5**	**21.4**
Potassium	NA	**1530**	**1840**	**2110**	**2010**
Selenium	10000	<5.8	<5.8	<5.8	<9.2
Silver	10000	<0.72	<0.73	<0.72	<1.2
Vanadium	14000	**23.8**	**28**	**28.9**	**35.8**
Zinc	610000	**33.3**	**33.2**	**46.5**	**243**

(mg/kg)	milligrams per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample

Table 6d

Pond Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 7 of 8)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario	SED-27	SED-29	SED-31B
Location Identification		**SED-27**	**SED-29**	**SED-31B**
Sample Depth (inches below top of sediment)		**Composite**	**Composite**	**0-14"**
Source Area		**Equilization Basin**	**Southeast Pond**	**West Oxidation Pond**
Laboratory Sample Identification		**A7D07009**	**A7D17803**	**A7D23702**
Date Collected		**11/2/2007**	**11/9/2007**	**11/13/2007**
ICP Metals (mg/kg)				
Antimony	820	<25.8	<20.4	<21.5
Arsenic	38	**10.3**	<2.7	**5**
Barium	140000	**196**	**133**	**113**
Beryllium	4100	**0.73**	**0.75**	**0.78**
Cadmium	1000	<0.34	<0.27	**0.3**
Chromium, Total	4000	**380**	**61.8**	**24.3**
Cobalt	NA	**7.9**	**8.2**	**8.9**
Lead	1000	**22.8**	**29.3**	**22.9**
Magnesium	NA	**2580**	**1730**	**1850**
Manganese	95000	**332**	**114**	**275**
Mercury	20	**0.439**	**0.034**	<0.021
Nickel	41000	**16**	**12.7**	**13.6**
Potassium	NA	**2270**	**1880**	**2000**
Selenium	10000	<6.9	<5.4	<5.7
Silver	10000	<0.85	<0.68	<0.72
Vanadium	14000	**34.8**	**27.3**	**31**
Zinc	610000	**188**	**42.7**	**39.7**

(mg/kg)	milligrams per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample

Table 6d

Pond Sediment Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 8 of 8)

	Location Identification	**SED-33B**	**SED-35B**	**SED-37**	**SED-38**
	Sample Depth (inches below top of sediment)	**0-6"**	**0-4"**	**Composite**	**Composite**
	Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**	**Primary Pond**
	Laboratory Sample Identification	**A7D23701**	**A7D17811**	**A7D17809**	**A7D17807**
	Date Collected	**11/13/2007**	**11/12/2007**	**11/12/2007**	**11/12/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards Soil Pathway [(A)]				
	Non-Residental Scenario				
ICP Metals (mg/kg)					
Antimony	820	<20.9	<21.2	<22.5	<24
Arsenic	38	**5.3**	**5.7**	**4.2**	**9.8**
Barium	140000	**145**	**116**	**144**	**187**
Beryllium	4100	**0.77**	**0.76**	**0.73**	**0.8**
Cadmium	1000	**0.31**	<0.28	**0.3**	**0.95**
Chromium, Total	4000	**90.4**	**27.6**	**187**	**609**
Cobalt	NA	**7**	**7**	**6.4**	**8.1**
Lead	1000	**28.3**	**16**	**271**	**504**
Magnesium	NA	**1810**	**1810**	**2220**	**3230**
Manganese	95000	**162**	**170**	**115**	**336**
Mercury	20	**0.072**	**0.065**	**0.137**	**0.366**
Nickel	41000	**15.3**	**13.9**	**15.1**	**21.4**
Potassium	NA	**1980**	**2110**	**2140**	**2850**
Selenium	10000	<5.6	<5.7	<6	<6.4
Silver	10000	<0.7	<0.71	<0.75	<0.8
Vanadium	14000	**30.4**	**29.3**	**30.2**	**40.3**
Zinc	610000	**70.4**	**40.3**	**103**	**297**

(mg/kg)	milligrams per kilogram
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample

Table 6e

Pond Sediment Sample TCLP Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 5)

	Location Identification	**PB-SED-14A-28-40**	**PB-SED-14A-58-70**	**PB-SED-16D-47-59**	**PB-SED-16D-84-96**
	Sample Depth (inches below top of sediment)	**0-12"**	**30-42"**	**0-12"**	**37-49"**
	Source Area	**Spray Pond**	**Spray Pond**	**Marley Pond**	**Marley Pond**
	Laboratory Sample Identification	**A7C82909/KA014**	**A7C82910/KA015**	**A7C82905/KA012**	**A7C82906/KA013**
	Date Collected	**11/2/2007**	**11/2/2007**	**11/2/2007**	**11/2/2007**
Analyte/Methods (Units)					
	Regulatory Level [(A)]				
Volatile Organic Compounds (µg/l)					
1,1-Dichloroethene	700	<70	<70	<70	<70
1,2-Dichloroethane	500	<25	<25	<25	<25
Benzene	500	**12J**	**22J**	**9.9J**	<25
Carbon tetrachloride	500	<25	<25	<25	<25
Chlorobenzene	100,000	<25	<25	<25	<25
Chloroform	6,000	<25	<25	<25	<25
Methyl ethyl ketone (2-butanone)	200,000	<250	<250	<250	<250
Tetrachloroethene	700	<70	<70	<70	<70
Trichloroethene	500	<50	<50	<50	<50
Vinyl chloride	200	<25	<25	<25	<25

(µg/l)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
DUP	Duplicate sample

Table 6e

Pond Sediment Sample TCLP Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 5)

	Location Identification	**PB-SED-18D-74-78**	**PB-SED-20D-144-160**	**PB-SED-22D-158-164**
	Sample Depth (inches below top of sediment)	**0-4"**	**0-16"**	**0-6"**
	Source Area	**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #2**
	Laboratory Sample Identification	**A7D07301/KA5EQ**	**A7D07302/KA5EW**	**A7D07303/KA5E6**
	Date Collected	**11/6/2007**	**11/6/2007**	**11/7/2007**
Analyte/Methods (Units)				
	Regulatory Level (A)			
Volatile Organic Compounds (µg/l)				
1,1-Dichloroethene	700	<70	<70	<70UJ
1,2-Dichloroethane	500	<25	<25	<25UJ
Benzene	500	<25	**11J**	<25UJ
Carbon tetrachloride	500	<25	<25	<25UJ
Chlorobenzene	100,000	<25	<25	<25UJ
Chloroform	6,000	<25	<25	<25UJ
Methyl ethyl ketone (2-butanone)	200,000	<250	<250	<250UJ
Tetrachloroethene	700	<70	<70	<70UJ
Trichloroethene	500	<50	<50	<50UJ
Vinyl chloride	200	<25	<25	<25UJ

(µg/l)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
DUP	Duplicate sample

Table 6e

Pond Sediment Sample TCLP Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification	**PB-SED-24B-156-162**	**PB-SED-26B-66-78**	**PB-SED-26B-88-100**	**PB-SED-28D**
	Sample Depth (inches below top of sediment)	**0-6"**	**0-12"**	**22-34"**	**6-18"**
	Source Area	**Aeration Pond #1**	**Equilization Basin**	**Equilization Basin**	**Southeast Pond**
	Laboratory Sample Identification	**A7D07306/KA5FJ**	**A7D07307/KA5FM**	**A7D07308/KA5FP**	**A7D18101/KA89A**
	Date Collected	**11/8/2007**	**11/8/2007**	**11/8/2007**	**11/9/2007**
Analyte/Methods (Units)					
	Regulatory Level [(A)]				
Volatile Organic Compounds (µg/l)					
1,1-Dichloroethene	700	<70UJ	<70UJ	<70UJ	<70
1,2-Dichloroethane	500	<25UJ	<25UJ	<25UJ	<25
Benzene	500	<25UJ	**100J**	**110J**	<25
Carbon tetrachloride	500	<25UJ	<25UJ	<25UJ	<25
Chlorobenzene	100,000	<25UJ	<25UJ	<25UJ	<25
Chloroform	6,000	<25UJ	<25UJ	<25UJ	<25
Methyl ethyl ketone (2-butanone)	200,000	<250UJ	<250UJ	<250UJ	<250
Tetrachloroethene	700	<70UJ	<70UJ	<70UJ	<70
Trichloroethene	500	<50UJ	<50UJ	<50UJ	<50
Vinyl chloride	200	<25UJ	<25UJ	<25UJ	<25

(µg/l)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
DUP	Duplicate sample

Table 6e

Pond Sediment Sample TCLP Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 5)

	Location Identification	**PB-SED-30D**	**PB-SED-30D-52 (DUP of PB-SED-30D)**	**PB-SED-32D**
	Sample Depth (inches below top of sediment)	**0-15"**	**0-15"**	**0-6"**
	Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
	Laboratory Sample Identification	**A7D24303**	**A7D24304**	**A7D40702**
	Date Collected	**11/13/2007**	**11/13/2007**	**11/15/2007**
Analyte/Methods (Units)	**Regulatory Level [(A)]**			
Volatile Organic Compounds (µg/l)				
1,1-Dichloroethene	700	<10	<10	<10
1,2-Dichloroethane	500	<10	<10	<10
Benzene	500	**6J**	<10	<10
Carbon tetrachloride	500	<10	<10	<10
Chlorobenzene	100,000	<10	<10	<10
Chloroform	6,000	<10	<10	<10
Methyl ethyl ketone (2-butanone)	200,000	<50	<50	<50
Tetrachloroethene	700	<10	<10	<10
Trichloroethene	500	<10	<10	<10
Vinyl chloride	200	<10	<10	<10

(µg/l)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
DUP	Duplicate sample

Table 6e

Pond Sediment Sample TCLP Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 5)

	Location Identification	**PB-SED-34D**	**PB-SED-36D**	**PB-SED-39D**
	Sample Depth (inches below top of sediment)	**0-12"**	**0-12"**	**0-6"**
	Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**Primary Pond**
	Laboratory Sample Identification	**A7D40703**	**A7D40706**	**A7D18103/KA89N**
	Date Collected	**11/15/2007**	**11/15/2007**	**11/10/2007**
Analyte/Methods (Units)				
	Regulatory Level (A)			
Volatile Organic Compounds (µg/l)				
1,1-Dichloroethene	700	<10	<10	**12J**
1,2-Dichloroethane	500	<10	<10	<25
Benzene	500	**62**	**20**	**10J**
Carbon tetrachloride	500	<10	<10	<25
Chlorobenzene	100,000	<10	<10	<25
Chloroform	6,000	<10	<10	<25
Methyl ethyl ketone (2-butanone)	200,000	<50	<50	<250
Tetrachloroethene	700	<10	<10	**50J**
Trichloroethene	500	<10	<10	**11J**
Vinyl chloride	200	<10	<10	<25

(µg/l)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
DUP	Duplicate sample

Table 6f

Pond Sediment Sample TCLP Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 5)

Location Identification		**PB-SED-14A-28-40**	**PB-SED-14A-58-70**	**PB-SED-16D-47-59**	**PB-SED-16D-84-96**
Sample Depth (inches below top of sediment)		**0-12"**	**30-42"**	**0-12"**	**37-49"**
Source Area		**Spray Pond**	**Spray Pond**	**Marley Pond**	**Marley Pond**
Laboratory Sample Identification		**A7C82909**	**A7C82910**	**A7C82905**	**A782906**
Date Collected		**11/2/2007**	**11/2/2007**	**11/2/2007**	**11/2/2007**
Analyte/Methods (Units)	**Regulatory Level[(A)]**				
Semivolatile Organic Compounds (mg/l)					
1,4-Dichlorobenzene	7.5	<0.04	<0.04	<0.04	<0.04
2,4,5-Trichlorophenol	400	<0.02	<0.02	<0.02	<0.02
2,4,6-Trichlorophenol	2	<0.02	<0.02	<0.02	<0.02
2,4-Dinitrotoluene	0.13	<0.02	<0.02	<0.02	<0.02
2-Methylphenol (o-cresol)	200	<0.02	<0.02	<0.02	<0.02
3-Methylphenol (m-cresol)	200	<0.04	<0.04	<0.04	<0.04
4-Methylphenol (p-cresol)	200	<0.02	<0.02	<0.02	<0.02
Hexachlorobenzene	0.13	<0.02	<0.02	<0.02	<0.02
Hexachlorobutadiene	0.5	<0.02	<0.02	<0.02	<0.02
Hexachloroethane	3	<0.02	<0.02	<0.02	<0.02
Nitrobenzene	2	<0.02	<0.02	<0.02	<0.02
Pentachlorophenol	100	<0.04	<0.04	<0.04	<0.04
Pyridine	5	<0.1	<0.1	<0.1	<0.1

(mg/l)	milligrams per kilograms
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics (40 CFR Part 261.24 Table 1).
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6f

Pond Sediment Sample TCLP Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 5)

Location Identification		**PB-SED-18D-74-78**	**PB-SED-20D-144-160**	**PB-SED-22D-158-164**	**PB-SED-24B-156-162**
Sample Depth (inches below top of sediment)		**0-4"**	**0-16"**	**0-6"**	**0-6"**
Source Area		**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #2**	**Aeration Pond #1**
Laboratory Sample Identification		**A7D07001**	**A7D07004**	**A7D07006**	**A7D07012**
Date Collected		**11/6/2007**	**11/6/2007**	**11/7/2007**	**11/8/2007**
Analyte/Methods (Units)	**Regulatory Level[(A)]**				
Semivolatile Organic Compounds (mg/l)					
1,4-Dichlorobenzene	7.5	<0.04	<0.04	<0.04	<0.04
2,4,5-Trichlorophenol	400	<0.02	<0.02	<0.02	<0.02
2,4,6-Trichlorophenol	2	<0.02	<0.02	<0.02	<0.02
2,4-Dinitrotoluene	0.13	<0.02	<0.02	<0.02	<0.02
2-Methylphenol (o-cresol)	200	<0.02	<0.02	<0.02	<0.02
3-Methylphenol (m-cresol)	200	<0.04	<0.04	<0.04	<0.04
4-Methylphenol (p-cresol)	200	<0.02	<0.02	<0.02	<0.02
Hexachlorobenzene	0.13	<0.02	<0.02	<0.02	<0.02
Hexachlorobutadiene	0.5	<0.02	<0.02	<0.02	<0.02
Hexachloroethane	3	<0.02	<0.02	<0.02	<0.02
Nitrobenzene	2	<0.02	<0.02	<0.02	<0.02
Pentachlorophenol	100	<0.04	<0.04	<0.04	<0.04
Pyridine	5	<0.1	<0.1	<0.1	<0.1

(mg/l)	milligrams per kilograms
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics (40 CFR Part 261.24 Table 1).
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6f

Pond Sediment Sample TCLP Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 5)

Location Identification		**PB-SED-26B-66-78**	**PB-SED-26B-88-100**	**PB-SED-28D**	**PB-SED-30D**
Sample Depth (inches below top of sediment)		**0-12"**	**22-34"**	**6-18"**	**0-15"**
Source Area		**Equilization Basin**	**Equilization Basin**	**Southeast Pond**	**West Oxidation Pond**
Laboratory Sample Identification		**A7D07014**	**A7D0716**	**A7D17802**	**A7D23704**
Date Collected		**11/8/2007**	**11/8/2007**	**11/9/2007**	**11/13/2007**
Analyte/Methods (Units)	**Regulatory Level[(A)]**				
Semivolatile Organic Compounds (mg/l)					
1,4-Dichlorobenzene	7.5	<0.04	<0.04	<0.04	<0.04
2,4,5-Trichlorophenol	400	<0.02	<0.02	<0.02	<0.02
2,4,6-Trichlorophenol	2	<0.02	<0.02	<0.02	<0.02
2,4-Dinitrotoluene	0.13	<0.02	<0.02	<0.02R	<0.02
2-Methylphenol (o-cresol)	200	<0.02	<0.02	<0.02	<0.02
3-Methylphenol (m-cresol)	200	<0.04	<0.04	<0.04	<0.04
4-Methylphenol (p-cresol)	200	<0.02	<0.02	<0.02	<0.02
Hexachlorobenzene	0.13	<0.02	<0.02	<0.02	<0.02
Hexachlorobutadiene	0.5	<0.02	<0.02	<0.02	<0.02
Hexachloroethane	3	<0.02	<0.02	<0.02	<0.02
Nitrobenzene	2	<0.02	<0.02	<0.02	<0.02
Pentachlorophenol	100	<0.04	<0.04	<0.04	<0.04
Pyridine	5	<0.1	<0.1	<0.1	<0.1

(mg/l)	milligrams per kilograms
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics (40 CFR Part 261.24 Table 1).
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6f

Pond Sediment Sample TCLP Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 5)

	Location Identification	**PB-SED-30D-52 (DUP of PB-SED-30D)**	**PB-SED-32D**	**PB-SED-34D**
	Sample Depth (inches below top of sediment)	**0-15"**	**0-6"**	**0-12"**
	Source Area	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
	Laboratory Sample Identification	**A7D23705**	**A7D40702**	**A7D40703**
	Date Collected	**11/13/2007**	**11/15/2007**	**11/15/2007**
Analyte/Methods (Units)				
	Regulatory Level[(A)]			
Semivolatile Organic Compounds (mg/l)				
1,4-Dichlorobenzene	7.5	<0.04	<0.04	<0.04
2,4,5-Trichlorophenol	400	<0.02	<0.02	<0.02
2,4,6-Trichlorophenol	2	<0.02	<0.02	<0.02
2,4-Dinitrotoluene	0.13	<0.02	<0.02	<0.02
2-Methylphenol (o-cresol)	200	<0.02	<0.02	<0.02
3-Methylphenol (m-cresol)	200	<0.04	<0.04	<0.04
4-Methylphenol (p-cresol)	200	<0.02	<0.02	<0.02
Hexachlorobenzene	0.13	<0.02	<0.02	<0.02
Hexachlorobutadiene	0.5	<0.02	<0.02	<0.02
Hexachloroethane	3	<0.02	<0.02	<0.02
Nitrobenzene	2	<0.02	<0.02	<0.02
Pentachlorophenol	100	<0.04	<0.04	<0.04
Pyridine	5	<0.1	<0.1	<0.1

(mg/l)	milligrams per kilograms
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics (40 CFR Part 261.24 Table 1).
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6f

Pond Sediment Sample TCLP Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 5)

	Location Identification	**PB-SED-36D**	**PB-SED-39D**
	Sample Depth (inches below top of sediment)	**0-12"**	**0-6"**
	Source Area	**West Oxidation Pond**	**Primary Pond**
	Laboratory Sample Identification	**A7D40706**	**A7D17806**
	Date Collected	**11/15/2007**	**11/10/2007**
Analyte/Methods (Units)			
	Regulatory Level[(A)]		
Semivolatile Organic Compounds (mg/l)			
1,4-Dichlorobenzene	7.5	<0.04	<0.04
2,4,5-Trichlorophenol	400	<0.02	<0.02
2,4,6-Trichlorophenol	2	<0.02	<0.02
2,4-Dinitrotoluene	0.13	<0.02	<0.02R
2-Methylphenol (o-cresol)	200	<0.02	<0.02
3-Methylphenol (m-cresol)	200	<0.04	<0.04
4-Methylphenol (p-cresol)	200	<0.02	<0.02
Hexachlorobenzene	0.13	<0.02	<0.02
Hexachlorobutadiene	0.5	<0.02	<0.02
Hexachloroethane	3	<0.02	<0.02
Nitrobenzene	2	<0.02	<0.02
Pentachlorophenol	100	<0.04	<0.04
Pyridine	5	<0.1	<0.1

(mg/l)	milligrams per kilograms
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics (40 CFR Part 261.24 Table 1).
R	The data are rejected and may not be useable, due to QC deficiencies.
DUP	Duplicate sample

Table 6g

Pond Sediment Sample TCLP Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 5)

Location Identification		**PB-SED-14A-28-40**	**PB-SED-14A-58-70**	**PB-SED-16D-47-59**	**PB-SED-16D-84-96**
Sample Depth (inches below top of sediment)		**0-12"**	**30-42"**	**0-12"**	**37-49"**
Source Area		**Spray Pond**	**Spray Pond**	**Marley Pond**	**Marley Pond**
Laboratory Sample Identification		**A7C82909**	**A7C82910**	**A7C82908**	**A7C82906**
Date Collected		**11/2/2007**	**11/2/2007**	**11/2/2007**	**11/2/2007**
Analyte/Methods (Units)	**Regulatory Level [(A)]**				
TCLP Metals (ug/L)					
Arsenic	5000	**72.8**	**21.1**	<10	**10.5**
Barium	100000	**570B**	**855B**	**1750B**	**2100B**
Cadmium	1000	<1	<1	<1	<1
Chromium, Total	5000	**12**	<4	<4	<4
Lead	5000	<5	**5.5B**	**32B**	**50.4B**
Mercury	200	<0.2	<0.2	<0.2	<0.2
Selenium	1000	<15	<15	<15	<15
Silver	5000	<3	<3	<3	<3

(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 6g

Pond Sediment Sample TCLP Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 5)

	Location Identification	**PB-SED-18D-74-78**	**PB-SED-20D-144-160**	**PB-SED-22D-158-164**
	Sample Depth (inches below top of sediment)	**0-4"**	**0-16"**	**0-6"**
	Source Area	**Polishing Pond**	**Aeration Pond #3**	**Aeration Pond #2**
	Laboratory Sample Identification	**A7D07001**	**A7D07004**	**A7D07006**
	Date Collected	**11/6/2007**	**11/6/2007**	**11/7/2007**
Analyte/Methods (Units)				
	Regulatory Level [(A)]			
TCLP Metals (ug/L)				
Arsenic	5000	**49.8**	**34.4**	<10
Barium	100000	**2100B**	**1570B**	**1420B**
Cadmium	1000	<1	<1	<1
Chromium, Total	5000	<4	**42.2**	**12.4**
Lead	5000	**56.1B**	**18.4B**	**18.8B**
Mercury	200	<0.2	<0.2	<0.2
Selenium	1000	<15	<15	<15
Silver	5000	<3	<3	<3

(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 6g

Pond Sediment Sample TCLP Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 5)

	Location Identification	**PB-SED-24B-156-162**	**PB-SED-26B-66-78**	**PB-SED-26B-88-100**	**PB-SED-28D**
	Sample Depth (inches below top of sediment)	**0-6"**	**0-12"**	**22-34"**	**6-18"**
	Source Area	**Aeration Pond #1**	**Equilization Basin**	**Equilization Basin**	**Southeast Pond**
	Laboratory Sample Identification	**A7D07012**	**A7D07014**	**A7D07016**	**A7D17802**
	Date Collected	**11/8/2007**	**11/8/2007**	**11/8/2007**	**11/9/2007**
Analyte/Methods (Units)					
	Regulatory Level [(A)]				
TCLP Metals (ug/L)					
Arsenic	5000	**38.5**	<10	**11.2**	<10
Barium	100000	**1370B**	**1150B**	**984B**	**945B**
Cadmium	1000	<1	<1	<1	<1
Chromium, Total	5000	**40.2**	**9.9**	**762**	**107**
Lead	5000	**5.2B**	**5.2B**	**36.3B**	**24.8B**
Mercury	200	<0.2	<0.2	**0.215**	<0.2
Selenium	1000	<15	<15	<15	<15
Silver	5000	<3	<3	<3	<3

(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 6g

Pond Sediment Sample TCLP Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 5)

Location Identification		**PB-SED-30D**	**PB-SED-30D-52 (DUP of PB-SED-30D)**	**PB-SED-32D**	**PB-SED-34D**
Sample Depth (inches below top of sediment)		**0-15"**	**0-15"**	**0-6"**	**0-12"**
Source Area		**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**	**West Oxidation Pond**
Laboratory Sample Identification		**A7D23704**	**A7D23705**	**A7D40702**	**A7D40703**
Date Collected		**11/13/2007**	**11/13/2007**	**11/15/2007**	**11/15/2007**
Analyte/Methods (Units)	**Regulatory Level (A)**				
TCLP Metals (ug/L)					
Arsenic	5000	<10	<10	<10	<10
Barium	100000	**937B**	**955B**	**813**	**738**
Cadmium	1000	<1	<1	<1	<1
Chromium, Total	5000	**40.8**	**42.6**	**66**	**42.3**
Lead	5000	<5	**10.9B**	**9.7B**	<5
Mercury	200	<0.2	<0.2	<0.2	<0.2
Selenium	1000	<15	<15	<15	<15
Silver	5000	<3	<3	<3	<3

(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 6g

Pond Sediment Sample TCLP Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 5)

Location Identification		**PB-SED-36D**	**PB-SED-39D**
Sample Depth (inches below top of sediment)		**0-12"**	**0-6"**
Source Area		**West Oxidation Pond**	**Primary Pond**
Laboratory Sample Identification		**A7D40706**	**A7D17806**
Date Collected		**11/15/2007**	**11/10/2007**
Analyte/Methods (Units)	**Regulatory Level (A)**		
TCLP Metals (ug/L)			
Arsenic	5000	<10	<10
Barium	100000	**1240**	**1660B**
Cadmium	1000	<1	**1.8**
Chromium, Total	5000	**67.1**	**5.7**
Lead	5000	<5	**36.8B**
Mercury	200	<0.2	<0.2
Selenium	1000	<15	<15
Silver	5000	<3	<3

(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 99)

	Location Identification and Sample Interval (Feet below ground surface)		**BH-001 (0.5-1.5)**	**BH-002 (0.5-1.5)**	**BH-003 (0.5-1.5)**	**BH-004 (0.5-1.5)**
	Laboratory Sample Identification		**A7D87408**	**A7D87407**	**A7D87409**	**A7D87401**
Analyte/Methods (Units)	**Date Collected**		**11/30/2007**	**11/30/2007**	**11/30/2007**	**11/30/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	**5500**	<54	<63	<65
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**1100**	<54	<63	<65
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	**750**	<54	<63	<65
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**2800**	<54	<63	<65

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-005 (0.5-1.5)**	**BH-006 (0.5-1.5)**	**BH-007 (0.5-1.5)**	**BH-008 (0.5-1.5)**
	Laboratory Sample Identification		**A7D87403**	**A7D87402**	**A7D87406**	**A7D87404**
Analyte/Methods (Units)	**Date Collected**		**11/30/2007**	**11/30/2007**	**11/30/2007**	**11/30/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<66	<56	**4200**	*<82*
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<66	<56	**7800**	<82
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<66	<56	**3400**	<82
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<66	<56	**12000**	<82

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 99)

	Location Identification and Sample Interval (Feet below ground surface)		**BH-009 (0.5-1.5)**	**BH-010 (0.5-1.5)**	**BH-011 (0.5-1.5)**	**BH-012 (0.5-1.5)**
	Laboratory Sample Identification		**A7D87405**	**A7D87410**	**A7D87412**	**A7D87411**
Analyte/Methods (Units)	**Date Collected**		**11/30/2007**	**11/30/2007**	**11/30/2007**	**11/30/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<54	<51	<59	<47
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<54	<51	<59	<47
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<54	<51	<59	<47
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<54	<51	<59	<47

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-013 (0.5-1.5)**	**BH-014 (0.5-1.5)**	**BH-015 (0.5-1.5)**	**BH-016 (0.5-1.5)**
	Laboratory Sample Identification		**A7D87415**	**A7D87414**	**A7D87413**	**A7E54612**
Analyte/Methods (Units)	**Date Collected**		**11/30/2007**	**11/30/2007**	**11/30/2007**	**12/13/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<59	<49	<59	<55
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<59	<49	<59	<55
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<59	<49	<59	<55
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<59	<49	<59	<55

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 99)

	Location Identification and Sample Interval (Feet below ground surface)		**BH-017 (0.5-1.5)**	**BH-018 (0.5-1.5)**	**BH-019 (0.5-1.5)**	**BH-020 (0.5-1.5)**
	Laboratory Sample Identification		**A7E57011**	**A7E54613**	**A7D87416**	**A7D87417**
Analyte/Methods (Units)	**Date Collected**		**12/14/2007**	**12/13/2007**	**11/30/2007**	**11/30/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<62	<58	<50	<58
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<62	<58	<50	<58
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<62	<58	<50	<58
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<62	<58	<50	<58

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-021 (0.5-1.5)**	**BH-022 (0.5-1.5)**	**BH-023 (0.5-1.5)**	**BH-024 (0.5-1.5)**
	Laboratory Sample Identification		**A7D87418**	**A8042202**	**A8042203**	**A8042204**
Analyte/Methods (Units)	**Date Collected**		**11/30/2007**	**1/10/2008**	**1/10/2008**	**1/10/2008**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<56	<53	<55	<54
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<56	<53	<55	<54
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<56	<53	<55	<54
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<56	<53	<55	<54

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 7 of 99)

	Location Identification and Sample Interval (Feet below ground surface)		**BH-025 (0.5-1.5)**	**BH-026 (0.5-1.5)**	**BH-027 (0.5-1.5)**	**BH-028 (0.5-1.5)**
	Laboratory Sample Identification		**A7E29006**	**A7E29005**	**A7E29004**	**A7E29007**
Analyte/Methods (Units)	**Date Collected**		**12/10/2007**	**12/10/2007**	**12/10/2007**	**12/10/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<61	<50	<53	<51
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<61	<50	<53	<51
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<61	<50	<53	<51
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<61	<50	<53	<51

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 8 of 99)

	Location Identification and Sample Interval (Feet below ground surface)		**BH-029 (0.5-1.5)**	**BH-030 (0.5-1.5)**	**BH-031 (0.5-1.5)**	**BH-032 (0.5-1.5)**
	Laboratory Sample Identification		**A7E57010**	**A7E57009**	**A7E44101**	**A7E44103**
Analyte/Methods (Units)	**Date Collected**		**12/14/2007**	**12/14/2007**	**12/12/2007**	**12/12/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<56	<67	<53	*<100*
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<56	<67	<53	<100
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<56	<67	<53	<100
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<56	<67	<53	<100

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 9 of 99)

	Location Identification and Sample Interval (Feet below ground surface)		**BH-033 (0.5-1.5)**	**BH-034 (0.5-1.5)**	**BH-035 (0.5-1.5)**	**BH-036 (0.5-1.5)**
	Laboratory Sample Identification		**A7E57008**	**A7E44102**	**A7E44106**	**A7E44105**
Analyte/Methods (Units)	**Date Collected**		**12/14/2007**	**12/12/2007**	**12/12/2007**	**12/12/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<69	<56	<52	<60
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<69	<56	<52	<60
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<69	<56	<52	<60
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**110**	<56	<52	<60

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-037 (0.5-1.5)	BH-038 (0.5-1.5)	BH-039 (0.5-1.5)	BH-040 (0.5-1.5)
	Laboratory Sample Identification		A7E44104	A7E57007	A7E57006	A8042212
Analyte/Methods (Units)	Date Collected		12/12/2007	12/14/2007	12/14/2007	1/10/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<73	<60	<48	<66
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<73	<60	<48	<66
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<73	<60	<48	<66
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<73	<60	<48	<66

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-041 (0.5-1.5)	BH-042 (0.5-1.5)	BH-043 (0.5-1.5)	BH-044 (0.5-1.5)
	Laboratory Sample Identification		A7E57005	A8042211	A7E57004	A8042210
Analyte/Methods (Units)	Date Collected		12/14/2007	1/10/2008	12/14/2007	1/10/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<57	<62	<59	<58
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<57	<62	<59	<58
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<57	<62	<59	<58
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<57	<62	<59	<58

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-045 (0.5-1.5)	BH-046 (0.5-1.5)	BH-048 (0.5-1.5)	BH-050 (0.5-1.5)
	Laboratory Sample Identification		A8042209	A8042208	A8042201	A8042213
Analyte/Methods (Units)	Date Collected		1/10/2008	1/10/2008	1/10/2008	1/10/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<48	<48	<66	<59
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<48	<48	<66	<59
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<48	<48	<66	<59
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<48	<48	<66	<59

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-051 (0.5-1.5)	BH-053 (0.5-1.5)	BH-054 (0.5-1.5)	BH-055 (0.5-1.5)
	Laboratory Sample Identification		A8042214	A7E44110	A7E44112	A7E44111
Analyte/Methods (Units)	Date Collected		1/10/2008	12/12/2007	12/12/2007	12/12/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<52	<62	<52	<56
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<52	<62	<52	<56
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<52	<62	<52	<56
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<52	<62	<52	<56

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-056 (0.5-1.5)	BH-057 (0.5-1.5)	BH-058 (0.5-1.5)	BH-059 (0-2)
	Laboratory Sample Identification		A7E44109	A7E44108	A7E44107	A7D57809
Analyte/Methods (Units)	Date Collected		12/12/2007	12/12/2007	12/12/2007	11/20/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	**670**	<58	<52	<53
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**110**	<58	<52	<53
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<58	<58	<52	<53
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**34J**	<58	<52	<53

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-060 (0-2)	BH-061 (0-2)	BH-062 (0-2)	BH-063 (0-2)
	Laboratory Sample Identification		A7D57810	A7D57808	A7D57801	A7D57802
Analyte/Methods (Units)	Date Collected		11/20/2007	11/20/2007	11/20/2007	11/20/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<54	<47	<52	**22000**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<54	<47	<52	**10000**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<54	<47	<52	**1400**
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<54	<47	<52	**39000**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-064 (0-2)	BH-065 (0-2)	BH-066 (0-2)	BH-067 (0-2)
	Laboratory Sample Identification		A7D57814	A7D57812	A7D57813	A7D57803
Analyte/Methods (Units)	Date Collected		11/20/2007	11/20/2007	11/20/2007	11/20/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<55	*<270*	**290**	**1900**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<55	**4000**	**1200**	**900**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<55	**150J**	**1600**	<55
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<55	**23000**	**6900**	**980**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-068 (0.5-1.5)**	**BH-069 (0.5-1.5)**	**BH-070 (0.5-1.5)**	**BH-071 (0.5-1.5)**
	Laboratory Sample Identification		**A7E12308**	**A7E12307**	**A7E12309**	**A7E12806**
Analyte/Methods (Units)	**Date Collected**		**12/5/2007**	**12/5/2007**	**12/5/2007**	**12/6/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<51	<51	<56	<45
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<51	<51	<56	<45
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<51	<51	<56	<45
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<51	<51	<56	<45

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-071-50 (DUP of BH-071 (0.5-1.5))	BH-072 (0.5-1.5)	BH-073 (0.5-1.5)	BH-074
	Laboratory Sample Identification		A7E12807	A7E12805	A7E12804	A7D65315
Analyte/Methods (Units)	Date Collected		12/6/2007	12/6/2007	12/6/2007	11/26/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<45	<50	<49	<44
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<45	<50	<49	<44
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<45	<50	<49	<44
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<45	<50	<49	<44

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-075	BH-076	BH-077 (0.5-1.5)	BH-078 (0.5-1.5)
	Laboratory Sample Identification		A7D65316	A7D65314	A7E12803	A7E12802
Analyte/Methods (Units)	Date Collected		11/26/2007	11/26/2007	12/6/2007	12/6/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<45	<44	<53	<59
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<45	<44	<53	<59
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<45	<44	<53	<59
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<45	<44	<53	<59

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-079 (0.5-1.5)	BH-080 (0.5-1.5)	BH-081 (0.5-1.5)	BH-082 (0.5-1.5)
	Laboratory Sample Identification		A7E12801	A7E12812	A7E12811RE	A7E12813
Analyte/Methods (Units)	Date Collected		12/6/2007	12/6/2007	12/6/2007	12/6/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<50	**32J**	<53UJ	<54
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<50	**120**	<53UJ	<54
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<50	<54	<53UJ	<54
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<50	<54	<53UJ	<54

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-083 (0.5-1.5)	BH-084 (0.5-1.5)	BH-085 (0.5-1.5)	BH-086 (0.5-1.5)
	Laboratory Sample Identification		A7E12810	A7E12808	A7E12809	A7E29002
Analyte/Methods (Units)	Date Collected		12/6/2007	12/6/2007	12/6/2007	12/10/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<48	<48	**160**	<55
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<48	<48	**200**	<55
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<48	<48	<55	<55
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<48	<48	**140**	<55

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-087 (0.5-1.5)**	**BH-088 (0.5-1.5)**	**BH-089 (0.5-1.5)**	**BH-090 (0.5-1.5)**
	Laboratory Sample Identification		**A7E29001**	**A7E29003**	**A7E12818**	**A7E12817**
Analyte/Methods (Units)	**Date Collected**		**12/10/2007**	**12/10/2007**	**12/6/2007**	**12/6/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<62	<56	<54	**76**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<62	<56	<54	<70
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<62	<56	<54	<70
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<62	<56	<54	<70

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-091 (0.5-1.5)**	**BH-092 (0.5-1.5)**	**BH-093 (0.5-1.5)**	**BH-094 (0.5-1.5)**
	Laboratory Sample Identification		**A7E12819**	**A7E12816**	**A7E12815**	**A7E12814**
Analyte/Methods (Units)	**Date Collected**		**12/6/2007**	**12/6/2007**	**12/6/2007**	**12/6/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	**150**	<54	**960**	<54
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**200**	<54	**52**	**200**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	**250**	<54	**100**	<54
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**1100**	<54	**170**	<54

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-095 (0.5-1.5)**	**BH-095-50 (DUP of BH-095 (0.5-1.5))**	**BH-096 (0.5-1.5)**	**BH-097 (0.5-1.5)**
	Laboratory Sample Identification		**A7E12312**	**A7E12313**	**A7E12311**	**A7E12310**
Analyte/Methods (Units)	**Date Collected**		**12/5/2007**	**12/5/2007**	**12/5/2007**	**12/5/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	*<140*	<59	<54	<57
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<140	<59	<54	<57
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<140	<59	<54	<57
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<140	<59	<54	<57

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-098 (0.5-1.5)**	**BH-099 (0.5-1.5)**	**BH-100 (0.5-1.5)**	**BH-101 (0.5-1.5)**
	Laboratory Sample Identification		**A7E12305**	**A7E12306**	**A7E12304**	**A7E12301**
Analyte/Methods (Units)	**Date Collected**		**12/5/2007**	**12/5/2007**	**12/5/2007**	**12/5/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<52	<56	<58	<52
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<52	<56	<58	<52
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<52	<56	<58	<52
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<52	<56	<58	<52

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-102 (0.5-1.5)**	**BH-103 (0.5-1.5)**	**BH-104 (0.5-1.5)**	**BH-105 (0.5-1.5)**
	Laboratory Sample Identification		**A7E12302**	**A7E12303**	**A7E12319**	**A7E12318**
Analyte/Methods (Units)	**Date Collected**		**12/5/2007**	**12/5/2007**	**12/5/2007**	**12/5/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<79	<53	<55	**66**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<79	<53	<55	<54
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<79	<53	<55	<54
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<79	<53	<55	**83**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-106 (0.5-1.5)**	**BH-107 (0.5-1.5)**	**BH-108 (0.5-1.5)**	**BH-109 (0.5-1.5)**
	Laboratory Sample Identification		**A7E12317**	**A7D95802**	**A7D95803**	**A7D95807**
Analyte/Methods (Units)	**Date Collected**		**12/5/2007**	**12/4/2007**	**12/4/2007**	**12/4/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<60	<54	<61	<58
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<60	<54	<61	<58
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<60	<54	<61	<58
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<60	<54	<61	<58

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-110 (0.5-1.5)**	**BH-111 (0.5-1.5)**	**BH-112 (0.5-1.5)**	**BH-113 (0.5-1.5)**
	Laboratory Sample Identification		**A7D95804**	**A7D95806**	**A7D95805**	**A7E12314**
Analyte/Methods (Units)	**Date Collected**		**12/4/2007**	**12/4/2007**	**12/4/2007**	**12/5/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<52	<53	<52	<58
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<52	<53	<52	<58
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<52	<53	<52	<58
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<52	<53	<52	<58

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-114 (0.5-1.5)**	**BH-115 (0.5-1.5)**	**BH-116 (0.5-1.5)**	**BH-117 (0.5-1.5)**
	Laboratory Sample Identification		**A7E12316**	**A7E12315**	**A7D95810**	**A7D95808**
Analyte/Methods (Units)	**Date Collected**		**12/5/2007**	**12/5/2007**	**12/4/2007**	**12/4/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<61	<54	<56	<63
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<61	<54	<56	<63
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<61	<54	<56	<63
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<61	<54	<56	<63

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-118 (0.5-1.5)**	**BH-119 (0.5-1.5)**	**BH-120 (0.5-1.5)**	**BH-121 (0.5-1.5)**
	Laboratory Sample Identification		**A7D95811**	**A7D95809**	**A7D95819**	**A7D95818**
Analyte/Methods (Units)	**Date Collected**		**12/4/2007**	**12/4/2007**	**12/4/2007**	**12/4/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<56	<42	<53	<55
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<56	<42	<53	<55
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<56	<42	<53	<55
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<56	<42	<53	<55

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-122 (0.5-1.5)	BH-123 (0.5-1.5)	BH-124 (0.5-1.5)	BH-125 (0.5-1.5)
	Laboratory Sample Identification		A7D95801	A7D95813	A7D95812	A7D95816
Analyte/Methods (Units)	Date Collected		12/4/2007	12/4/2007	12/4/2007	12/4/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<51	<56	<50	<50
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<51	<56	<50	<50
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<51	<56	<50	<50
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<51	<56	<50	<50

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-126 (0.5-1.5)	BH-127 (0.5-1.5)	BH-128 (0.5-1.5)	BH-129 (0.5-1.5)
	Laboratory Sample Identification		A7D95817	A7D95815	A7D95814	A7E54605RI
Analyte/Methods (Units)	Date Collected		12/4/2007	12/4/2007	12/4/2007	12/13/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<53	<49	<55	**23000**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<53	<49	<55	**21000**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<53	<49	<55	**1000J**
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<53	<49	<55	**9200**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-130 (0.5-1.5)**	**BH-131 (0.5-1.5)**	**BH-132 (0.5-1.5)**	**BH-133 (0.5-1.5)**
	Laboratory Sample Identification		**A7E54604**	**A7E54603**	**A7E54602**	**A7E54601**
Analyte/Methods (Units)	**Date Collected**		**12/13/2007**	**12/13/2007**	**12/13/2007**	**12/13/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<61	<48	**64**	**1200**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<61	<48	<53	**2400**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<61	<48	<53	<980
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<61	<48	**73**	<980

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-134 (0.5-1.5)	BH-135 (0.5-1.5)	BH-135-50 (DUP of BH-135 (0.5-1.5))	BH-136 (0.5-1.5)
	Laboratory Sample Identification		A7E54606	A7E54615	A7E54616	A7E54618
Analyte/Methods (Units)	Date Collected		12/13/2007	12/13/2007	12/13/2007	12/13/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<62	<63	<57	<51
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<62	<63	<57	<51
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	**33J**	<63	<57	<51
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**170**	<63	<57	<51

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-137 (0.5-1.5)**	**BH-138 (0.5-1.5)**	**BH-139 (0.5-1.5)**	**BH-140 (0.5-1.5)**
	Laboratory Sample Identification		**A7E54617**	**A7E54607**	**A7E54610**	**A7E54611**
Analyte/Methods (Units)	**Date Collected**		**12/13/2007**	**12/13/2007**	**12/13/2007**	**12/13/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<50	<48	<54	<74
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<50	<48	<54	<74
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<50	<48	<54	<74
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<50	<48	<54	<74

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-141 (0.5-1.5)**	**BH-142 (0.5-1.5)**	**BH-143 (0.5-1.5)**	**BH-144 (0.5-1.5)**
	Laboratory Sample Identification		**A7E54609**	**A7E54608**	**A8042205**	**A8042206**
Analyte/Methods (Units)	**Date Collected**		**12/13/2007**	**12/13/2007**	**1/10/2008**	**1/10/2008**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<58	<58	<55	<54
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<58	**64**	<55	<54
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<58	<58	<55	<54
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<58	**48J**	<55	<54

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-145 (0.5-1.5)	PSB-04 (3.75-5.75)	PSB-05 (2.8-4.8)	PSB-06 (3.75-5.75)
	Laboratory Sample Identification		A8042207	A8D70803	A8D70805	A8D81002
Analyte/Methods (Units)	Date Collected		1/10/2008	10/29/2008	10/29/2008	10/30/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<69	<52	<46UJ	**830J**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<69	<52	<46UJ	**800J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<69	<52	<46UJ	<78UJ
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<69	<52	<46UJ	**1000J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-11 (4-6)**	**PSB-12 (2-4)**	**PSB-13 (2.75-4.75)**	**PSB-15 (12.5-14.5)**
	Laboratory Sample Identification		**A8D85103**	**A8D85105**	**A8D89102**	**A8D89105**
Analyte/Methods (Units)	**Date Collected**		**10/31/2008**	**10/31/2008**	**11/3/2008**	**11/3/2008**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<56	**280**	<43	<66
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<56	**98**	<43	<66
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<56	**29J**	<43	<66
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**59**	**58**	<43	<66

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-16 (11.5-13.5)**	**PSB-17 (11-13)**	**PSB-18 (9-11)**	**PSB-19 (11.75-13.75)**
	Laboratory Sample Identification		**A8D89107**	**A8D98902**	**A8D98904**	**A8D98906**
Analyte/Methods (Units)	**Date Collected**		**11/3/2008**	**11/4/2008**	**11/4/2008**	**11/4/2008**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<49	<45	<52	<48
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<49	<45	<52	<48
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<49	<45	<52	<48
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<49	<45	<52	<48

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-20 (7.5-9.5)**	**PSB-21 (2-4)**	**PSB-22 (2.25-4.25)**	**PSB-23 (2.5-4.5)**
	Laboratory Sample Identification		**A8E20502**	**A8E20504**	**A8E20506**	**A8E25502**
Analyte/Methods (Units)	**Date Collected**		**11/6/2008**	**11/6/2008**	**11/6/2008**	**11/7/2008**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<49	**67**	**260J**	<42UJ
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<49	**44**	**660J**	<42UJ
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<49	<40	**26J**	<42UJ
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<49	**57**	**190J**	**160J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		PSB-24 (3.75-5.75)	PSB-26 (3.25-5.25)	PSB-27 (2-4)	PSB-27 (7.5-9.5)
	Laboratory Sample Identification		A8E25504	A8E25507	A8E31802	A8E31803
Analyte/Methods (Units)	Date Collected		11/7/2008	11/7/2008	11/10/2008	11/10/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<69	<63	**740**	**180**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<69	<63	**820**	**31J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<69	<63	**140**	<51
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<69	**100**	**3100**	**180**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		PSB-28 (2-4)	PSB-28 (10-12)	PSB-29 (2-3.5)	PSB-30 (2-4)
	Laboratory Sample Identification		A8E31805	A8E31806	RSE0967-04	RSE1027-01
Analyte/Methods (Units)	Date Collected		11/10/2008	11/10/2008	5/27/2009	5/28/2009
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	**820J**	**290**	<4.5	**3.1J**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**57J**	<56	<4.5	<5.2
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	**44J**	<56	**1.3J**	**6.2**
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**700J**	<56	**3.7J**	**1.6J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-30 (5-7)**	**PSB-30 (7-8.5)**	**PSB-31 (2-4)**	**PSB-32 (2-4)**
	Laboratory Sample Identification		**RSE1027-02**	**RSE1027-03/RE**	**RSE1027-04**	**RSE1027-05**
Analyte/Methods (Units)	**Date Collected**		**5/28/2009**	**5/28/2009**	**5/28/2009**	**5/28/2009**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<4.5	**330**	**2500JD**	**87**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<4.5	**10J**	**9200JD**	**86**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	**9.5**	**110J**	**330JD**	**22J**
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<4.5	**32J**	**1400JD**	**69J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-33 (2-4)**	**PSB-34 (2-4)**	**PSB-35 (2-4)**	**PSB-36 (2-4)**
	Laboratory Sample Identification		**RSE1059-01**	**RSE1059-02**	**RSE0911-01/RE**	**RSE0967-01/RE**
Analyte/Methods (Units)	**Date Collected**		**5/29/2009**	**5/29/2009**	**5/26/2009**	**5/27/2009**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	**1.4J**	**6500D**	**730**	**84J**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**5.6J**	**5500D**	**80**	**3.6J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	**4.3J**	<490	**2J**	**44J**
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<5.7UJ	**4700D**	**21J**	**71J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-36 (5-7)**	**PSB-36 (8-10)**
	Laboratory Sample Identification		**RSE0967-02/RE**	**RSE0967-03**
Analyte/Methods (Units)	**Date Collected**		**5/27/2009**	**5/27/2009**
	Kansas Tier II Risk-Based Standards			
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**		
Volatile Organic Compounds (µg/kg)				
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a
Benzene	17,000	80	**76J**	**5.1**
Carbon disulfide	950,000	450	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a
Chloroform	6,000	960	n/a	n/a
Ethylbenzene	650,000	55,000	**4.1J**	**1.3J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a
Toluene	1,000,000	40,000	**41J**	**1.8J**
Trichloroethene	98,000	200	n/a	n/a
Xylenes, total	700,000	700,000	**64J**	**5.7**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-01 (0-2)**	**SB-02 (0-2)**	**SB-02 (8-9.5)**	**SB-03 (0-2)**
	Laboratory Sample Identification		**A7D57807**	**A7D65311**	**A7D65312**	**A7D57811**
Analyte/Methods (Units)	**Date Collected**		**11/20/2007**	**11/26/2007**	**11/26/2007**	**11/20/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<71	<46	**430**	**960**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<71	<46	**140J**	**130**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<71	<46	<220	**49J**
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<71	<46	<220	**730**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**SB-03 (6-8)**	**SB-04 (0-2)**	**SB-04 (6-8)**	**SB-05 (0-2)**
		Laboratory Sample Identification	**A7D57805RI**	**A7D65301**	**A7D65302**	**A7D57804**
Analyte/Methods (Units)		**Date Collected**	**11/20/2007**	**11/26/2007**	**11/26/2007**	**11/20/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	**3400J**	<54	**150**	<54
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**350J**	<54	**1400**	**40J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<110UJ	<54	**180**	<54
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<110UJ	<54	**1000**	**200**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-05 (10-12)**	**SB-06 (0-2)**	**SB-06 (8-9.5)**	**SB-07 (0-2)**
	Laboratory Sample Identification		**A7D57806**	**A7D65308**	**A7D65309**	**A7D65307**
Analyte/Methods (Units)	**Date Collected**		**11/20/2007**	**11/26/2007**	**11/26/2007**	**11/26/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	**380**	<44	**1000**	<52
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**220**	<44	**3400**	<52
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<60	<44	<240	<52
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**160**	<44	**1000**	<52

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-08 (0-2)**	**SB-08 (6-8)**	**SB-09 (0-2)**	**SB-09 (2-4)**	**SB-10 (0-2)**
	Laboratory Sample Identification		**A7D65304**	**A7D65305**	**A7D72010**	**A7D72011**	**A7D72013**
Analyte/Methods (Units)	**Date Collected**		**11/26/2007**	**11/26/2007**	**11/27/2007**	**11/27/2007**	**11/27/2007**
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Volatile Organic Compounds (µg/kg)							
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a	n/a
Benzene	17,000	80	<58	**3100**	**360J**	**1100**	<50
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<58	**3700**	**300J**	**3600**	<50
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<58	**430**	<530	**160J**	<50
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<58	**1700**	**600**	**1600**	<50

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**SB-10 (8-10)**	**SB-11 (0-2)**	**SB-11 (6-8)**	**SB-12 (0-2)**	**SB-13 (0-2)**
		Laboratory Sample Identification	**A7D72014**	**A7D78401**	**A7D78402**	**A7D72202**	**A7D72016**
Analyte/Methods (Units)		**Date Collected**	**11/27/2007**	**11/28/2007**	**11/28/2007**	**11/27/2007**	**11/27/2007**
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Volatile Organic Compounds (µg/kg)							
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	<450	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	<450	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	*<450*	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	<450	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	*<450*	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	*<2300*	n/a	n/a
Benzene	17,000	80	**7200**	*<220*	**1100**	**42**	<47
Carbon disulfide	950,000	450	n/a	n/a	*<450*	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	<450	n/a	n/a
Chloroform	6,000	960	n/a	n/a	**1200**	n/a	n/a
Ethylbenzene	650,000	55,000	**6100**	<220	**1200**	<40	<47
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	<450	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	*<450*	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	<450	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	*<450*	n/a	n/a
Toluene	1,000,000	40,000	**530**	<220	**520**	<40	<47
Trichloroethene	98,000	200	n/a	n/a	*<450*	n/a	n/a
Xylenes, total	700,000	700,000	**4400**	<220	**3700**	<40	<47

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-14 (0-2)**	**SB-14-50 (DUP of SB-14 (0-2))**	**SB-14 (8-11)**	**SB-15 (0-2)**
	Laboratory Sample Identification		**A7D72205**	**A7D72208**	**A7D72206**	**A7D72201**
Analyte/Methods (Units)	**Date Collected**		**11/27/2007**	**11/27/2007**	**11/27/2007**	**11/27/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	**630J**	<52	**130**	<41
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**130**	<52	**88**	<41
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	**100**	<52	<47	<41
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**590**	<52	<47	<41

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-16 (0-2)**	**SB-17 (0-2)**	**SB-18 (0-2)**	**SB-18 (2-4)**
	Laboratory Sample Identification		**A7D72017**	**A7D72203RI**	**A7D85309**	**A7D85310**
Analyte/Methods (Units)	**Date Collected**		**11/27/2007**	**11/27/2007**	**11/29/2007**	**11/29/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	<220	<49
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	<220	<49
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	*<220*	*<49*
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	<220	<49
1,2-Dichloroethane	7,300	40	n/a	n/a	*<220*	*<49*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	*<1100*	<250
Benzene	17,000	80	<45	**170J**	**610**	<49
Carbon disulfide	950,000	450	n/a	n/a	<220	<49
Chlorobenzene	240,000	4,800	n/a	n/a	<220	<49
Chloroform	6,000	960	n/a	n/a	<220	<49
Ethylbenzene	650,000	55,000	**59**	**4000J**	**150J**	<49
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	<220	<49
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	*<220*	<49
Styrene	2,400,000	16,000	n/a	n/a	<220	<49
Tetrachloroethene	140,000	180	n/a	n/a	*<220*	<49
Toluene	1,000,000	40,000	<45	<230UJ	<220	<49
Trichloroethene	98,000	200	n/a	n/a	*<220*	<49
Xylenes, total	700,000	700,000	<45	**890J**	**320**	<49

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-19 (0-2)**	**SB-19 (2-4)**	**SB-20 (0-2)**	**SB-21 (0-2)**
	Laboratory Sample Identification		**A7D85306/RI**	**A7D85307**	**A7D78404/RI**	**A7D78407**
Analyte/Methods (Units)	**Date Collected**		**11/29/2007**	**11/29/2007**	**11/28/2007**	**11/28/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	<89UJ	<110
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	<89UJ	<110
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	*<89UJ*	*<110*
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	<89UJ	<110
1,2-Dichloroethane	7,300	40	n/a	n/a	*<89UJ*	*<110*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	<450UJ	<540
Benzene	17,000	80	**2700J**	**2000**	*<89UJ*	**4700**
Carbon disulfide	950,000	450	n/a	n/a	<89UJ	<110
Chlorobenzene	240,000	4,800	n/a	n/a	<89UJ	<110
Chloroform	6,000	960	n/a	n/a	<89UJ	<110
Ethylbenzene	650,000	55,000	**540J**	**280**	**1200J**	**7500**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	<89UJ	<110
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	<89UJ	*<110*
Styrene	2,400,000	16,000	n/a	n/a	<89UJ	<110
Tetrachloroethene	140,000	180	n/a	n/a	<89UJ	<110
Toluene	1,000,000	40,000	<49UJ	<210	<89UJ	**61J**
Trichloroethene	98,000	200	n/a	n/a	<89UJ	<110
Xylenes, total	700,000	700,000	**700J**	**450**	<89UJ	**2400**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**SB-21 (2-4)**	**SB-22 (0-2)**	**SB-22 (2-4)**	**SB-23 (0-2)**
		Laboratory Sample Identification	**A7D78408**	**A7D85312**	**A7D85313**	**A7D85303**
Analyte/Methods (Units)		**Date Collected**	**11/28/2007**	**11/29/2007**	**11/29/2007**	**11/29/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<110	n/a	<260	<42
1,1-Dichloroethane	2,100,000	13,000	<110	n/a	<260	<42
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<110*	n/a	*<260*	*<42*
1,2-Dichlorobenzene	990,000	77,000	<110	n/a	<260	<42
1,2-Dichloroethane	7,300	40	*<110*	n/a	*<260*	*<42*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<550	n/a	*<1300*	<210
Benzene	17,000	80	**9500**	**6200**	**15000**	**67**
Carbon disulfide	950,000	450	<110	n/a	<260	<42
Chlorobenzene	240,000	4,800	<110	n/a	**160J**	<42
Chloroform	6,000	960	<110	n/a	<260	<42
Ethylbenzene	650,000	55,000	**4100**	**600**	**3100**	**73**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<110	n/a	<260	<42
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<110*	n/a	*<260*	<42
Styrene	2,400,000	16,000	<110	n/a	<260	<42
Tetrachloroethene	140,000	180	<110	n/a	*<260*	<42
Toluene	1,000,000	40,000	**100J**	**1000**	**2000**	<42
Trichloroethene	98,000	200	<110	n/a	*<260*	<42
Xylenes, total	700,000	700,000	<110	**2400**	**9600**	**200**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-23 (8-10)**	**SB-24 (0-2)**	**SB-25 (0-2)**	**SB-25 (4-6)**
	Laboratory Sample Identification		**A7D85304**	**A7D78406**	**A7D85315**	**A7D85316/DL**
Analyte/Methods (Units)	**Date Collected**		**11/29/2007**	**11/28/2007**	**11/29/2007**	**11/29/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<45	n/a	n/a	<250
1,1-Dichloroethane	2,100,000	13,000	<45	n/a	n/a	<250
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<45*	n/a	n/a	*<250*
1,2-Dichlorobenzene	990,000	77,000	<45	n/a	n/a	<250
1,2-Dichloroethane	7,300	40	*<45*	n/a	n/a	*<250*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<230	n/a	n/a	*<1300*
Benzene	17,000	80	**76**	<54	**270**	**17000**
Carbon disulfide	950,000	450	<45	n/a	n/a	<250
Chlorobenzene	240,000	4,800	<45	n/a	n/a	<250
Chloroform	6,000	960	<45	n/a	n/a	<250
Ethylbenzene	650,000	55,000	<45	<54	**80**	**28000D**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<45	n/a	n/a	<250
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<45	n/a	n/a	*<250*
Styrene	2,400,000	16,000	<45	n/a	n/a	<250
Tetrachloroethene	140,000	180	<45	n/a	n/a	*<250*
Toluene	1,000,000	40,000	<45	<54	**62**	**13000**
Trichloroethene	98,000	200	<45	n/a	n/a	*<250*
Xylenes, total	700,000	700,000	<45	<54	**270**	**100000D**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**SB-26 (0-2)**	**SB-26 (5-8)**	**SB-27 (0-2)**	**SB-27 (5-7)**
		Laboratory Sample Identification	**A7D78409**	**A7D78410**	**A7D85301DL**	**A7D85302**
Analyte/Methods (Units)		**Date Collected**	**11/28/2007**	**11/28/2007**	**11/29/2007**	**11/29/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<290	<550	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	<290	<550	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<290*	*<550*	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	<290	<550	n/a	n/a
1,2-Dichloroethane	7,300	40	*<290*	*<550*	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	*<1500*	*<2800*	n/a	n/a
Benzene	17,000	80	**390**	**950**	**9700DJ**	**640**
Carbon disulfide	950,000	450	<290	*<550*	n/a	n/a
Chlorobenzene	240,000	4,800	<290	<550	n/a	n/a
Chloroform	6,000	960	<290	<550	n/a	n/a
Ethylbenzene	650,000	55,000	<290	**480J**	**24000DJ**	**1600**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<290	<550	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<290*	*<550*	n/a	n/a
Styrene	2,400,000	16,000	<290	<550	n/a	n/a
Tetrachloroethene	140,000	180	*<290*	*<550*	n/a	n/a
Toluene	1,000,000	40,000	<290	<550	**8200DJ**	**480**
Trichloroethene	98,000	200	*<290*	*<550*	n/a	n/a
Xylenes, total	700,000	700,000	<290	**2400**	**64000DJ**	**4000**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-28 (0-2)**	**SB-29-0-2**	**SB-29 (6-8)**	**SB-30 (1-3)**
	Laboratory Sample Identification		**A7D78411**	**A7D87501/DL**	**A7D87502/RI**	**A7D78413**
Analyte/Methods (Units)	**Date Collected**		**11/28/2007**	**11/30/2007**	**11/30/2007**	**11/28/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	<47
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	<47
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	*<47*
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	<47
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	*<47*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	<240
Benzene	17,000	80	<53	**4300D**	**530**	<47
Carbon disulfide	950,000	450	n/a	n/a	n/a	<47
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	<47
Chloroform	6,000	960	n/a	n/a	n/a	<47
Ethylbenzene	650,000	55,000	<53	**2300**	**150J**	<47
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	<47
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	<47
Styrene	2,400,000	16,000	n/a	n/a	n/a	<47
Tetrachloroethene	140,000	180	n/a	n/a	n/a	<47
Toluene	1,000,000	40,000	<53	**1100**	**69J**	<47
Trichloroethene	98,000	200	n/a	n/a	n/a	<47
Xylenes, total	700,000	700,000	<53	**3500**	**490**	<47

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-30 (5-7)**	**SB-31 (0-2)**	**SB-32 (0-2)**	**SB-32 (4-6)**	**SB-33 (0-2)**
	Laboratory Sample Identification		**A7D78414**	**A7D78412**	**A7D87504**	**A7D87505**	**A7D87509**
Analyte/Methods (Units)	**Date Collected**		**11/28/2007**	**11/28/2007**	**11/30/2007**	**11/30/2007**	**11/30/2007**
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Volatile Organic Compounds (µg/kg)							
1,1,1-Trichloroethane	1,800,000	5,500	<50	n/a	<57	<61	<61
1,1-Dichloroethane	2,100,000	13,000	<50	n/a	<57	<61	<61
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<50*	n/a	*<57*	*<61*	*<61*
1,2-Dichlorobenzene	990,000	77,000	<50	n/a	<57	<61	<61
1,2-Dichloroethane	7,300	40	*<50*	n/a	*<57*	*<61*	*<61*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<250	n/a	<280	<300	<300
Benzene	17,000	80	**140**	*<100*	<57	<61	<61
Carbon disulfide	950,000	450	<50	n/a	<57	<61	<61
Chlorobenzene	240,000	4,800	<50	n/a	<57	<61	<61
Chloroform	6,000	960	<50	n/a	<57	<61	<61
Ethylbenzene	650,000	55,000	**100**	<100	<57	<61	<61
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<50	n/a	<57	<61	<61
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<50	n/a	<57	<61	<61
Styrene	2,400,000	16,000	<50	n/a	<57	<61	<61
Tetrachloroethene	140,000	180	<50	n/a	<57	<61	<61
Toluene	1,000,000	40,000	<50	**880**	<57	<61	<61
Trichloroethene	98,000	200	<50	n/a	<57	<61	<61
Xylenes, total	700,000	700,000	**100**	<100	<57	<61	<61

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-33 (2-4)**	**SB-34 (0-2)**	**SB-34 (4-6)**	**SB-35 (0-2)**
	Laboratory Sample Identification		**A7D87510**	**A7D87512**	**A7D87511**	**A7D87506**
Analyte/Methods (Units)	**Date Collected**		**11/30/2007**	**11/30/2007**	**11/30/2007**	**11/30/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<63	<54	<58	<45
1,1-Dichloroethane	2,100,000	13,000	<63	<54	<58	<45
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<63*	*<54*	*<58*	*<45*
1,2-Dichlorobenzene	990,000	77,000	<63	<54	<58	<45
1,2-Dichloroethane	7,300	40	*<63*	*<54*	*<58*	*<45*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<310	<270	<290	<220
Benzene	17,000	80	<63	<54	<58	<45
Carbon disulfide	950,000	450	<63	<54	<58	<45
Chlorobenzene	240,000	4,800	<63	<54	<58	<45
Chloroform	6,000	960	<63	<54	<58	<45
Ethylbenzene	650,000	55,000	<63	<54	<58	<45
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<63	<54	<58	<45
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<63	<54	<58	<45
Styrene	2,400,000	16,000	<63	<54	<58	<45
Tetrachloroethene	140,000	180	<63	<54	<58	<45
Toluene	1,000,000	40,000	<63	<54	<58	<45
Trichloroethene	98,000	200	<63	<54	<58	<45
Xylenes, total	700,000	700,000	<63	<54	<58	<45

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-35-50 (DUP of SB-35 (0-2))**	**SB-35 (4-6)**	**SB-36 (0-2)**	**SB-37 (0-2)**
	Laboratory Sample Identification		**A7D87508**	**A7D87507**	**A7D94304**	**A7D94302**
Analyte/Methods (Units)	**Date Collected**		**11/30/2007**	**11/30/2007**	**12/3/2007**	**12/3/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<56	<57	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	<56	<57	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<56*	*<57*	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	<56	<57	n/a	n/a
1,2-Dichloroethane	7,300	40	*<56*	*<57*	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<280	<280	n/a	n/a
Benzene	17,000	80	<56	<57	<55	<51
Carbon disulfide	950,000	450	<56	<57	n/a	n/a
Chlorobenzene	240,000	4,800	<56	<57	n/a	n/a
Chloroform	6,000	960	<56	<57	n/a	n/a
Ethylbenzene	650,000	55,000	<56	<57	<55	<51
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<56	<57	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<56	<57	n/a	n/a
Styrene	2,400,000	16,000	<56	<57	n/a	n/a
Tetrachloroethene	140,000	180	<56	<57	n/a	n/a
Toluene	1,000,000	40,000	<56	<57	<55	<51
Trichloroethene	98,000	200	<56	<57	n/a	n/a
Xylenes, total	700,000	700,000	<56	<57	<55	<51

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-38 (0-2)**	**STFPSB-02 (2-4)**	**STFPSB-02 (5-7)**
	Laboratory Sample Identification		**A7D94301**	**A8E40001/A8E4001DL**	**A8E40002**
Analyte/Methods (Units)		**Date Collected**	**12/3/2007**	**11/11/2008**	**11/11/2008**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<42UJ	<44
1,1-Dichloroethane	2,100,000	13,000	n/a	<42UJ	<44
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<42UJ*	*<44*
1,2-Dichlorobenzene	990,000	77,000	n/a	<42UJ	<44
1,2-Dichloroethane	7,300	40	n/a	*<42UJ*	*<44*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<500UJ	<520
Benzene	17,000	80	<75	<42UJ	<44
Carbon disulfide	950,000	450	n/a	<42UJ	<44
Chlorobenzene	240,000	4,800	n/a	<42UJ	<44
Chloroform	6,000	960	n/a	<42UJ	<44
Ethylbenzene	650,000	55,000	<75	**580D**	**50**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<84UJ	<87
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	<42UJ	<44
Styrene	2,400,000	16,000	n/a	<42UJ	<44
Tetrachloroethene	140,000	180	n/a	<42UJ	<44
Toluene	1,000,000	40,000	<75	<42UJ	<44
Trichloroethene	98,000	200	n/a	<42UJ	<44
Xylenes, total	700,000	700,000	<75	**46000D**	**610**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification and Sample Interval (Feet below ground surface)	**RB-01**	**RB-02**	**RB-03**	**RB-04**	**RB-05**
		Laboratory Sample Identification	**A7C51510**	**A7C51509**	**A7C51508**	**A7C51507**	**A7C51506**
Analyte/Methods (Units)		**Date Collected**	**10/29/2007**	**10/29/2007**	**10/29/2007**	**10/29/2007**	**10/29/2007**
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Volatile Organic Compounds (µg/kg)							
1,1,1-Trichloroethane	1,800,000	5,500	<5	<6	<4	<6	<6
1,1-Dichloroethane	2,100,000	13,000	<5	<6	<4	<6	<6
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<5*	*<6*	*<4*	*<6*	*<6*
1,2-Dichlorobenzene	990,000	77,000	<5	<6	<4	<6	<6
1,2-Dichloroethane	7,300	40	<5	<6	<4	<6	<6
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<27	<32	<22	<29	<28
Benzene	17,000	80	<5	<6	<4	<6	<6
Carbon disulfide	950,000	450	<5	<6	<4	<6	<6
Chlorobenzene	240,000	4,800	<5	<6	<4	<6	<6
Chloroform	6,000	960	<5	<6	<4	<6	<6
Ethylbenzene	650,000	55,000	<5	<6	<4	<6	<6
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<5	<6	<4	<6	<6
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<5	<6	<4	<6	<6
Styrene	2,400,000	16,000	<5	<6	<4	<6	<6
Tetrachloroethene	140,000	180	<5	<6	<4	<6	<6
Toluene	1,000,000	40,000	<5	<6	<4	<6	<6
Trichloroethene	98,000	200	<5	<6	<4	<6	<6
Xylenes, total	700,000	700,000	<5	<6	<4	<6	<6

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-01 (0-2)**	**TW-01 (0-2)**	**TW-02 (0-2)**	**TW-02 (10-11)**
		Laboratory Sample Identification	**A7D18107/KA893**	**A8020508**	**A7D32201**	**A7D32202**
Analyte/Methods (Units)		**Date Collected**	**11/12/2007**	**1/7/2008**	**11/14/2007**	**11/14/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<81	<55	<5
1,1-Dichloroethane	2,100,000	13,000	n/a	<81	<55	<5
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<81*	*<55*	*<5*
1,2-Dichlorobenzene	990,000	77,000	n/a	<81	<55	<5
1,2-Dichloroethane	7,300	40	n/a	*<81*	*<55*	<5
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<400	<270	<25
Benzene	17,000	80	<6	*<81*	**1400**	**120**
Carbon disulfide	950,000	450	n/a	<81	<55	<5
Chlorobenzene	240,000	4,800	n/a	<81	<55	<5
Chloroform	6,000	960	n/a	<81	<55	<5
Ethylbenzene	650,000	55,000	<6	<81	**340**	**180**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<81	<55	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	<81	<55	<5
Styrene	2,400,000	16,000	n/a	<81	<55	<5
Tetrachloroethene	140,000	180	n/a	<81	<55	<5
Toluene	1,000,000	40,000	<6	<81	**60**	**22**
Trichloroethene	98,000	200	n/a	<81	<55	<5
Xylenes, total	700,000	700,000	<6	<81	**600**	**370**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-03 (0-2)**	**DUP-2 (DUP of TW-03 (0-2))**	**TW-03 (15-17)**
	Laboratory Sample Identification		**A7D57501**	**A7D57502**	**A7D57503**
Analyte/Methods (Units)	**Date Collected**		**11/20/2007**	**11/20/2007**	**11/20/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<63	<57	<76
1,1-Dichloroethane	2,100,000	13,000	<63	<57	<76
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<63*	*<57*	*<76*
1,2-Dichlorobenzene	990,000	77,000	<63	<57	<76
1,2-Dichloroethane	7,300	40	*<63*	*<57*	*<76*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<310	<290	<380
Benzene	17,000	80	<63	<57	<76
Carbon disulfide	950,000	450	<63	<57	<76
Chlorobenzene	240,000	4,800	<63	<57	<76
Chloroform	6,000	960	<63	<57	<76
Ethylbenzene	650,000	55,000	<63	<57	<76
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<63	<57	<76
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<63	<57	**320**
Styrene	2,400,000	16,000	<63	<57	<76
Tetrachloroethene	140,000	180	<63	<57	<76
Toluene	1,000,000	40,000	<63	<57	<76
Trichloroethene	98,000	200	<63	<57	<76
Xylenes, total	700,000	700,000	<63	<57	<76

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-04 (0-2)**	**TW-04 (2-4)**	**TW-05 (0-2)**	**TW-05 (5-7)**
	Laboratory Sample Identification		**A7D24305**	**A7D24306**	**A7D50904**	**A7D50905**
Analyte/Methods (Units)	**Date Collected**		**11/13/2007**	**11/13/2007**	**11/19/2007**	**11/19/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<99	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	<99	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<99*	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	<99	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	*<99*	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<500	n/a	n/a
Benzene	17,000	80	*<100*	*<99*	<54	*<210*
Carbon disulfide	950,000	450	n/a	<99	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	<99	n/a	n/a
Chloroform	6,000	960	n/a	<99	n/a	n/a
Ethylbenzene	650,000	55,000	<100	**890**	<54	<210
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<99	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	*<99*	n/a	n/a
Styrene	2,400,000	16,000	n/a	<99	n/a	n/a
Tetrachloroethene	140,000	180	n/a	<99	n/a	n/a
Toluene	1,000,000	40,000	<100	<99	<54	<210
Trichloroethene	98,000	200	n/a	<99	n/a	n/a
Xylenes, total	700,000	700,000	<100	**3200**	<54	<210

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-06 (0-2)**	**TW-07 (0-2)**	**TW-07 (5-7)**	**TW-08 (0-2)**
		Laboratory Sample Identification	**A7D24308**	**A7D50902**	**A7D50903**	**A7D43401**
Analyte/Methods (Units)		**Date Collected**	**11/13/2007**	**11/19/2007**	**11/19/2007**	**11/16/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<53	<48	<5
1,1-Dichloroethane	2,100,000	13,000	n/a	<53	<48	<5
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<53*	*<48*	*<5*
1,2-Dichlorobenzene	990,000	77,000	n/a	<53	<48	<5
1,2-Dichloroethane	7,300	40	n/a	*<53*	*<48*	<5
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<270	<240	<23
Benzene	17,000	80	*<110*	<53	<48	<5
Carbon disulfide	950,000	450	n/a	<53	<48	<5
Chlorobenzene	240,000	4,800	n/a	<53	<48	<5
Chloroform	6,000	960	n/a	<53	<48	<5
Ethylbenzene	650,000	55,000	<110	**210**	<48	<5
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<53	<48	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	<53	<48	<5
Styrene	2,400,000	16,000	n/a	<53	<48	<5
Tetrachloroethene	140,000	180	n/a	<53	<48	<5
Toluene	1,000,000	40,000	<110	<53	<48	<5
Trichloroethene	98,000	200	n/a	<53	<48	<5
Xylenes, total	700,000	700,000	<110	<53	<48	<5

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-08 (5-7)**	**TW-09 (0-2)**	**TW-10 (0-2)**	**TW-10 (7-8)**
	Laboratory Sample Identification		**A7D50901**	**A7D24307**	**A7D40708**	**A7D40709**
Analyte/Methods (Units)	**Date Collected**		**11/19/2007**	**11/13/2007**	**11/15/2007**	**11/15/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<44	<970	n/a	<470
1,1-Dichloroethane	2,100,000	13,000	<44	<970	n/a	<470
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<44*	*<970*	n/a	*<470*
1,2-Dichlorobenzene	990,000	77,000	<44	<970	n/a	<470
1,2-Dichloroethane	7,300	40	*<44*	*<970*	n/a	*<470*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<220	*<4900*	n/a	*<2300*
Benzene	17,000	80	**700**	**3900**	<5	*<470*
Carbon disulfide	950,000	450	<44	*<970*	n/a	*<470*
Chlorobenzene	240,000	4,800	<44	<970	n/a	<470
Chloroform	6,000	960	<44	*<970*	n/a	<470
Ethylbenzene	650,000	55,000	**960**	**17000**	<5	<470
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<44	<970	n/a	<470
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	**190**	*<970*	n/a	*<470*
Styrene	2,400,000	16,000	<44	<970	n/a	<470
Tetrachloroethene	140,000	180	<44	*<970*	n/a	*<470*
Toluene	1,000,000	40,000	**43J**	**4800**	<5	<470
Trichloroethene	98,000	200	<44	*<970*	n/a	*<470*
Xylenes, total	700,000	700,000	**2400**	**26000**	<5	<470

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-11 (0-2)**	**TW-12 (0-2)**	**TW-12 (10-11.5)**	**TW-13 (0-2)**
		Laboratory Sample Identification	**A7D24309**	**A7D40710**	**A7D40711**	**A7D43404**
Analyte/Methods (Units)		**Date Collected**	**11/13/2007**	**11/15/2007**	**11/15/2007**	**11/16/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	<280	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	<280	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	*<280*	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	<280	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	*<280*	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	*<1400*	n/a
Benzene	17,000	80	*<120*	<5	**1600**	**1J**
Carbon disulfide	950,000	450	n/a	n/a	<280	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	<280	n/a
Chloroform	6,000	960	n/a	n/a	<280	n/a
Ethylbenzene	650,000	55,000	<120	**1J**	**11000**	**1J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	<280	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	*<280*	n/a
Styrene	2,400,000	16,000	n/a	n/a	<280	n/a
Tetrachloroethene	140,000	180	n/a	n/a	*<280*	n/a
Toluene	1,000,000	40,000	<120	<5	**220J**	<6
Trichloroethene	98,000	200	n/a	n/a	*<280*	n/a
Xylenes, total	700,000	700,000	<120	**5**	**13000**	**4J**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**DUP-1 (DUP of TW-13 (0-2))**	**TW-14 (0-2)**	**TW-15 (0-2)**	**TW-15 (5-7.5)**
	Laboratory Sample Identification		**A7D43405**	**A7D32203**	**A7D57504**	**A7D57505**
Analyte/Methods (Units)	**Date Collected**		**11/16/2007**	**11/14/2007**	**11/20/2007**	**11/20/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<5	<48	<46
1,1-Dichloroethane	2,100,000	13,000	n/a	<5	<48	<46
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<5*	*<48*	*<46*
1,2-Dichlorobenzene	990,000	77,000	n/a	<5	<48	<46
1,2-Dichloroethane	7,300	40	n/a	<5	*<48*	*<46*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<26	<240	<230
Benzene	17,000	80	<4	**32**	<48	<46
Carbon disulfide	950,000	450	n/a	<5	<48	<46
Chlorobenzene	240,000	4,800	n/a	<5	<48	<46
Chloroform	6,000	960	n/a	<5	<48	<46
Ethylbenzene	650,000	55,000	<4	**35**	<48	<46
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<5	<48	<46
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	<5	<48	<46
Styrene	2,400,000	16,000	n/a	<5	<48	<46
Tetrachloroethene	140,000	180	n/a	<5	<48	<46
Toluene	1,000,000	40,000	<4	<5	<48	<46
Trichloroethene	98,000	200	n/a	<5	<48	<46
Xylenes, total	700,000	700,000	**2J**	<5	<48	<46

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-16 (0-2)**	**TW-16 (10-12)**	**TW-17 (0-2)**	**TW-17 (10-12)**
		Laboratory Sample Identification	**A7D43402**	**A7D43403DL**	**A7D72001**	**A7D72002**
Analyte/Methods (Units)		**Date Collected**	**11/16/2007**	**11/16/2007**	**11/27/2007**	**11/27/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<6	**910D**	*<96*	<75
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**4J**	**130D**	<96	<75
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<6	**31DJ**	<96	<75
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**7**	**500D**	<96	<75

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-18 (0-2)**	**TW-19 (0-2)**	**TW-19 (5-6)**	**TW-20 (0-2)**
		Laboratory Sample Identification	**A7D51001**	**A7D32204**	**A7D40707/DL**	**A7D65319**
Analyte/Methods (Units)		**Date Collected**	**11/19/2007**	**11/14/2007**	**11/15/2007**	**11/26/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<5	<500	<49
1,1-Dichloroethane	2,100,000	13,000	n/a	<5	<500	<49
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<5*	*<500*	*<49*
1,2-Dichlorobenzene	990,000	77,000	n/a	<5	<500	<49
1,2-Dichloroethane	7,300	40	n/a	<5	*<500*	*<49*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<24	*<2500*	<250
Benzene	17,000	80	<56	<5	**18000**	<49
Carbon disulfide	950,000	450	n/a	<5	*<500*	<49
Chlorobenzene	240,000	4,800	n/a	<5	<500	<49
Chloroform	6,000	960	n/a	<5	<500	<49
Ethylbenzene	650,000	55,000	<56	<5	**51000D**	<49
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<5	<500	<49
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	<5	*<500*	<49
Styrene	2,400,000	16,000	n/a	<5	<500	<49
Tetrachloroethene	140,000	180	n/a	<5	*<500*	<49
Toluene	1,000,000	40,000	<56	<5	**2200**	<49
Trichloroethene	98,000	200	n/a	<5	*<500*	<49
Xylenes, total	700,000	700,000	<56	<5	**170000D**	<49

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification and Sample Interval (Feet below ground surface)	**TW-20 (10-12)**	**TW-21 (0-2)**	**TW-21 (10-12)**	**TW-22 (0-2)**
		Laboratory Sample Identification	**A7D65320**	**A7D65317**	**A7D65318**	**A7D57506**
Analyte/Methods (Units)		**Date Collected**	**11/26/2007**	**11/26/2007**	**11/26/2007**	**11/20/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<97	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	<97	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	<97	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	<97	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	<97	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<490	n/a	n/a	n/a
Benzene	17,000	80	<97	<49	<51	<52
Carbon disulfide	950,000	450	<97	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	<97	n/a	n/a	n/a
Chloroform	6,000	960	<97	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<97	<49	<51	<52
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<97	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<97	n/a	n/a	n/a
Styrene	2,400,000	16,000	<97	n/a	n/a	n/a
Tetrachloroethene	140,000	180	<97	n/a	n/a	n/a
Toluene	1,000,000	40,000	<97	<49	<51	<52
Trichloroethene	98,000	200	<97	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<97	<49	<51	<52

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TW-22 (10-12)	TW-23S (0-2)	TW-23S (10-11)	TW-24S (0-2)
	Laboratory Sample Identification		A7D57507	A7D72003	A7D72004	A7D72005
Analyte/Methods (Units)	Date Collected		11/20/2007	11/27/2007	11/27/2007	11/27/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<52	*<270*	<52	<60
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<52	<270	<52	<60
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<52	<270	<52	<60
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<52	<270	<52	<60

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-24S (6-7.5)**	**TW-25S (0-2)**	**TW-25S (2-4)**	**TW-26 (0-2)**
	Laboratory Sample Identification		**A7D72007**	**A7D72006**	**A7D72008**	**A7D78416**
Analyte/Methods (Units)	**Date Collected**		**11/27/2007**	**11/27/2007**	**11/27/2007**	**11/28/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<310	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	<310	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<310*	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	<310	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	*<310*	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<1600	n/a	n/a	n/a
Benzene	17,000	80	*<310*	<59	<54	<52
Carbon disulfide	950,000	450	<310	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	<310	n/a	n/a	n/a
Chloroform	6,000	960	<310	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<310	<59	<54	<52
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<310	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<310*	n/a	n/a	n/a
Styrene	2,400,000	16,000	<310	n/a	n/a	n/a
Tetrachloroethene	140,000	180	*<310*	n/a	n/a	n/a
Toluene	1,000,000	40,000	<310	<59	<54	<52
Trichloroethene	98,000	200	*<310*	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<310	<59	<54	<52

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-26 (12-12.5)**	**TW-27S (0-2)**	**TW-28 (0-2)**	**TW-28 (2-2.5)**
		Laboratory Sample Identification	**A7D78417**	**A7D72009**	**A7D96001**	**A7D96002**
Analyte/Methods (Units)		**Date Collected**	**11/28/2007**	**11/27/2007**	**12/4/2007**	**12/4/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	<48	<52
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	<48	<52
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	*<48*	*<52*
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	<48	<52
1,2-Dichloroethane	7,300	40	n/a	n/a	*<48*	*<52*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	<240	<260
Benzene	17,000	80	*<130*	<56	**25J**	**450**
Carbon disulfide	950,000	450	n/a	n/a	<48	<52
Chlorobenzene	240,000	4,800	n/a	n/a	<48	**42J**
Chloroform	6,000	960	n/a	n/a	<48	<52
Ethylbenzene	650,000	55,000	<130	<56	**92**	**970**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	<48	<52
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	<48	<52
Styrene	2,400,000	16,000	n/a	n/a	<48	<52
Tetrachloroethene	140,000	180	n/a	n/a	<48	<52
Toluene	1,000,000	40,000	<130	<56	<48	**200**
Trichloroethene	98,000	200	n/a	n/a	<48	<52
Xylenes, total	700,000	700,000	<130	<56	**940**	**6900**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-28 (25-27.5)**	**TW-29 (0-2)**	**TW-29 (0-2)**	**DUP-3 (DUP of TW-29 (0-2))**
	Laboratory Sample Identification		**A7D96003/DL**	**A7E12603**	**A7E21703**	**A7E12605**
Analyte/Methods (Units)	**Date Collected**		**12/4/2007**	**12/6/2007**	**12/7/2007**	**12/6/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<240	<52	n/a	<60
1,1-Dichloroethane	2,100,000	13,000	<240	<52	n/a	<60
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<240*	*<52*	n/a	*<60*
1,2-Dichlorobenzene	990,000	77,000	<240	<52	n/a	<60
1,2-Dichloroethane	7,300	40	*<240*	*<52*	n/a	*<60*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	*<1200*	<260	n/a	<300
Benzene	17,000	80	**24000D**	<52	<56	<60
Carbon disulfide	950,000	450	<240	<52	n/a	<60
Chlorobenzene	240,000	4,800	<240	<52	n/a	<60
Chloroform	6,000	960	<240	<52	n/a	<60
Ethylbenzene	650,000	55,000	**69000D**	<52	<56	<60
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<240	<52	n/a	<60
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<240*	<52	n/a	<60
Styrene	2,400,000	16,000	<240	<52	n/a	<60
Tetrachloroethene	140,000	180	*<240*	<52	n/a	<60
Toluene	1,000,000	40,000	**25000D**	<52	<56	<60
Trichloroethene	98,000	200	*<240*	<52	n/a	<60
Xylenes, total	700,000	700,000	**310000D**	<52	<56	<60

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TW-29 (6.5-8)	TW-30 (0-2)	TW-31S (0-2)	TW-31S (12-13)
	Laboratory Sample Identification		A7E12604RE	A7D85317	A7E21704	A7E21705
Analyte/Methods (Units)	Date Collected		12/6/2007	11/29/2007	12/7/2007	12/7/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<130UJ	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	<130UJ	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<130UJ*	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	<130UJ	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	*<130UJ*	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<670UJ	n/a	n/a	n/a
Benzene	17,000	80	*<130UJ*	<61	<61	<52
Carbon disulfide	950,000	450	<130UJ	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	<130UJ	n/a	n/a	n/a
Chloroform	6,000	960	*<130UJ*	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<130UJ	<61	<61	<52
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<130UJ	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<130UJ*	n/a	n/a	n/a
Styrene	2,400,000	16,000	<130UJ	n/a	n/a	n/a
Tetrachloroethene	140,000	180	<130UJ	n/a	n/a	n/a
Toluene	1,000,000	40,000	<130UJ	<61	<61	<52
Trichloroethene	98,000	200	<130UJ	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<130UJ	<61	<61	<52

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-32S (0-1)**	**TW-33 (0-2)**	**TW-33 (4-4.5)**	**TW-34 (0-2)**
		Laboratory Sample Identification	**A7E12401**	**A7E12601**	**A7E12602/DL**	**A7D96004**
Analyte/Methods (Units)		**Date Collected**	**12/5/2007**	**12/6/2007**	**12/6/2007**	**12/4/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<54	<320	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	<54	<320	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<54*	*<320*	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	<54	<320	n/a
1,2-Dichloroethane	7,300	40	n/a	*<54*	*<320*	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<270	*<1600*	n/a
Benzene	17,000	80	<54	**1600**	**28000**	<50
Carbon disulfide	950,000	450	n/a	<54	<320	n/a
Chlorobenzene	240,000	4,800	n/a	<54	<320	n/a
Chloroform	6,000	960	n/a	<54	<320	n/a
Ethylbenzene	650,000	55,000	<54	**1400**	**84000D**	<50
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<54	<320	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	**380**	**2900**	n/a
Styrene	2,400,000	16,000	n/a	<54	<320	n/a
Tetrachloroethene	140,000	180	n/a	<54	*<320*	n/a
Toluene	1,000,000	40,000	<54	**65**	**3300**	<50
Trichloroethene	98,000	200	n/a	<54	*<320*	n/a
Xylenes, total	700,000	700,000	<54	**3300**	**250000D**	<50

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-35 (0-2)**	**TW-36 (0-2)**	**TW-36 (14-15)**	**TW-37 (0-2)**
		Laboratory Sample Identification	**A7D94306**	**A7D85320**	**A7D85321**	**A7E12403**
Analyte/Methods (Units)		**Date Collected**	**12/3/2007**	**11/29/2007**	**11/29/2007**	**12/5/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<57	<59	<61	n/a
1,1-Dichloroethane	2,100,000	13,000	<57	<59	<61	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<57*	*<59*	*<61*	n/a
1,2-Dichlorobenzene	990,000	77,000	<57	<59	<61	n/a
1,2-Dichloroethane	7,300	40	*<57*	*<59*	*<61*	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<280	<300	<300	n/a
Benzene	17,000	80	<57	<59	**31J**	*<100*
Carbon disulfide	950,000	450	<57	<59	<61	n/a
Chlorobenzene	240,000	4,800	<57	<59	<61	n/a
Chloroform	6,000	960	<57	<59	<61	n/a
Ethylbenzene	650,000	55,000	<57	<59	<61	<100
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<57	<59	<61	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<57	<59	**690**	n/a
Styrene	2,400,000	16,000	<57	<59	<61	n/a
Tetrachloroethene	140,000	180	<57	<59	<61	n/a
Toluene	1,000,000	40,000	<57	<59	<61	<100
Trichloroethene	98,000	200	<57	<59	<61	n/a
Xylenes, total	700,000	700,000	<57	<59	<61	<100

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-37 (2-4)**	**TW-38 (0-2)**	**TW-38 (10-12.5)**	**TW-40 (0-1)**
	Laboratory Sample Identification		**A7E12404**	**A7D85318**	**A7D85319/DL**	**A7E12402**
Analyte/Methods (Units)	**Date Collected**		**12/5/2007**	**11/29/2007**	**11/29/2007**	**12/5/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<57	<59	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	<57	<59	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<57*	*<59*	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	<57	<59	n/a
1,2-Dichloroethane	7,300	40	n/a	*<57*	*<59*	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<280	<300	n/a
Benzene	17,000	80	**970**	<57	<59	<79
Carbon disulfide	950,000	450	n/a	<57	<59	n/a
Chlorobenzene	240,000	4,800	n/a	<57	<59	n/a
Chloroform	6,000	960	n/a	<57	<59	n/a
Ethylbenzene	650,000	55,000	**11000**	<57	<59	<79
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<57	<59	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	**44J**	**41000D**	n/a
Styrene	2,400,000	16,000	n/a	<57	<59	n/a
Tetrachloroethene	140,000	180	n/a	<57	<59	n/a
Toluene	1,000,000	40,000	<540	<57	<59	<79
Trichloroethene	98,000	200	n/a	<57	<59	n/a
Xylenes, total	700,000	700,000	**43000**	<57	<59	<79

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**TW-41 (0.5-2.0)**	**TW-41-50 (DUP of TW-41 (0.5-2.0))**	**TW-42 (0-2)**
	Laboratory Sample Identification		**A7E86701**	**A7E86702**	**A7E21701**
Analyte/Methods (Units)	**Date Collected**		**12/20/2007**	**12/20/2007**	**12/7/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a
Benzene	17,000	80	<57	<60	<66
Carbon disulfide	950,000	450	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<57	<60	<66
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a
Toluene	1,000,000	40,000	<57	<60	<66
Trichloroethene	98,000	200	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<57	<60	<66

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-42 (7.5-10)**	**TW-43 (0-2)**	**TW-45 (0.5-2.0)**	**TW-45 (6-8)**
		Laboratory Sample Identification	**A7E21702/DL**	**A7D94305**	**A8080904**	**A8080905**
Analyte/Methods (Units)		**Date Collected**	**12/7/2007**	**12/3/2007**	**1/22/2008**	**1/22/2008**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	**4000D**	<50	<51	**2300**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**3700D**	<50	<51	**500**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<43	<50	<51	**91J**
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**2400D**	<50	<51	**270**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-46 (0-2)**	**TW-46 (2-4)**	**TW-47 (0.5-2.0)**
	Laboratory Sample Identification		**A8086102**	**A8086103**	**A8080901**
Analyte/Methods (Units)	**Date Collected**		**1/23/2008**	**1/23/2008**	**1/22/2008**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a
Benzene	17,000	80	**740**	**4000**	<56
Carbon disulfide	950,000	450	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**120**	**2000**	<56
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a
Toluene	1,000,000	40,000	**80**	**1900**	<56
Trichloroethene	98,000	200	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**380**	**7400**	<56

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-47-50 (DUP of TW-47 (0.5-2.0))**	**TW-47 (5-6)**	**TW-48 (0-2)**
		Laboratory Sample Identification	**A8080903**	**A8080902**	**A7E44113**
Analyte/Methods (Units)		**Date Collected**	**1/22/2008**	**1/22/2008**	**12/12/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a
Benzene	17,000	80	<48	**420**	<58
Carbon disulfide	950,000	450	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<48	**34J**	<58
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a
Toluene	1,000,000	40,000	<48	<59	<58
Trichloroethene	98,000	200	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<48	**220**	<58

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-49 (0-2)**	**TW-49 (6-8)**	**TW-50 (0.5-2.0)**
	Laboratory Sample Identification		**A8086104**	**A8086105**	**A8092904**
Analyte/Methods (Units)	**Date Collected**		**1/23/2008**	**1/23/2008**	**1/25/2008**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<55	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	<55	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<55*	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	<55	n/a
1,2-Dichloroethane	7,300	40	n/a	*<55*	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<280	n/a
Benzene	17,000	80	<69	**2200**	<54
Carbon disulfide	950,000	450	n/a	<55	n/a
Chlorobenzene	240,000	4,800	n/a	<55	n/a
Chloroform	6,000	960	n/a	<55	n/a
Ethylbenzene	650,000	55,000	<69	**4000**	<54
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<55	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	<55	n/a
Styrene	2,400,000	16,000	n/a	<55	n/a
Tetrachloroethene	140,000	180	n/a	<55	n/a
Toluene	1,000,000	40,000	<69	**210**	<54
Trichloroethene	98,000	200	n/a	<55	n/a
Xylenes, total	700,000	700,000	<69	**1600**	<54

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-50-50 (DUP of TW-50 (0.5-2.0))**	**TW-50 (8-10)**	**TW-51 (0-2)**
	Laboratory Sample Identification		**A8092905**	**A8092906**	**A8086106**
Analyte/Methods (Units)	**Date Collected**		**1/25/2008**	**1/25/2008**	**1/23/2008**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<49	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	<49	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<49*	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	<49	n/a
1,2-Dichloroethane	7,300	40	n/a	*<49*	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<240	n/a
Benzene	17,000	80	<56	**26J**	**110**
Carbon disulfide	950,000	450	n/a	<49	n/a
Chlorobenzene	240,000	4,800	n/a	<49	n/a
Chloroform	6,000	960	n/a	<49	n/a
Ethylbenzene	650,000	55,000	<56	**110**	**120**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<49	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	<49	n/a
Styrene	2,400,000	16,000	n/a	<49	n/a
Tetrachloroethene	140,000	180	n/a	<49	n/a
Toluene	1,000,000	40,000	<56	<49	<59
Trichloroethene	98,000	200	n/a	<49	n/a
Xylenes, total	700,000	700,000	<56	<49	<59

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-51-0-2-50 (DUP of TW-51 (0-2))**	**TW-51 (8-10)**	**TW-52 (0.5-2.0)**
		Laboratory Sample Identification	**A8086107**	**A8086108/DL**	**A8088801**
Analyte/Methods (Units)		**Date Collected**	**1/23/2008**	**1/23/2008**	**1/24/2008**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<670	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	<670	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<670*	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	<670	n/a
1,2-Dichloroethane	7,300	40	n/a	*<670*	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	*<3400*	n/a
Benzene	17,000	80	**160**	**9700**	<57
Carbon disulfide	950,000	450	n/a	*<670*	n/a
Chlorobenzene	240,000	4,800	n/a	<670	n/a
Chloroform	6,000	960	n/a	<670	n/a
Ethylbenzene	650,000	55,000	**170**	**58000D**	<57
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<670	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	*<670*	n/a
Styrene	2,400,000	16,000	n/a	<670	n/a
Tetrachloroethene	140,000	180	n/a	*<670*	n/a
Toluene	1,000,000	40,000	<62	**700**	<57
Trichloroethene	98,000	200	n/a	*<670*	n/a
Xylenes, total	700,000	700,000	**76**	**240000D**	<57

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-52 (10-12)**	**TW-53 (0.5-2.0)**	**TW-53 (12-13.4)**
	Laboratory Sample Identification		**A8088802**	**A8088803**	**A8088804**
Analyte/Methods (Units)	**Date Collected**		**1/24/2008**	**1/24/2008**	**1/24/2008**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	<310	<53	n/a
1,1-Dichloroethane	2,100,000	13,000	<310	<53	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<310*	*<53*	n/a
1,2-Dichlorobenzene	990,000	77,000	<310	<53	n/a
1,2-Dichloroethane	7,300	40	<310	*<53*	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<1500	<260	n/a
Benzene	17,000	80	**700**	**100**	**2600**
Carbon disulfide	950,000	450	<310	<53	n/a
Chlorobenzene	240,000	4,800	<310	<53	n/a
Chloroform	6,000	960	<310	<53	n/a
Ethylbenzene	650,000	55,000	**2700**	**120**	**3000**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<310	<53	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<310	<53	n/a
Styrene	2,400,000	16,000	<310	<53	n/a
Tetrachloroethene	140,000	180	<310	<53	n/a
Toluene	1,000,000	40,000	**270J**	<53	**76**
Trichloroethene	98,000	200	<310	<53	n/a
Xylenes, total	700,000	700,000	2700	**190**	**1800**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-54 (0.5-2.0)**	**TW-54-50 (DUP of TW-54 (0.5-2.0))**	**TW-55 (0.5-2.0)**
		Laboratory Sample Identification	**A8088805**	**A8088806**	**A8088807**
Analyte/Methods (Units)		**Date Collected**	**1/24/2008**	**1/24/2008**	**1/24/2008**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a
Benzene	17,000	80	**260**	**380**	*<120*
Carbon disulfide	950,000	450	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**33J**	**39J**	<120
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a
Toluene	1,000,000	40,000	<64	<56	<120
Trichloroethene	98,000	200	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<64	<56	<120

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-55 (4-6)**	**TW-56 (0-2)**	**TW-57 (0.5-2.0)**	**TW-58 (0-2)**
		Laboratory Sample Identification	**A8088808/DL**	**A7E44114**	**A8106001**	**A7E54614**
Analyte/Methods (Units)		**Date Collected**	**1/24/2008**	**12/12/2007**	**1/20/2008**	**12/13/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	**500000D**	<75	<53	<51
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<2400	<75	<53	<51
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	**2000J**	<75	<53	<51
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	5000	<75	<53	<51

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**TW-59 (0.5-2.0)**	**TW-59-50 (DUP of TW-59 (0.5-2.0))**	**TW-60 (0.5-2.0)**
	Laboratory Sample Identification		**A8105701**	**A8105702**	**A7E80003**
Analyte/Methods (Units)	**Date Collected**		**1/29/2008**	**1/29/2008**	**12/19/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a
Benzene	17,000	80	<54	<46	<54
Carbon disulfide	950,000	450	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<54	<46	<54
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a
Toluene	1,000,000	40,000	<54	<46	<54
Trichloroethene	98,000	200	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<54	<46	<54

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-61 (0.5-2.0)**	**TW-62 (0.5-1.5)**	**TW-63 (0.5-2.0)**
	Laboratory Sample Identification		**A8106007**	**A7E57003**	**A7E80004**
Analyte/Methods (Units)	**Date Collected**		**1/30/2007**	**12/14/2007**	**12/19/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a
Benzene	17,000	80	<47	<56	<59
Carbon disulfide	950,000	450	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	**33J**	<56	<59
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a
Toluene	1,000,000	40,000	**26J**	<56	<59
Trichloroethene	98,000	200	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**180**	<56	<59

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification and Sample Interval (Feet below ground surface)	**TW-64 (0.5-2.0)**	**TW-64-50 (DUP of TW-64 (0.5-2.0))**	**TW-65 (2.0-3.0)**
		Laboratory Sample Identification	**A7E80001**	**A7E80002**	**A7E71701**
Analyte/Methods (Units)		**Date Collected**	**12/19/2007**	**12/19/2007**	**12/18/2007**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a
Benzene	17,000	80	**66**	**62**	<63
Carbon disulfide	950,000	450	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<55	**160**	<63
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a
Toluene	1,000,000	40,000	**44J**	<56	<63
Trichloroethene	98,000	200	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<55	**230**	<63

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-66 (0.7-2.0)**	**TW-67 (0.5-2.0)**	**TW-68 (0.5-2.0)**	**TW-68 (4-6)**
	Laboratory Sample Identification		**A7E64402**	**A8106006**	**A8106004**	**A8106005**
Analyte/Methods (Units)	**Date Collected**		**12/17/2007**	**1/30/2008**	**1/30/2008**	**1/30/2008**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	<28	<45	<52
1,1-Dichloroethane	2,100,000	13,000	n/a	<28	<45	<52
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	*<28*	*<45*	*<52*
1,2-Dichlorobenzene	990,000	77,000	n/a	<28	<45	<52
1,2-Dichloroethane	7,300	40	n/a	<28	*<45*	*<52*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	<140	<220	<260
Benzene	17,000	80	<67	**53**	**43J**	**160**
Carbon disulfide	950,000	450	n/a	<28	<45	<52
Chlorobenzene	240,000	4,800	n/a	<28	<45	<52
Chloroform	6,000	960	n/a	<28	<45	<52
Ethylbenzene	650,000	55,000	<67	**20J**	**82**	**49J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	<28	<45	<52
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	<28	<45	<52
Styrene	2,400,000	16,000	n/a	<28	<45	<52
Tetrachloroethene	140,000	180	n/a	<28	<45	<52
Toluene	1,000,000	40,000	<67	**51**	<45	<52
Trichloroethene	98,000	200	n/a	<28	<45	<52
Xylenes, total	700,000	700,000	<67	**71**	<45	<52

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-69 (0.5-2.0)**	**TW-70 (0.5-2.0)**	**TW-71 (0.5-2.0)**	**TW-72 (0-2)**
	Laboratory Sample Identification		**A7E64401**	**A8106002**	**A8106003**	**A7D51002**
Analyte/Methods (Units)	**Date Collected**		**12/12/2007**	**1/30/2008**	**1/30/2008**	**11/19/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a
Benzene	17,000	80	<61	<42	<51	<51
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<61	<42	<51	<51
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<61	<42	<51	<51
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<61	<42	<51	<51

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification and Sample Interval (Feet below ground surface)	**TW-72 (11-12.5)**	**TW-73 (0-2)**	**TW-74 (0-2)**	**TW-74 (14-15)**
		Laboratory Sample Identification	**A7D51003**	**A7D51004**	**A7E21501**	**A7E21502**
Analyte/Methods (Units)		**Date Collected**	**11/19/2007**	**11/19/2007**	**12/7/2007**	**12/7/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	<280	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	<280	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<280*	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	<280	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	*<280*	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	*<1400*	n/a	n/a	n/a
Benzene	17,000	80	*<280*	<44	<50	<52
Carbon disulfide	950,000	450	<280	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	<280	n/a	n/a	n/a
Chloroform	6,000	960	<280	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<280	<44	<50	<52
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<280	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	*<280*	n/a	n/a	n/a
Styrene	2,400,000	16,000	<280	n/a	n/a	n/a
Tetrachloroethene	140,000	180	*<280*	n/a	n/a	n/a
Toluene	1,000,000	40,000	<280	<44	<50	<52
Trichloroethene	98,000	200	*<280*	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<280	<44	<50	<52

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-75 (14-15)**	**TW-76 (13-15)**	**TW-77 (18-20)**	**TW-78 (16-18)**
		Laboratory Sample Identification	**A7E21503**	**A7E21504**	**A7E21505**	**A7E21507**
Analyte/Methods (Units)		**Date Collected**	**12/7/2007**	**12/7/2007**	**12/7/2007**	**12/7/2007**
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	<56	<56
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	<56	<56
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	*<56*	*<56*
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	<56	<56
1,2-Dichloroethane	7,300	40	n/a	n/a	*<56*	*<56*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	<280	<280
Benzene	17,000	80	<54	<53	<56	<56
Carbon disulfide	950,000	450	n/a	n/a	<56	<56
Chlorobenzene	240,000	4,800	n/a	n/a	<56	<56
Chloroform	6,000	960	n/a	n/a	<56	<56
Ethylbenzene	650,000	55,000	<54	<53	<56	<56
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	<56	<56
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	<56	<56
Styrene	2,400,000	16,000	n/a	n/a	<56	<56
Tetrachloroethene	140,000	180	n/a	n/a	<56	<56
Toluene	1,000,000	40,000	<54	<53	<56	<56
Trichloroethene	98,000	200	n/a	n/a	<56	<56
Xylenes, total	700,000	700,000	<54	<53	<56	<56

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification and Sample Interval (Feet below ground surface)	**TW-79 (0.5-2.0)**	**TW-80 (0.5-2.0)**	**TW-80 (10-12.6)**
		Laboratory Sample Identification	**A8092903**	**A8092901**	**A8092902**
Analyte/Methods (Units)		**Date Collected**	**1/25/2008**	**1/25/2008**	**1/25/2008**
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Volatile Organic Compounds (µg/kg)					
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	<160
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	<160
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	*<160*
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	<160
1,2-Dichloroethane	7,300	40	n/a	n/a	*<160*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	<820
Benzene	17,000	80	<54	<60	*<160*
Carbon disulfide	950,000	450	n/a	n/a	<160
Chlorobenzene	240,000	4,800	n/a	n/a	<160
Chloroform	6,000	960	n/a	n/a	<160
Ethylbenzene	650,000	55,000	<54	<60	**2500**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	<160
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	*<160*
Styrene	2,400,000	16,000	n/a	n/a	<160
Tetrachloroethene	140,000	180	n/a	n/a	<160
Toluene	1,000,000	40,000	<54	<60	<160
Trichloroethene	98,000	200	n/a	n/a	<160
Xylenes, total	700,000	700,000	<54	<60	**2700**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7a

Soil Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

		Location Identification and Sample Interval (Feet below ground surface)	**TW-107 (16-17)**
		Laboratory Sample Identification	**RSA0244-01**
Analyte/Methods (Units)		**Date Collected**	**1/8/2009**
	Kansas Tier II Risk-Based Standards		
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**	
Volatile Organic Compounds (µg/kg)			
1,1,1-Trichloroethane	1,800,000	5,500	<5.5UJ
1,1-Dichloroethane	2,100,000	13,000	<5.5UJ
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	*<5.5UJ*
1,2-Dichlorobenzene	990,000	77,000	<5.5UJ
1,2-Dichloroethane	7,300	40	<5.5UJ
1,4-Dioxane (p-dioxane)	1,700,000	1,100	<58UJ
Benzene	17,000	80	**2.5J**
Carbon disulfide	950,000	450	<5.5UJ
Chlorobenzene	240,000	4,800	<5.5UJ
Chloroform	6,000	960	<5.5UJ
Ethylbenzene	650,000	55,000	**1.2J**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	<7.5UJ
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	**11J**
Styrene	2,400,000	16,000	<5.5UJ
Tetrachloroethene	140,000	180	<5.5UJ
Toluene	1,000,000	40,000	<5.5UJ
Trichloroethene	98,000	200	<5.5UJ
Xylenes, total	700,000	700,000	<5.5UJ

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
n/a	Not analyzed
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 44)

	Location Identification and Sample Interval (Feet below ground surface)		**PSB-04 (3.75-5.75)**	**PSB-05 (2.8-4.8)**	**PSB-06 (3.75-5.75)**	**PSB-11 (4-6)**	**PSB-12 (2-4)**
	Laboratory Sample Identification		**A8D70803**	**A8D70805**	**A8D81002**	**A8D85103**	**A8D85105**
	Date Collected		**10/29/2008**	**10/29/2008**	**10/30/2008**	**10/31/2008**	**10/31/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<200	<190	<210	<210	<200
1,3-Dichlorobenzene	NA	NA	<200	<190	<210	<210	<200
1,4-Dichlorobenzene	92,000	9,500	**10J**	<190	<210	<210	<200
2,4-Dimethylphenol	14,000,000	81,000	<120	<120	<120	<120	<120
2,4-Dinitrophenol	1,200,000	2,100	<120	<120	<120	<120	<120
2-Methylphenol (o-cresol)	6,500,000	29,000	<120	<120	<120	<120	<120
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<120	<120	<120	<120	<120
4-Nitrophenol	NA	NA	<120	<120	<120	<120	<120
Acenaphthene	300,000	300,000	<120	<120	**14J**	**16J**	<120
Anthracene	13,000	13,000	<120	<120	**12J**	**33J**	<120
Benzo(a)anthracene	26,000	35,000	<120	<120	**13J**	**59J**	**42J**
Benzo(a)pyrene	2,600	16,000	<120	<120	<120	<120	**18J**
Benzo(b)fluoranthene	19,000	19,000	<120	<120	<120	**17J**	<120
Benzo(k)fluoranthene	10,000	10,000	<120	<120	<120	**16J**	<120
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<120	<120	<120	<120	<120
Chrysene	6,400	6,400	<120	<120	**9J**	**140**	**30J**
Dibenzo(a,h)anthracene	2,600	11,000	<120	<120	<120	<120	<120
Diethyl phthalate	3,200,000	3,200,000	<120	<120	<120	<120	<120
Dimethyl phthalate	6,812,563,000	11,456,000	<120	<120	<120	<120	<120
Di-n-butylphthalate	3,798,000	3,798,000	<120	<120	<120	<120	<120
Fluoranthene	220,000	220,000	<120	<120	**8J**	**36J**	**11J**
Fluorene	270,000	270,000	<120	<120	**20J**	**11J**	<120
Indeno(1,2,3-cd)pyrene	5,100	5,100	<120	<120	<120	<120	<120

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**PSB-04 (3.75-5.75)**	**PSB-05 (2.8-4.8)**	**PSB-06 (3.75-5.75)**	**PSB-11 (4-6)**	**PSB-12 (2-4)**
	Laboratory Sample Identification		**A8D70803**	**A8D70805**	**A8D81002**	**A8D85103**	**A8D85105**
	Date Collected		**10/29/2008**	**10/29/2008**	**10/30/2008**	**10/31/2008**	**10/31/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	<120	<120	**260**	<120	**9J**
Phenanthrene	NA	NA	<120	<120	**96J**	**66J**	**16J**
Phenol	32,000,000	560,000	<120	<120	<120	<120	<120
Pyrene	140,000	140,000	<120	<120	**17J**	**150**	**53J**
Pyridine	150,000	50	*<120*	*<120*	*<120*	*<120*	*<120*
Quinoline	NA	NA	<120	<120	<120	<120	<120

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	PSB-13 (2.75-4.75)	PSB-15 (12.5-14.5)	PSB-16 (11.5-13.5)	PSB-17 (11-13)	PSB-18 (9-11)
Location Identification and Sample Interval (Feet below ground surface)			PSB-13 (2.75-4.75)	PSB-15 (12.5-14.5)	PSB-16 (11.5-13.5)	PSB-17 (11-13)	PSB-18 (9-11)
Laboratory Sample Identification			A8D89102	A8D89105	A8D89107	A8D98902	A8D98904
Date Collected			11/3/2008	11/3/2008	11/3/2008	11/4/2008	11/4/2008
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<200	<200	<210	<200	<200
1,3-Dichlorobenzene	NA	NA	<200	<200	<210	<200	<200
1,4-Dichlorobenzene	92,000	9,500	<200	<200	<210	<200	<200
2,4-Dimethylphenol	14,000,000	81,000	<120UJ	<120UJ	<130UJ	<120	<120
2,4-Dinitrophenol	1,200,000	2,100	<120	<120	<130	<120	<120
2-Methylphenol (o-cresol)	6,500,000	29,000	<120UJ	<120UJ	<130UJ	<120	<120
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<120	<120	<130	<120	<120
4-Nitrophenol	NA	NA	<120	<120	<130	<120	<120
Acenaphthene	300,000	300,000	<120	<120	<130	<120	<120
Anthracene	13,000	13,000	<120	<120	<130	<120	<120
Benzo(a)anthracene	26,000	35,000	**10J**	<120	<130	<120	<120
Benzo(a)pyrene	2,600	16,000	<120	<120	<130	<120	<120
Benzo(b)fluoranthene	19,000	19,000	<120	<120	<130	<120	<120
Benzo(k)fluoranthene	10,000	10,000	<120	<120	<130	<120	<120
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<120	<120	<130	<120	<120
Chrysene	6,400	6,400	<120	<120	<130	<120	<120
Dibenzo(a,h)anthracene	2,600	11,000	<120	<120	<130	<120	<120
Diethyl phthalate	3,200,000	3,200,000	<120	<120	<130	<120	<120
Dimethyl phthalate	6,812,563,000	11,456,000	<120	<120	<130	<120	<120
Di-n-butylphthalate	3,798,000	3,798,000	<120	<120	<130	<120	<120
Fluoranthene	220,000	220,000	<120	<120	<130	<120	<120
Fluorene	270,000	270,000	<120	<120	<130	<120	<120
Indeno(1,2,3-cd)pyrene	5,100	5,100	<120	<120	<130	<120	<120

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-13 (2.75-4.75)**	**PSB-15 (12.5-14.5)**	**PSB-16 (11.5-13.5)**	**PSB-17 (11-13)**	**PSB-18 (9-11)**
	Laboratory Sample Identification		**A8D89102**	**A8D89105**	**A8D89107**	**A8D98902**	**A8D98904**
	Date Collected		**11/3/2008**	**11/3/2008**	**11/3/2008**	**11/4/2008**	**11/4/2008**
Analyte/Methods (Units)							
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	<120UJ	<120UJ	<130UJ	<120	<120
Phenanthrene	NA	NA	<120	<120	<130	<120	<120
Phenol	32,000,000	560,000	<120	<120	<130	<120	<120
Pyrene	140,000	140,000	<120	<120	<130	<120	<120
Pyridine	150,000	50	*<120*	*<120*	*<130*	*<120*	*<120*
Quinoline	NA	NA	<120	<120	<130	<120	<120

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 44)

		Location Identification and Sample Interval (Feet below ground surface)	PSB-19 (11.75-13.75)	PSB-20 (7.5-9.5)	PSB-21 (2-4)	PSB-22 (2.25-4.25)	PSB-23 (2.5-4.5)
		Laboratory Sample Identification	A8D98906	A8E20502	A8E20504	A8E20506	A8E25502
		Date Collected	11/4/2008	11/6/2008	11/6/2008	11/6/2008	11/7/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<200	<200	<200	<1000	<200
1,3-Dichlorobenzene	NA	NA	<200	<200	<200	<1000	<200
1,4-Dichlorobenzene	92,000	9,500	<200	<200	<200	<1000	<200
2,4-Dimethylphenol	14,000,000	81,000	**85J**	<120	<120	<630	<120
2,4-Dinitrophenol	1,200,000	2,100	<120	<120	<120	<630	<120
2-Methylphenol (o-cresol)	6,500,000	29,000	<120	<120	<120	<630	<120
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<120	<120	<120	<630	<120
4-Nitrophenol	NA	NA	<120	<120	<120	<630	<120
Acenaphthene	300,000	300,000	**210**	<120	**13J**	<630	**40J**
Anthracene	13,000	13,000	**220**	<120	**12J**	**130J**	**67J**
Benzo(a)anthracene	26,000	35,000	**25J**	**17J**	**21J**	**400J**	**47J**
Benzo(a)pyrene	2,600	16,000	<120	**8J**	**13J**	**170J**	**21J**
Benzo(b)fluoranthene	19,000	19,000	<120	<120	<120	**160J**	**18J**
Benzo(k)fluoranthene	10,000	10,000	<120	<120	<120	<630	<120
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<120	<120	<120	<630	<120
Chrysene	6,400	6,400	**55J**	**26J**	**46J**	**780**	**82J**
Dibenzo(a,h)anthracene	2,600	11,000	<120	<120	<120	<630	<120
Diethyl phthalate	3,200,000	3,200,000	<120	<120	<120	<630	<120
Dimethyl phthalate	6,812,563,000	11,456,000	<120	<120	<120	<630	<120
Di-n-butylphthalate	3,798,000	3,798,000	<120	<120	<120	<630	<120
Fluoranthene	220,000	220,000	**55J**	<120	**14J**	**170J**	**29J**
Fluorene	270,000	270,000	**320**	<120	**17J**	**140J**	**73J**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<120	<120	<120	<630	<120

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-19 (11.75-13.75)**	**PSB-20 (7.5-9.5)**	**PSB-21 (2-4)**	**PSB-22 (2.25-4.25)**	**PSB-23 (2.5-4.5)**
	Laboratory Sample Identification		**A8D98906**	**A8E20502**	**A8E20504**	**A8E20506**	**A8E25502**
	Date Collected		**11/4/2008**	**11/6/2008**	**11/6/2008**	**11/6/2008**	**11/7/2008**
Analyte/Methods (Units)							
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	**480**	<120	**32J**	**190J**	**130**
Phenanthrene	NA	NA	**1800**	**18J**	**93J**	**880**	**380**
Phenol	32,000,000	560,000	<120	<120	<120	<630	<120
Pyrene	140,000	140,000	**220**	**23J**	**39J**	**780**	**150**
Pyridine	150,000	50	**140J**	*<120*	*<120*	*<630*	**130J**
Quinoline	NA	NA	<120	<120	<120	<630	<120

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	PSB-24 (3.75-5.75)	PSB-26 (3.25-5.25)	PSB-27 (2-4)	PSB-27 (7.5-9.5)	PSB-28 (2-4)
Location Identification and Sample Interval (Feet below ground surface)			PSB-24 (3.75-5.75)	PSB-26 (3.25-5.25)	PSB-27 (2-4)	PSB-27 (7.5-9.5)	PSB-28 (2-4)
Laboratory Sample Identification			A8E25504	A8E25507	A8E31802	A8E31803	A8E31805
Date Collected			11/7/2008	11/7/2008	11/10/2008	11/10/2008	11/10/2008
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<2400	<220	<210	<210	<210
1,3-Dichlorobenzene	NA	NA	<2400	<220	<210	<210	<210
1,4-Dichlorobenzene	92,000	9,500	<2400	<220	<210	<210	<210
2,4-Dimethylphenol	14,000,000	81,000	<1500	<130	<120	<130	<130
2,4-Dinitrophenol	1,200,000	2,100	<1500	<130	<120	<130	<130
2-Methylphenol (o-cresol)	6,500,000	29,000	<1500	<130	<120	<130	<130
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<1500	<130	<120	<130	<130
4-Nitrophenol	NA	NA	<1500	<130	<120	<130	<130
Acenaphthene	300,000	300,000	**650J**	<130	**41J**	<130	**59J**
Anthracene	13,000	13,000	**700J**	<130	**91J**	**16J**	**95J**
Benzo(a)anthracene	26,000	35,000	**2600**	<130	**35J**	**16J**	**36J**
Benzo(a)pyrene	2,600	16,000	**1400J**	<130	<120	<130	<130
Benzo(b)fluoranthene	19,000	19,000	**560J**	<130	<120	<130	<130
Benzo(k)fluoranthene	10,000	10,000	**200J**	<130	<120	<130	<130
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<1500	<130	<120	<130	<130
Chrysene	6,400	6,400	**4700**	<130	**57J**	**10J**	**77J**
Dibenzo(a,h)anthracene	2,600	11,000	<1500	<130	<120	<130	<130
Diethyl phthalate	3,200,000	3,200,000	<1500	<130	<120	<130	<130
Dimethyl phthalate	6,812,563,000	11,456,000	<1500	<130	<120	<130	<130
Di-n-butylphthalate	3,798,000	3,798,000	<1500	<130	<120	<130	<130
Fluoranthene	220,000	220,000	**860J**	<130	**42J**	<130	**46J**
Fluorene	270,000	270,000	**1300J**	<130	**75J**	**18J**	**110J**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<1500	<130	<120	<130	<130

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-24 (3.75-5.75)**	**PSB-26 (3.25-5.25)**	**PSB-27 (2-4)**	**PSB-27 (7.5-9.5)**	**PSB-28 (2-4)**
	Laboratory Sample Identification		**A8E25504**	**A8E25507**	**A8E31802**	**A8E31803**	**A8E31805**
	Date Collected		**11/7/2008**	**11/7/2008**	**11/10/2008**	**11/10/2008**	**11/10/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	<1500	<130	**230**	**35J**	**370**
Phenanthrene	NA	NA	**6300**	**9J**	**440**	**85J**	**520**
Phenol	32,000,000	560,000	<1500	<130	<120	<130	<130
Pyrene	140,000	140,000	**4600**	<130	**220**	**51J**	**230**
Pyridine	150,000	50	*<1500*	*<130*	*<120*	*<130*	*<130*
Quinoline	NA	NA	<1500	<130	<120	<130	<130

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		PSB-28 (10-12)	PSB-29 (2-3.5)	PSB-30 (2-4)	PSB-30 (5-7)	PSB-30 (7-8.5)
			A8E31806	RSE0967-04	RSE1027-01	RSE1027-02	RSE1027-03/RE
			11/10/2008	5/27/2009	5/28/2009	5/28/2009	5/28/2009
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<210	<410	<410	<400	<2000D
1,3-Dichlorobenzene	NA	NA	<210	<410	<410	<400	<2000D
1,4-Dichlorobenzene	92,000	9,500	<210	<410	<410	<400	<2000D
2,4-Dimethylphenol	14,000,000	81,000	<130	<210	<210	<210	<1000D
2,4-Dinitrophenol	1,200,000	2,100	<130	<250	<250	<240	<1200D
2-Methylphenol (o-cresol)	6,500,000	29,000	<130	<210	<210	<210	<1000D
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<130	<250	<250	<240	<1200D
4-Nitrophenol	NA	NA	<130	<250	<250	<240	<1200D
Acenaphthene	300,000	300,000	**12J**	<210	<210	<210	**49JD**
Anthracene	13,000	13,000	**10J**	<210	<210	<210	**75JD**
Benzo(a)anthracene	26,000	35,000	<130	**9.1J**	<210	<210	**490JD**
Benzo(a)pyrene	2,600	16,000	<130	<210	<210	<210	**41JD**
Benzo(b)fluoranthene	19,000	19,000	<130	<210	<210	<210	<1000D
Benzo(k)fluoranthene	10,000	10,000	<130	<210	<210	<210	<1000D
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<130	**440**	**1500**	**490**	**66000D**
Chrysene	6,400	6,400	**12J**	<210	<210	<210	**510JD**
Dibenzo(a,h)anthracene	2,600	11,000	<130	<210	<210	<210	<1000D
Diethyl phthalate	3,200,000	3,200,000	<130	<210	<210	<210	<1000D
Dimethyl phthalate	6,812,563,000	11,456,000	<130	<210	<210	<210	<1000D
Di-n-butylphthalate	3,798,000	3,798,000	<130	<210	<210	<210	<1000D
Fluoranthene	220,000	220,000	**9J**	<210	<210	<210	<1000D
Fluorene	270,000	270,000	**17J**	<210	<210	<210	<1000D
Indeno(1,2,3-cd)pyrene	5,100	5,100	<130	<210	<210	<210	<1000D

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		PSB-28 (10-12)	PSB-29 (2-3.5)	PSB-30 (2-4)	PSB-30 (5-7)	PSB-30 (7-8.5)
			A8E31806	RSE0967-04	RSE1027-01	RSE1027-02	RSE1027-03/RE
			11/10/2008	5/27/2009	5/28/2009	5/28/2009	5/28/2009
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	**30J**	<210	<210	<210	**320JD**
Phenanthrene	NA	NA	**73J**	<210	<210	<210	**420JD**
Phenol	32,000,000	560,000	<130	<210	<210	<210	<1000D
Pyrene	140,000	140,000	**38J**	<210	<210	<210	**230JD**
Pyridine	150,000	50	*<130*	*<250*	*<250*	*<240*	*<1200D*
Quinoline	NA	NA	<130	<250	<250	<240	<1200D

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	PSB-31 (2-4)	PSB-32 (2-4)	PSB-33 (2-4)	PSB-34 (2-4)	PSB-35 (2-4)
Location Identification and Sample Interval (Feet below ground surface)			PSB-31 (2-4)	PSB-32 (2-4)	PSB-33 (2-4)	PSB-34 (2-4)	PSB-35 (2-4)
Laboratory Sample Identification			RSE1027-04	RSE1027-05	RSE1059-01	RSE1059-02	RSE0911-01
Date Collected			5/28/2009	5/28/2009	5/29/2009	5/29/2009	5/26/2009
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<400	<410	<4900D	<430	<410
1,3-Dichlorobenzene	NA	NA	<400	<410	<4900D	<430	<410
1,4-Dichlorobenzene	92,000	9,500	<400	<410	<4900D	<430	<410
2,4-Dimethylphenol	14,000,000	81,000	**120J**	**68J**	<2500D	<220	<210
2,4-Dinitrophenol	1,200,000	2,100	<240	<250	*<3000D*	<260	<250
2-Methylphenol (o-cresol)	6,500,000	29,000	**48J**	<210	<2500D	<220	<210
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<240	<250	<3000D	<260	<250
4-Nitrophenol	NA	NA	<240	<250	<3000D	<260	<250
Acenaphthene	300,000	300,000	**64J**	**59J**	**150JD**	<220	<210
Anthracene	13,000	13,000	**30J**	**360**	**140JD**	<220	<210
Benzo(a)anthracene	26,000	35,000	**14J**	**17J**	**630JD**	<220	<210
Benzo(a)pyrene	2,600	16,000	<210	**9.1J**	**400JD**	<220	<210
Benzo(b)fluoranthene	19,000	19,000	<210	<210	**280JD**	<220	<210
Benzo(k)fluoranthene	10,000	10,000	<210	<210	<2500D	<220	<210
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<210	**410**	**3500D**	**150J**	**75J**
Chrysene	6,400	6,400	**24J**	**30J**	**1300JD**	<220	<210
Dibenzo(a,h)anthracene	2,600	11,000	<210	<210	**140JD**	<220	<210
Diethyl phthalate	3,200,000	3,200,000	<210	**11J**	<2500D	<220	<210
Dimethyl phthalate	6,812,563,000	11,456,000	<210	<210	<2500D	<220	<210
Di-n-butylphthalate	3,798,000	3,798,000	<210	<210	<2500D	<220	<210
Fluoranthene	220,000	220,000	**20J**	**25J**	**200JD**	<220	<210
Fluorene	270,000	270,000	<210	**65J**	**250JD**	**22J**	<210
Indeno(1,2,3-cd)pyrene	5,100	5,100	<210	<210	<2500D	<220	<210

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	PSB-31 (2-4)	PSB-32 (2-4)	PSB-33 (2-4)	PSB-34 (2-4)	PSB-35 (2-4)
Location Identification and Sample Interval (Feet below ground surface)			PSB-31 (2-4)	PSB-32 (2-4)	PSB-33 (2-4)	PSB-34 (2-4)	PSB-35 (2-4)
Laboratory Sample Identification			RSE1027-04	RSE1027-05	RSE1059-01	RSE1059-02	RSE0911-01
Date Collected			5/28/2009	5/28/2009	5/29/2009	5/29/2009	5/26/2009
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	**1300**	**390**	<2500D	**350**	<210
Phenanthrene	NA	NA	**280**	**360**	**540JD**	**100J**	**16J**
Phenol	32,000,000	560,000	<210	<210	<2500D	**73J**	<210
Pyrene	140,000	140,000	**64J**	**110J**	**1100JD**	**26J**	<210
Pyridine	150,000	50	*<240*	*<250*	*<3000D*	*<260*	*<250*
Quinoline	NA	NA	<240	<250	<3000D	<260	<250

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		PSB-36 (2-4)	PSB-36 (5-7)	PSB-36 (8-10)	SB-11 (6-8)	SB-18 (0-2)
	Laboratory Sample Identification		RSE0967-01	RSE0967-02	RSE0967-03	A7D78402	A7D85309
	Date Collected		5/27/2009	5/27/2009	5/27/2009	11/28/2007	11/29/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<2100D	<4100D	<2100D	<200	<190
1,3-Dichlorobenzene	NA	NA	<2100D	<4100D	<2100D	<200	<190
1,4-Dichlorobenzene	92,000	9,500	<2100D	<4100D	<2100D	<200	<190
2,4-Dimethylphenol	14,000,000	81,000	<1100D	<2100D	<1100D	<120	<120
2,4-Dinitrophenol	1,200,000	2,100	<1300	*<2500D*	<1300	<120	<120
2-Methylphenol (o-cresol)	6,500,000	29,000	<1100D	<2100D	<1100D	**120**	<120
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<1300	<2500D	<1300	**28J**	<120
4-Nitrophenol	NA	NA	<1300	<2500D	<1300	<120	<120
Acenaphthene	300,000	300,000	<1100D	<2100D	<1100D	<120	**240**
Anthracene	13,000	13,000	**190JD**	<2100D	<1100D	<120	**240**
Benzo(a)anthracene	26,000	35,000	**54JD**	<2100D	**68JD**	**9J**	**91J**
Benzo(a)pyrene	2,600	16,000	<1100D	*<2100D*	<1100D	<120	<120
Benzo(b)fluoranthene	19,000	19,000	<1100D	<2100D	<1100D	<120	<120
Benzo(k)fluoranthene	10,000	10,000	<1100D	<2100D	<1100D	<120	<120
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	**450JD**	<2100D	**420JD**	<120	<120
Chrysene	6,400	6,400	**71JD**	**110JD**	**62JD**	<120	**170**
Dibenzo(a,h)anthracene	2,600	11,000	<1100D	*<2100D*	<1100D	<120	<120
Diethyl phthalate	3,200,000	3,200,000	<1100D	<2100D	<1100D	<120	<120
Dimethyl phthalate	6,812,563,000	11,456,000	<1100D	<2100D	<1100D	<120	<120
Di-n-butylphthalate	3,798,000	3,798,000	<1100D	<2100D	<1100D	<120	<120
Fluoranthene	220,000	220,000	**44JD**	<2100D	<1100D	<120	**160**
Fluorene	270,000	270,000	<1100D	<2100D	<1100D	<120	**310**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<1100D	<2100D	<1100D	<120	<120

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		PSB-36 (2-4)	PSB-36 (5-7)	PSB-36 (8-10)	SB-11 (6-8)	SB-18 (0-2)
			RSE0967-01	RSE0967-02	RSE0967-03	A7D78402	A7D85309
			5/27/2009	5/27/2009	5/27/2009	11/28/2007	11/29/2007
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	<1100D	<2100D	<1100D	**310**	**360**
Phenanthrene	NA	NA	**190JD**	**160JD**	**120JD**	**10J**	**1100**
Phenol	32,000,000	560,000	<1100D	<2100D	<1100D	<120	<120
Pyrene	140,000	140,000	**160JD**	**160JD**	**98JD**	<120	**300**
Pyridine	150,000	50	*<1300D*	*<2500D*	*<1300D*	*<120*	*<120*
Quinoline	NA	NA	<1300D	<2500D	<1300D	<120	<120

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		SB-18 (2-4)	SB-20 (0-2)	SB-21 (0-2)	SB-21 (2-4)	SB-22 (2-4)
			A7D85310/RI	A7D78404	A7D78407	A7D78408	A7D85313/DL
			11/29/2007	11/28/2007	11/28/2007	11/28/2007	11/29/2007
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<210	<180	<210	<210	<210
1,3-Dichlorobenzene	NA	NA	<210	<180	<210	<210	<210
1,4-Dichlorobenzene	92,000	9,500	<210	<180	<210	<210	<210
2,4-Dimethylphenol	14,000,000	81,000	<130	<110	<130	<120	<130
2,4-Dinitrophenol	1,200,000	2,100	<130	<110	<130	<120	<130
2-Methylphenol (o-cresol)	6,500,000	29,000	<130	<110	<130	<120	<130
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<130	<110	<130	<120	<130
4-Nitrophenol	NA	NA	<130	<110	<130	<120	<130
Acenaphthene	300,000	300,000	**570J**	**28J**	**17J**	**10J**	**840D**
Anthracene	13,000	13,000	**380J**	**59J**	**19J**	<120	**800D**
Benzo(a)anthracene	26,000	35,000	**400J**	**50J**	**21J**	**25J**	**830D**
Benzo(a)pyrene	2,600	16,000	<130	**21J**	**15J**	**9J**	**340DJ**
Benzo(b)fluoranthene	19,000	19,000	<130	**40J**	**9J**	**9J**	**300DJ**
Benzo(k)fluoranthene	10,000	10,000	<130	<110	<130	<120	**110J**
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<130	<110	<130	<120	<130
Chrysene	6,400	6,400	**540J**	**34J**	**15J**	**12J**	**1500D**
Dibenzo(a,h)anthracene	2,600	11,000	<130	<110	<130	<120	**71DJ**
Diethyl phthalate	3,200,000	3,200,000	<130	<110	<130	<120	<130
Dimethyl phthalate	6,812,563,000	11,456,000	<130	<110	<130	<120	<130
Di-n-butylphthalate	3,798,000	3,798,000	<130	<110	<130	<120	<130
Fluoranthene	220,000	220,000	**360J**	**180**	**15J**	**14J**	**550DJ**
Fluorene	270,000	270,000	**610J**	**40J**	**17J**	**11J**	**1200D**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<130	**10J**	<130	<120	**57DJ**

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	SB-18 (2-4)	SB-20 (0-2)	SB-21 (0-2)	SB-21 (2-4)	SB-22 (2-4)
Location Identification and Sample Interval (Feet below ground surface)			SB-18 (2-4)	SB-20 (0-2)	SB-21 (0-2)	SB-21 (2-4)	SB-22 (2-4)
Laboratory Sample Identification			A7D85310/RI	A7D78404	A7D78407	A7D78408	A7D85313/DL
Date Collected			11/29/2007	11/28/2007	11/28/2007	11/28/2007	11/29/2007
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	**2000J**	**37J**	**160**	**280**	**11000D**
Phenanthrene	NA	NA	**2700J**	**230**	**75J**	**66J**	**5100D**
Phenol	32,000,000	560,000	<130	<110	<130	<120	**240DJ**
Pyrene	140,000	140,000	**660J**	**140**	**21J**	**26J**	**2400D**
Pyridine	150,000	50	*<130*	*<110*	*<130*	*<120*	*<130*
Quinoline	NA	NA	<130	<110	<130	<120	<130

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**SB-23 (0-2)**	**SB-23 (8-10)**	**SB-25 (4-6)**	**SB-26 (0-2)**	**SB-26 (5-8)**
		Laboratory Sample Identification	**A7D85303**	**A7D85304**	**A7D85316/RI**	**A7D78409**	**A7D78410**
		Date Collected	**11/29/2007**	**11/29/2007**	**11/29/2007**	**11/28/2007**	**11/28/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<4000	<200	<220	<2100	<210
1,3-Dichlorobenzene	NA	NA	<4000	<200	<220	<2100	<210
1,4-Dichlorobenzene	92,000	9,500	<4000	<200	<220	<2100	<210
2,4-Dimethylphenol	14,000,000	81,000	<2400	<120	**340J**	<1300	<130
2,4-Dinitrophenol	1,200,000	2,100	<2400	<120	<130	<1300	<130
2-Methylphenol (o-cresol)	6,500,000	29,000	<2400	<120	<130	<1300	<130
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<2400	<120	<130	<1300	<130
4-Nitrophenol	NA	NA	<2400	<120	<130	<1300	<130
Acenaphthene	300,000	300,000	**6700**	**35J**	**390J**	**1600**	**82J**
Anthracene	13,000	13,000	**18000**	**110J**	**220J**	**4600**	**110J**
Benzo(a)anthracene	26,000	35,000	**1900J**	**47J**	**400J**	**2800**	**37J**
Benzo(a)pyrene	2,600	16,000	**530J**	<120	<130	**2000**	<130
Benzo(b)fluoranthene	19,000	19,000	<2400	<120	**71J**	**1600**	<130
Benzo(k)fluoranthene	10,000	10,000	<2400	<120	<130	**790J**	<130
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<2400	<120	<130	<1300	<130
Chrysene	6,400	6,400	**3500**	**30J**	**390J**	**7100**	**65J**
Dibenzo(a,h)anthracene	2,600	11,000	*<2400*	<120	<130	*<1300*	<130
Diethyl phthalate	3,200,000	3,200,000	<2400	<120	<130	<1300	<130
Dimethyl phthalate	6,812,563,000	11,456,000	<2400	<120	<130	<1300	<130
Di-n-butylphthalate	3,798,000	3,798,000	<2400	<120	<130	<1300	<130
Fluoranthene	220,000	220,000	**3200**	<120	**220J**	**2400**	**40J**
Fluorene	270,000	270,000	**15000**	**49J**	**370J**	**2600**	**130**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<2400	<120	<130	<1300	<130

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-23 (0-2)**	**SB-23 (8-10)**	**SB-25 (4-6)**	**SB-26 (0-2)**	**SB-26 (5-8)**
	Laboratory Sample Identification		**A7D85303**	**A7D85304**	**A7D85316/RI**	**A7D78409**	**A7D78410**
	Date Collected		**11/29/2007**	**11/29/2007**	**11/29/2007**	**11/28/2007**	**11/28/2007**
Analyte/Methods (Units)							
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	**8900**	<120	**4000**	**3300**	**430**
Phenanthrene	NA	NA	**100000**	**55J**	**2000J**	**18000**	**800**
Phenol	32,000,000	560,000	<2400	<120	<130	<1300	<130
Pyrene	140,000	140,000	**16000**	**81J**	**560J**	**15000**	**140**
Pyridine	150,000	50	*<2400*	*<120*	*<130*	*<1300*	*<130*
Quinoline	NA	NA	<2400	<120	<130	<1300	<130

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards Soil to GW Pathway[(A)] Non-Residental Scenario	SB-30 (1-3)	SB-30 (5-7)	SB-32 (0-2)	SB-32 (4-6)	SB-33 (0-2)
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A7D78413	A7D78414	A7D87504/RE	A7D87505/RE	A7D87509/RE
Date Collected			11/28/2007	11/28/2007	11/30/2007	11/30/2007	11/30/2007
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<890	<200	<210	<230	**10J**
1,3-Dichlorobenzene	NA	NA	<890	<200	<210	<230	<210
1,4-Dichlorobenzene	92,000	9,500	<890	<200	<210	<230	<210
2,4-Dimethylphenol	14,000,000	81,000	<540UJ	<120	<130	<140	<130
2,4-Dinitrophenol	1,200,000	2,100	<540UJ	<120	<130	<140	<130
2-Methylphenol (o-cresol)	6,500,000	29,000	<540UJ	<120	<130	<140	<130
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<540UJ	<120	<130	<140	<130
4-Nitrophenol	NA	NA	<540	<120	<130	<140	<130
Acenaphthene	300,000	300,000	**88J**	<120	<130	**100J**	<130
Anthracene	13,000	13,000	**130J**	**14J**	**12J**	<140	<130
Benzo(a)anthracene	26,000	35,000	**81J**	**31J**	**16J**	**180J**	**12J**
Benzo(a)pyrene	2,600	16,000	<540	**21J**	<130	**68J**	<130
Benzo(b)fluoranthene	19,000	19,000	<540	**18J**	<130	**47J**	<130
Benzo(k)fluoranthene	10,000	10,000	<540	<120	<130	<140	<130
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<540	<120	<130	<140	<130
Chrysene	6,400	6,400	**58J**	**54J**	**9J**	**190**	<130
Dibenzo(a,h)anthracene	2,600	11,000	<540	<120	<130	<140	<130
Diethyl phthalate	3,200,000	3,200,000	<540	<120	<130	<140	<130
Dimethyl phthalate	6,812,563,000	11,456,000	<540	<120	<620UJ	<140R	<630UJ
Di-n-butylphthalate	3,798,000	3,798,000	<540	<120	<130	<140	<130
Fluoranthene	220,000	220,000	**65J**	**12J**	<130	**56J**	<130
Fluorene	270,000	270,000	**170J**	**9J**	<130	**71J**	<130
Indeno(1,2,3-cd)pyrene	5,100	5,100	<540	<120	<130	<140	<130

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**SB-30 (1-3)**	**SB-30 (5-7)**	**SB-32 (0-2)**	**SB-32 (4-6)**	**SB-33 (0-2)**
		Laboratory Sample Identification	**A7D78413**	**A7D78414**	**A7D87504/RE**	**A7D87505/RE**	**A7D87509/RE**
		Date Collected	**11/28/2007**	**11/28/2007**	**11/30/2007**	**11/30/2007**	**11/30/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	<540	**11J**	**47J**	<140	<130
Phenanthrene	NA	NA	**1000**	**41J**	**36J**	<140	<130
Phenol	32,000,000	560,000	<540UJ	<120	<130	<140	<130
Pyrene	140,000	140,000	**270J**	**75J**	<130	**59J**	<130
Pyridine	150,000	50	*<540*	*<120*	*<130*	*<140*	*<130*
Quinoline	NA	NA	<540	<120	<130	<140	<130

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		SB-33 (2-4) A7D87510/RE 11/30/2007	SB-34 (0-2) A7D87512/RE 11/30/2007	SB-34 (4-6) A7D87511/RE 11/30/2007	SB-35 (0-2) A7D87506/RE 11/30/2007	SB-35-50 (DUP of SB-35 (0-2)) A7D87508/DL/RE 11/30/2007
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<210	<200	<230	<200	<200
1,3-Dichlorobenzene	NA	NA	<210	<200	<230	<200	<200
1,4-Dichlorobenzene	92,000	9,500	<210	<200	<230	<200	<200
2,4-Dimethylphenol	14,000,000	81,000	<130	<120	<140	<120	<120
2,4-Dinitrophenol	1,200,000	2,100	<130	<120	<140	<120	<120
2-Methylphenol (o-cresol)	6,500,000	29,000	<130	<120	<140	<120	<120
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<130	<120	<140	<120	<120
4-Nitrophenol	NA	NA	<130	<120	<140	<120	<120
Acenaphthene	300,000	300,000	<130	<120	<140	<120	<120
Anthracene	13,000	13,000	<130	<120	<140	<120	**10J**
Benzo(a)anthracene	26,000	35,000	**10J**	**12J**	**10J**	**1600J**	**2400**
Benzo(a)pyrene	2,600	16,000	<130	<120	<140	**370J**	**210**
Benzo(b)fluoranthene	19,000	19,000	<130	<120	<140	**920J**	**1200**
Benzo(k)fluoranthene	10,000	10,000	<130	<120	<140	**190J**	**350DJ**
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<130	<120	<140	**110J**	<120
Chrysene	6,400	6,400	<130	<120	<140	**6100J**	**8200DJ**
Dibenzo(a,h)anthracene	2,600	11,000	<130	<120	<140	**450J**	**670**
Diethyl phthalate	3,200,000	3,200,000	<130	<120	<140	<120	<120
Dimethyl phthalate	6,812,563,000	11,456,000	<640UJ	<610UJ	<710UJ	<630UJ	<600UJ
Di-n-butylphthalate	3,798,000	3,798,000	<130	<120	<140	<120	<120
Fluoranthene	220,000	220,000	<130	<120	<140	**270J**	**610**
Fluorene	270,000	270,000	<130	<120	<140	<120	<120
Indeno(1,2,3-cd)pyrene	5,100	5,100	<130	<120	<140	**210J**	**320**

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		SB-33 (2-4) A7D87510/RE 11/30/2007	SB-34 (0-2) A7D87512/RE 11/30/2007	SB-34 (4-6) A7D87511/RE 11/30/2007	SB-35 (0-2) A7D87506/RE 11/30/2007	SB-35-50 (DUP of SB-35 (0-2)) A7D87508/DL/RE 11/30/2007
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	<130	<120	<140	<120	<120
Phenanthrene	NA	NA	<130	<120	<140	**80J**	**220**
Phenol	32,000,000	560,000	<130	<120	<140	<120	<120
Pyrene	140,000	140,000	<130	**14J**	<140	**2200J**	**3600**
Pyridine	150,000	50	*<130*	*<120*	*<140*	*<120*	*<120*
Quinoline	NA	NA	<130	<120	<140	<120	<120

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		SB-35 (4-6)	STFPSB-02 (2-4)	STFPSB-02 (5-7)	RB-01
	Laboratory Sample Identification		A7D87507/RE	A8E40001	A8E40002	A7C51510RE
	Date Collected		11/30/2007	11/11/2008	11/11/2008	10/29/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	990,000	77,000	<210	<11000	<190	<190
1,3-Dichlorobenzene	NA	NA	<210	<11000	<190	<190
1,4-Dichlorobenzene	92,000	9,500	<210	*<11000*	<190	<190
2,4-Dimethylphenol	14,000,000	81,000	<130	<6600	<110	<120
2,4-Dinitrophenol	1,200,000	2,100	<130	*<6600*	<110	<120
2-Methylphenol (o-cresol)	6,500,000	29,000	<130	<6600	<110	<120
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<130	*<6600*	<110	<120
4-Nitrophenol	NA	NA	<130	<6600	<110	<120
Acenaphthene	300,000	300,000	<130	**1700J**	<110	<120
Anthracene	13,000	13,000	**11J**	<6600	<110	<120
Benzo(a)anthracene	26,000	35,000	**1200J**	<6600	<110	<120
Benzo(a)pyrene	2,600	16,000	**350J**	*<6600*	<110	<120
Benzo(b)fluoranthene	19,000	19,000	**460J**	<6600	<110	<120
Benzo(k)fluoranthene	10,000	10,000	**120J**	<6600	<110	<120
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<130	<6600	<110	<120
Chrysene	6,400	6,400	**2600J**	**490J**	<110	<120
Dibenzo(a,h)anthracene	2,600	11,000	**200J**	*<6600*	<110	<120
Diethyl phthalate	3,200,000	3,200,000	<130	<6600	<110	<120
Dimethyl phthalate	6,812,563,000	11,456,000	<640UJ	<6600	<110	<120
Di-n-butylphthalate	3,798,000	3,798,000	<130	<6600	<110	<120
Fluoranthene	220,000	220,000	**200J**	**500J**	<110	**9J**
Fluorene	270,000	270,000	<130	**940J**	<110	<120
Indeno(1,2,3-cd)pyrene	5,100	5,100	**110J**	*<6600*	<110	<120

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	SB-35 (4-6)	STFPSB-02 (2-4)	STFPSB-02 (5-7)	RB-01
Location Identification and Sample Interval (Feet below ground surface)						
Laboratory Sample Identification			A7D87507/RE	A8E40001	A8E40002	A7C51510RE
Date Collected			11/30/2007	11/11/2008	11/11/2008	10/29/2007
Semivolatile Organic Compounds (µg/kg)						
Naphthalene	325,000	3,520	<130	**290000J**	**52J**	<120
Phenanthrene	NA	NA	**200J**	**2200J**	**9J**	<120
Phenol	32,000,000	560,000	<130	<6600	<110	**21JB**
Pyrene	140,000	140,000	**1700J**	**1200J**	<110	<120
Pyridine	150,000	50	*<130*	*<6600*	*<110*	*<120*
Quinoline	NA	NA	<130	<6600	<110	<120

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[A] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[A] Non-Residental Scenario	RB-02	RB-03	RB-04	RB-05	TW-02 (0-2)
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A7C51509RE	A7C508RE	A7C51507RE	A7C51506RE	A7D32201
Date Collected			10/29/2007	10/29/2007	10/29/2007	10/29/2007	11/14/2007
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<210	<200	<210	<210	<2000
1,3-Dichlorobenzene	NA	NA	<210	<200	<210	<210	<2000
1,4-Dichlorobenzene	92,000	9,500	<210	<200	<210	<210	<2000
2,4-Dimethylphenol	14,000,000	81,000	<130	<120	<130	<130	<1200R
2,4-Dinitrophenol	1,200,000	2,100	<130	<120	<130	<130	<1200
2-Methylphenol (o-cresol)	6,500,000	29,000	<130	<120	<130	<130	<1200
3+4-Methylphenol (m&p-cresols)[B]	3,400,000	6,500	<130	<120	<130	<130	<1200
4-Nitrophenol	NA	NA	<130	<120	<130	<130	<1200
Acenaphthene	300,000	300,000	<130	<120	<130	<130	<1200
Anthracene	13,000	13,000	<130	<120	<130	<130	<1200
Benzo(a)anthracene	26,000	35,000	<130	<120	<130	<130	**130J**
Benzo(a)pyrene	2,600	16,000	<130	<120	<130	<130	<1200
Benzo(b)fluoranthene	19,000	19,000	<130	<120	<130	<130	<1200
Benzo(k)fluoranthene	10,000	10,000	<130	<120	<130	<130	<1200
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<130	<120	<130	<130	<1200
Chrysene	6,400	6,400	<130	<120	<130	<130	<1200
Dibenzo(a,h)anthracene	2,600	11,000	<130	<120	<130	<130	<1200
Diethyl phthalate	3,200,000	3,200,000	<130	<120	<130	<130	<1200
Dimethyl phthalate	6,812,563,000	11,456,000	<130	<120	<130	<130	<1200
Di-n-butylphthalate	3,798,000	3,798,000	<130	<120	<130	<130	<1200
Fluoranthene	220,000	220,000	<130	<120	<130	<130	<1200
Fluorene	270,000	270,000	<130	<120	<130	<130	<1200
Indeno(1,2,3-cd)pyrene	5,100	5,100	<130	<120	<130	<130	<1200

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		RB-02	RB-03	RB-04	RB-05	TW-02 (0-2)
	Laboratory Sample Identification		A7C51509RE	A7C508RE	A7C51507RE	A7C51506RE	A7D32201
	Date Collected		10/29/2007	10/29/2007	10/29/2007	10/29/2007	11/14/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	<130R	<120R	<130R	**11JB**	<1200
Phenanthrene	NA	NA	<130	<120	<130	<130	<1200
Phenol	32,000,000	560,000	<130	<120	<130	<130	<1200
Pyrene	140,000	140,000	<130	<120	<130	<130	<1200
Pyridine	150,000	50	*<130*	*<120*	*<130*	*<130*	*<1200*
Quinoline	NA	NA	<130	<120	<130	<130	<1200

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-03 (0-2)	DUP-2 (DUP of TW-03 (0-2))	TW-03 (15-17)	TW-04 (2-4)	TW-07 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			TW-03 (0-2)	DUP-2 (DUP of TW-03 (0-2))	TW-03 (15-17)	TW-04 (2-4)	TW-07 (0-2)
Laboratory Sample Identification			A7D57501	A7D57502	A7D57503	A7D23708/RE	A7D50902
Date Collected			11/20/2007	11/20/2007	11/20/2007	11/13/2007	11/19/2007
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<210	<210	<250	<200UJ	<210
1,3-Dichlorobenzene	NA	NA	<210	<210	<250	<200UJ	<210
1,4-Dichlorobenzene	92,000	9,500	<210	<210	<250	<200UJ	<210
2,4-Dimethylphenol	14,000,000	81,000	<130	<130	<150	<120UJ	<120
2,4-Dinitrophenol	1,200,000	2,100	<130	<130	<150	<120UJ	<120
2-Methylphenol (o-cresol)	6,500,000	29,000	<130	<130	<150	<120UJ	<120
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<130	<130	<150	<120UJ	<120
4-Nitrophenol	NA	NA	<130	<130	<150	<120UJ	<120
Acenaphthene	300,000	300,000	<130	<130	<150	**10J**	<120
Anthracene	13,000	13,000	<130	<130	<150	**16J**	<120
Benzo(a)anthracene	26,000	35,000	<130	<130	<150	<120UJ	<120
Benzo(a)pyrene	2,600	16,000	<130	<130	<150	<120UJ	<120
Benzo(b)fluoranthene	19,000	19,000	<130	<130	<150	<120UJ	<120
Benzo(k)fluoranthene	10,000	10,000	<130	<130	<150	<120UJ	<120
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<130	<130	<150	<120UJ	<120
Chrysene	6,400	6,400	<130	<130	<150	<120UJ	<120
Dibenzo(a,h)anthracene	2,600	11,000	<130	<130	<150	<120UJ	<120
Diethyl phthalate	3,200,000	3,200,000	<130	<130	<150	<120UJ	<120
Dimethyl phthalate	6,812,563,000	11,456,000	<130	<130	<150	<120UJ	<120
Di-n-butylphthalate	3,798,000	3,798,000	<130	<130	<150	<120UJ	<120
Fluoranthene	220,000	220,000	<130	<130	<150	<120UJ	<120
Fluorene	270,000	270,000	<130	<130	<150	**13J**	**17J**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<130	<130	<150	<120UJ	<120

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-03 (0-2)	DUP-2 (DUP of TW-03 (0-2))	TW-03 (15-17)	TW-04 (2-4)	TW-07 (0-2)
Laboratory Sample Identification			A7D57501	A7D57502	A7D57503	A7D23708/RE	A7D50902
Date Collected			11/20/2007	11/20/2007	11/20/2007	11/13/2007	11/19/2007
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	<130	<130	<150	**94J**	<120
Phenanthrene	NA	NA	<130	<130	<150	**67J**	<120
Phenol	32,000,000	560,000	<130	<130	<150	<120UJ	<120
Pyrene	140,000	140,000	<130	<130	<150	**11J**	<120
Pyridine	150,000	50	*<130*	*<130*	*<150*	*<120UJ*	*<120*
Quinoline	NA	NA	<130	<130	<150	<120UJ	<120

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards Soil to GW Pathway[(A)] Non-Residental Scenario	TW-07 (5-7)	TW-08 (0-2)	TW-08 (5-7)	TW-09 (0-2)	TW-10 (7-8)
Location Identification and Sample Interval (Feet below ground surface)			TW-07 (5-7)	TW-08 (0-2)	TW-08 (5-7)	TW-09 (0-2)	TW-10 (7-8)
Laboratory Sample Identification			A7D50903	A7D43401	A7D50901	A7D23709RE	A7D40709/RI
Date Collected			11/19/2007	11/16/2007	11/19/2007	11/13/2007	11/15/2007
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<230	<200	<190	<200UJ	<220
1,3-Dichlorobenzene	NA	NA	<230	<200	<190	<200UJ	<220
1,4-Dichlorobenzene	92,000	9,500	<230	<200	<190	<200UJ	<220
2,4-Dimethylphenol	14,000,000	81,000	<140	<120R	<120	<120UJ	<130R
2,4-Dinitrophenol	1,200,000	2,100	<140	<120	<120	<120UJ	<130
2-Methylphenol (o-cresol)	6,500,000	29,000	<140	<120	<120	<120UJ	<130
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<140	<120	**26J**	<120UJ	<130
4-Nitrophenol	NA	NA	<140	<120	<120	<120UJ	<130
Acenaphthene	300,000	300,000	<140	<120	<120	**9J**	<130
Anthracene	13,000	13,000	<140	<120	<120	<120UJ	<130
Benzo(a)anthracene	26,000	35,000	<140	**10J**	<120	**19J**	**420J**
Benzo(a)pyrene	2,600	16,000	<140	<120	<120	<120UJ	<130
Benzo(b)fluoranthene	19,000	19,000	<140	<120	<120	<120UJ	<130
Benzo(k)fluoranthene	10,000	10,000	<140	<120	<120	<120UJ	<130
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<140	<120	**170**	<120UJ	<130
Chrysene	6,400	6,400	<140	<120	<120	<120UJ	**400J**
Dibenzo(a,h)anthracene	2,600	11,000	<140	<120	<120	<120UJ	<130
Diethyl phthalate	3,200,000	3,200,000	<140	<120	<120	<120UJ	<130
Dimethyl phthalate	6,812,563,000	11,456,000	<140	<120	<120	<120UJ	<130
Di-n-butylphthalate	3,798,000	3,798,000	<140	<120	<120	<120UJ	<130
Fluoranthene	220,000	220,000	<140	<120	<120	<120UJ	<130
Fluorene	270,000	270,000	<140	<120	<120	<120UJ	**160DJ**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<140	<120	<120	<120UJ	<130

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-07 (5-7)	TW-08 (0-2)	TW-08 (5-7)	TW-09 (0-2)	TW-10 (7-8)
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A7D50903	A7D43401	A7D50901	A7D23709RE	A7D40709/RI
Date Collected			11/19/2007	11/16/2007	11/19/2007	11/13/2007	11/15/2007
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	<140	<120	**31J**	**420J**	**1300J**
Phenanthrene	NA	NA	<140	<120	<120	**19J**	**1400J**
Phenol	32,000,000	560,000	<140	<120	<120	<120UJ	<130
Pyrene	140,000	140,000	<140	<120	<120	<120UJ	<130
Pyridine	150,000	50	*<140*	*<120*	*<120*	*<120UJ*	*<130*
Quinoline	NA	NA	<140	<120	<120	<120UJ	<130

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	TW-12 (10-11.5)	TW-14 (0-2)	TW-15 (0-2)	TW-15 (5-7.5)	TW-19 (0-2)
		Laboratory Sample Identification	A7D40711	A7D32203	A7D57504	A7D57505	A7D32204
		Date Collected	11/15/2007	11/14/2007	11/20/2007	11/20/2007	11/14/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<210	<2000UJ	<200	<200	<2100
1,3-Dichlorobenzene	NA	NA	<210	<2000UJ	<200	<200	<2100
1,4-Dichlorobenzene	92,000	9,500	<210	<2000UJ	<200	<200	<2100
2,4-Dimethylphenol	14,000,000	81,000	<130R	<1200R	<120	<120	<1200R
2,4-Dinitrophenol	1,200,000	2,100	<130	<1200UJ	<120	<120	<1200
2-Methylphenol (o-cresol)	6,500,000	29,000	<130	<1200UJ	<120	<120	<1200
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<130	<1200UJ	<120	<120	<1200
4-Nitrophenol	NA	NA	<130	<1200UJ	<120	<120	<1200
Acenaphthene	300,000	300,000	**12J**	<1200UJ	<120	**110J**	**160J**
Anthracene	13,000	13,000	**13J**	**290J**	<120	**200**	**700J**
Benzo(a)anthracene	26,000	35,000	**10J**	**1800J**	<120	**130**	**2800**
Benzo(a)pyrene	2,600	16,000	<130	**1600J**	<120	<120	**2300**
Benzo(b)fluoranthene	19,000	19,000	<130	**2300J**	<120	<120	**4200**
Benzo(k)fluoranthene	10,000	10,000	<130	**820J**	<120	<120	<1200
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	**74J**	<1200UJ	**110J**	<120	<1200
Chrysene	6,400	6,400	<130	**2000J**	<120	**70J**	**2700**
Dibenzo(a,h)anthracene	2,600	11,000	<130	**360J**	<120	<120	**490J**
Diethyl phthalate	3,200,000	3,200,000	<130	<1200UJ	<120	<120	<1200
Dimethyl phthalate	6,812,563,000	11,456,000	<130	<1200UJ	<120	<120	<1200
Di-n-butylphthalate	3,798,000	3,798,000	<130	<1200UJ	<120	<120	<1200
Fluoranthene	220,000	220,000	**9J**	**4100J**	<120	**62J**	**6300**
Fluorene	270,000	270,000	**17J**	<1200UJ	<120	**180**	**230J**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<130	**1300J**	<120	<120	**1500**

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards Soil to GW Pathway[(A)] Non-Residental Scenario	TW-12 (10-11.5)	TW-14 (0-2)	TW-15 (0-2)	TW-15 (5-7.5)	TW-19 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			TW-12 (10-11.5)	TW-14 (0-2)	TW-15 (0-2)	TW-15 (5-7.5)	TW-19 (0-2)
Laboratory Sample Identification			A7D40711	A7D32203	A7D57504	A7D57505	A7D32204
Date Collected			11/15/2007	11/14/2007	11/20/2007	11/20/2007	11/14/2007
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	**540**	<1200UJ	<120	**230**	<1200
Phenanthrene	NA	NA	**79J**	**1700J**	<120	**920**	**3500**
Phenol	32,000,000	560,000	<130	<1200UJ	<120	<120	<1200
Pyrene	140,000	140,000	**11J**	**3100J**	<120	**170**	**5000**
Pyridine	150,000	50	*<130*	*<1200UJ*	*<120*	*<120*	*<1200*
Quinoline	NA	NA	<130	<1200UJ	<120	<120	<1200

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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		Location Identification and Sample Interval (Feet below ground surface)	**TW-19 (5-6)**	**TW-20 (0-2)**	**TW-20 (10-12)**	**TW-24S (6-7.5)**	**TW-28 (0-2)**
		Laboratory Sample Identification	**A7D40707**	**A7D65319**	**A7D65320**	**A7D72007**	**A7D96001**
		Date Collected	**11/15/2007**	**11/26/2007**	**11/26/2007**	**11/27/2007**	**12/4/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<220	<200	<200	<230	<200
1,3-Dichlorobenzene	NA	NA	<220	<200	<200	<230	<200
1,4-Dichlorobenzene	92,000	9,500	<220	<200	<200	<230	<200
2,4-Dimethylphenol	14,000,000	81,000	<130R	<120	<120	<140	<120
2,4-Dinitrophenol	1,200,000	2,100	<130	<120	<120	<140	<120
2-Methylphenol (o-cresol)	6,500,000	29,000	<130	<120	<120	<140	<120
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<130	<120	<120	<140	<120
4-Nitrophenol	NA	NA	<130	<120	<120	<140	<120
Acenaphthene	300,000	300,000	**23J**	<120	**160**	<140	**45J**
Anthracene	13,000	13,000	**59J**	**28J**	**170**	<140	<120
Benzo(a)anthracene	26,000	35,000	**68J**	**52J**	**14J**	**110J**	**140**
Benzo(a)pyrene	2,600	16,000	<130	**63J**	<120	<140	<120
Benzo(b)fluoranthene	19,000	19,000	<130	**90J**	<120	<140	<120
Benzo(k)fluoranthene	10,000	10,000	<130	**40J**	<120	<140	<120
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	**93J**	<120	<120	**290**	<120
Chrysene	6,400	6,400	**28J**	**59J**	**26J**	**100J**	**94J**
Dibenzo(a,h)anthracene	2,600	11,000	<130	**29J**	<120	<140	<120
Diethyl phthalate	3,200,000	3,200,000	<130	<120	<120	<140	<120
Dimethyl phthalate	6,812,563,000	11,456,000	<130	<120	<120	<140	<120
Di-n-butylphthalate	3,798,000	3,798,000	<130	<120	<120	<140	<120
Fluoranthene	220,000	220,000	<130	**51J**	**28J**	**23J**	<120
Fluorene	270,000	270,000	**40J**	<120	**140**	**25J**	**120**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<130	**76J**	<120	<140	<120

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-19 (5-6)	TW-20 (0-2)	TW-20 (10-12)	TW-24S (6-7.5)	TW-28 (0-2)
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A7D40707	A7D65319	A7D65320	A7D72007	A7D96001
Date Collected			11/15/2007	11/26/2007	11/26/2007	11/27/2007	12/4/2007
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	**2700**	<120	**160**	**120J**	**1500**
Phenanthrene	NA	NA	**210**	**27J**	**1300**	**250**	**1000**
Phenol	32,000,000	560,000	<130	<120	<120	<140	<120
Pyrene	140,000	140,000	<130	**58J**	**56J**	**13J**	<120
Pyridine	150,000	50	*<130*	*<120*	*<120*	*<140*	*<120*
Quinoline	NA	NA	<130	<120	<120	<140	<120

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-28 (2-2.5)	TW-28 (25-27.5)	TW-29 (0-2)	DUP-3 (DUP of TW-29 (0-2))	TW-29 (6.5-8)
Location Identification and Sample Interval (Feet below ground surface)			TW-28 (2-2.5)	TW-28 (25-27.5)	TW-29 (0-2)	DUP-3 (DUP of TW-29 (0-2))	TW-29 (6.5-8)
Laboratory Sample Identification			A7D96002	A7D96003/DL	A7E12603	A7E12605	A7E12604
Date Collected			12/4/2007	12/4/2007	12/6/2007	12/6/2007	12/6/2007
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<200	<200UJ	<200	<190	<240
1,3-Dichlorobenzene	NA	NA	<200	<200UJ	<200	<190	<240
1,4-Dichlorobenzene	92,000	9,500	<200	<200UJ	<200	<190	<240
2,4-Dimethylphenol	14,000,000	81,000	<120	<120UJ	<120	<120	<150
2,4-Dinitrophenol	1,200,000	2,100	<120	<120UJ	<120	<120	<150
2-Methylphenol (o-cresol)	6,500,000	29,000	<120	<120UJ	<120	<120	<150
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<120	<120UJ	<120	<120	<150
4-Nitrophenol	NA	NA	<120	<120UJ	<120	<120	<150
Acenaphthene	300,000	300,000	**34J**	**120DJ**	<120	<120	**41J**
Anthracene	13,000	13,000	<120	**410J**	<120	<120	<150
Benzo(a)anthracene	26,000	35,000	**94J**	**110J**	**100J**	**40J**	**76J**
Benzo(a)pyrene	2,600	16,000	<120	<120UJ	**86J**	**30J**	<150
Benzo(b)fluoranthene	19,000	19,000	<120	<120UJ	**43J**	**31J**	<150
Benzo(k)fluoranthene	10,000	10,000	<120	<120UJ	<120	**26J**	<150
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<120	**79J**	<120	<120	<150
Chrysene	6,400	6,400	**63J**	**160DJ**	**250**	**120**	**78J**
Dibenzo(a,h)anthracene	2,600	11,000	<120	<120UJ	**27J**	<120	<150
Diethyl phthalate	3,200,000	3,200,000	<120	<120UJ	<120	<120	<150
Dimethyl phthalate	6,812,563,000	11,456,000	<120	<120UJ	<120R	<120R	<150R
Di-n-butylphthalate	3,798,000	3,798,000	<120	<120UJ	<120	<120	<150
Fluoranthene	220,000	220,000	<120	**48J**	**15J**	**9J**	<150
Fluorene	270,000	270,000	**65J**	**200DJ**	<120	<120	**97J**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<120	<120UJ	<120	<120	<150

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-28 (2-2.5)	TW-28 (25-27.5)	TW-29 (0-2)	DUP-3 (DUP of TW-29 (0-2))	TW-29 (6.5-8)
Laboratory Sample Identification			A7D96002	A7D96003/DL	A7E12603	A7E12605	A7E12604
Date Collected			12/4/2007	12/4/2007	12/6/2007	12/6/2007	12/6/2007
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	**580**	**17000DJ**	<120	<120	**380**
Phenanthrene	NA	NA	**440**	**480J**	**18J**	**12J**	**320**
Phenol	32,000,000	560,000	<120	<120UJ	<120	<120	<150
Pyrene	140,000	140,000	<120	**60DJ**	**77J**	**37J**	<150
Pyridine	150,000	50	*<120*	*<120UJ*	*<120*	*<120*	*<150*
Quinoline	NA	NA	<120	<120UJ	<120	<120	<150

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards Soil to GW Pathway[(A)] Non-Residental Scenario	TW-33 (0-2)	TW-33 (4-4.5)	TW-35 (0-2)	TW-36 (0-2)	TW-36 (14-15)
Location Identification and Sample Interval (Feet below ground surface)			TW-33 (0-2)	TW-33 (4-4.5)	TW-35 (0-2)	TW-36 (0-2)	TW-36 (14-15)
Laboratory Sample Identification			A7E12601	A7E12602/DL	A7D94306	A7D85320	A7D85321
Date Collected			12/6/2007	12/6/2007	12/3/2007	11/29/2007	11/29/2007
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<200	<270	<210	<200	<220
1,3-Dichlorobenzene	NA	NA	<200	<270	<210	<200	<220
1,4-Dichlorobenzene	92,000	9,500	<200	<270	<210	<200	<220
2,4-Dimethylphenol	14,000,000	81,000	<120	<160	<120	<120	<130
2,4-Dinitrophenol	1,200,000	2,100	<120	<160	<120	<120	<130
2-Methylphenol (o-cresol)	6,500,000	29,000	**14J**	**110J**	<120	<120	<130
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	**26J**	<160	<120	<120	<130
4-Nitrophenol	NA	NA	<120	<160	<120	<120	<130
Acenaphthene	300,000	300,000	<120	**180DJ**	<120	<120	<130
Anthracene	13,000	13,000	<120	**82DJ**	<120	<120	<130
Benzo(a)anthracene	26,000	35,000	<120	**60DJ**	<120	<120	<130
Benzo(a)pyrene	2,600	16,000	<120	<160	<120	<120	<130
Benzo(b)fluoranthene	19,000	19,000	<120	<160	<120	<120	<130
Benzo(k)fluoranthene	10,000	10,000	<120	<160	<120	<120	<130
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<120	<160	<120	<120	**330**
Chrysene	6,400	6,400	<120	**20J**	<120	<120	<130
Dibenzo(a,h)anthracene	2,600	11,000	<120	<160	<120	<120	<130
Diethyl phthalate	3,200,000	3,200,000	<120	<160	<120	<120	<130
Dimethyl phthalate	6,812,563,000	11,456,000	<120R	<160R	<120	<120	<130
Di-n-butylphthalate	3,798,000	3,798,000	<120	<160	<120	<120	<130
Fluoranthene	220,000	220,000	<120	**31J**	<120	<120	<130
Fluorene	270,000	270,000	<120	**220DJ**	<120	<120	<130
Indeno(1,2,3-cd)pyrene	5,100	5,100	<120	<160	<120	<120	<130

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-33 (0-2)	TW-33 (4-4.5)	TW-35 (0-2)	TW-36 (0-2)	TW-36 (14-15)
Location Identification and Sample Interval (Feet below ground surface)			TW-33 (0-2)	TW-33 (4-4.5)	TW-35 (0-2)	TW-36 (0-2)	TW-36 (14-15)
Laboratory Sample Identification			A7E12601	A7E12602/DL	A7D94306	A7D85320	A7D85321
Date Collected			12/6/2007	12/6/2007	12/3/2007	11/29/2007	11/29/2007
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	**73J**	**13000D**	<120	<120	<130
Phenanthrene	NA	NA	<120	**720DJ**	<120	<120	<130
Phenol	32,000,000	560,000	<120	<160	<120	<120	<130
Pyrene	140,000	140,000	<120	**85DJ**	<120	<120	<130
Pyridine	150,000	50	*<120*	*<160*	*<120*	*<120*	*<130*
Quinoline	NA	NA	<120	<160	<120	<120	<130

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards Soil to GW Pathway[(A)] Non-Residental Scenario	TW-38 (0-2)	TW-38 (10-12.5)	TW-49 (6-8)	TW-50 (8-10)	TW-51 (8-10)
Location Identification and Sample Interval (Feet below ground surface)			TW-38 (0-2)	TW-38 (10-12.5)	TW-49 (6-8)	TW-50 (8-10)	TW-51 (8-10)
Laboratory Sample Identification			A7D85318	A7D85319	A8086105	A8092906	A8086108
Date Collected			11/29/2007	11/29/2007	1/23/2008	1/25/2008	1/23/2008
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<2000	<210	<210	<1000	<210
1,3-Dichlorobenzene	NA	NA	<2000	<210	<210	<1000	<210
1,4-Dichlorobenzene	92,000	9,500	<2000	<210	<210	<1000	<210
2,4-Dimethylphenol	14,000,000	81,000	<1200	<130	<120	<620	<120
2,4-Dinitrophenol	1,200,000	2,100	<1200	<130	<120	<620	<120
2-Methylphenol (o-cresol)	6,500,000	29,000	<1200	<130	<120	<620	<120
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<1200	<130	<120	<620	<120
4-Nitrophenol	NA	NA	<1200	<130	<120	<620	<120
Acenaphthene	300,000	300,000	<1200	<130	**42J**	**260J**	**22J**
Anthracene	13,000	13,000	**190J**	<130	**19J**	**430J**	<120
Benzo(a)anthracene	26,000	35,000	**540J**	<130	**50J**	**790**	<120
Benzo(a)pyrene	2,600	16,000	**710J**	<130	**26J**	**710**	<120
Benzo(b)fluoranthene	19,000	19,000	**680J**	<130	**22J**	**300J**	<120
Benzo(k)fluoranthene	10,000	10,000	**340J**	<130	**15J**	**70J**	<120
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<1200	<130	<120	<620	<120
Chrysene	6,400	6,400	**760J**	<130	**170**	**1400**	**12J**
Dibenzo(a,h)anthracene	2,600	11,000	<1200	<130	**17J**	<620	<120
Diethyl phthalate	3,200,000	3,200,000	<1200	<130	<120	<620	<120
Dimethyl phthalate	6,812,563,000	11,456,000	<1200	<130	<120	<620	<120
Di-n-butylphthalate	3,798,000	3,798,000	<1200	<130	<120	<620	<120
Fluoranthene	220,000	220,000	**420J**	<130	**27J**	**230J**	<120
Fluorene	270,000	270,000	<1200	<130	**68J**	**420J**	<120
Indeno(1,2,3-cd)pyrene	5,100	5,100	**200J**	<130	<120	<620	<120

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-38 (0-2)	TW-38 (10-12.5)	TW-49 (6-8)	TW-50 (8-10)	TW-51 (8-10)
Location Identification and Sample Interval (Feet below ground surface)			TW-38 (0-2)	TW-38 (10-12.5)	TW-49 (6-8)	TW-50 (8-10)	TW-51 (8-10)
Laboratory Sample Identification			A7D85318	A7D85319	A8086105	A8092906	A8086108
Date Collected			11/29/2007	11/29/2007	1/23/2008	1/25/2008	1/23/2008
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	<1200	<130	**430**	**450J**	**2800**
Phenanthrene	NA	NA	**330J**	<130	**320**	**3900**	**42J**
Phenol	32,000,000	560,000	<1200	<130	<120	<620	<120
Pyrene	140,000	140,000	**540J**	<130	**120**	**1500**	<120
Pyridine	150,000	50	*<1200*	*<130*	*<120*	*<620*	*<120*
Quinoline	NA	NA	<1200	<130	<120	<620	<120

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-52 (10-12)	TW-53 (0.5-2.0)	TW-67 (0.5-2.0)	TW-68 (0.5-2.0)	TW-68 (4-6)
Location Identification and Sample Interval (Feet below ground surface)			TW-52 (10-12)	TW-53 (0.5-2.0)	TW-67 (0.5-2.0)	TW-68 (0.5-2.0)	TW-68 (4-6)
Laboratory Sample Identification			A8088802	A8088803	A8106006	A8106004	A8106005
Date Collected			1/24/2008	1/24/2008	1/30/2008	1/30/2008	1/30/2008
Semivolatile Organic Compounds (µg/kg)							
1,2-Dichlorobenzene	990,000	77,000	<240	<210	<190	<1000	<1000
1,3-Dichlorobenzene	NA	NA	<240	<210	<190	<1000	<1000
1,4-Dichlorobenzene	92,000	9,500	<240	<210	<190	<1000	<1000
2,4-Dimethylphenol	14,000,000	81,000	<150	<120	<120	<620	<620
2,4-Dinitrophenol	1,200,000	2,100	<150	<120	<120	<620	<620
2-Methylphenol (o-cresol)	6,500,000	29,000	<150	<120	**190**	<620	<620
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<150	<120	<120	<620	<620
4-Nitrophenol	NA	NA	<150	<120	<120	<620	<620
Acenaphthene	300,000	300,000	**34J**	<120	**4J**	**370J**	**150J**
Anthracene	13,000	13,000	**42J**	<120	**34J**	**290J**	**57J**
Benzo(a)anthracene	26,000	35,000	**12J**	<120	**23J**	**370J**	**75J**
Benzo(a)pyrene	2,600	16,000	<150	<120	**24J**	**700**	**75J**
Benzo(b)fluoranthene	19,000	19,000	<150	<120	**10J**	**290J**	<620
Benzo(k)fluoranthene	10,000	10,000	<150	<120	<120	**82J**	<620
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<150	<120	<120	<620	<620
Chrysene	6,400	6,400	**39J**	<120	**52J**	**590J**	**58J**
Dibenzo(a,h)anthracene	2,600	11,000	<150	<120	<120	**170J**	**16J**
Diethyl phthalate	3,200,000	3,200,000	<150	<120	<120	<620	<620
Dimethyl phthalate	6,812,563,000	11,456,000	<150	<120	<120	<620	<620
Di-n-butylphthalate	3,798,000	3,798,000	<150	<120	<120	<620	<620
Fluoranthene	220,000	220,000	**24J**	<120	**21BJ**	**89BJ**	**29BJ**
Fluorene	270,000	270,000	<150	<120	<120	**580J**	<620
Indeno(1,2,3-cd)pyrene	5,100	5,100	<150	<120	<120	**250J**	**62J**

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-52 (10-12)	TW-53 (0.5-2.0)	TW-67 (0.5-2.0)	TW-68 (0.5-2.0)	TW-68 (4-6)
Location Identification and Sample Interval (Feet below ground surface)			TW-52 (10-12)	TW-53 (0.5-2.0)	TW-67 (0.5-2.0)	TW-68 (0.5-2.0)	TW-68 (4-6)
Laboratory Sample Identification			A8088802	A8088803	A8106006	A8106004	A8106005
Date Collected			1/24/2008	1/24/2008	1/30/2008	1/30/2008	1/30/2008
Semivolatile Organic Compounds (µg/kg)							
Naphthalene	325,000	3,520	**1200**	**53J**	**61J**	**1400**	**270J**
Phenanthrene	NA	NA	**340**	<120	**130**	**1400**	**180J**
Phenol	32,000,000	560,000	<150	<120	<120	<620	<620
Pyrene	140,000	140,000	**99J**	<120	**110BJ**	**710B**	**110BJ**
Pyridine	150,000	50	*<150*	*<120*	*<120*	*<620*	*<620*
Quinoline	NA	NA	<150	<120	<120	<620	<620

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[A] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[A] Non-Residental Scenario	TW-72 (11-12.5)	TW-77 (18-20)	TW-78 (16-18)	TW-80 (10-12.6)
Location Identification and Sample Interval (Feet below ground surface)			TW-72 (11-12.5)	TW-77 (18-20)	TW-78 (16-18)	TW-80 (10-12.6)
Laboratory Sample Identification			A7D51003/RI	A7E21505	A7E21507	A8092902/DL
Date Collected			11/19/2007	12/7/2007	12/7/2007	1/25/2008
Semivolatile Organic Compounds (µg/kg)						
1,2-Dichlorobenzene	990,000	77,000	<210	<210	<220	<180
1,3-Dichlorobenzene	NA	NA	<210	<210	<220	<180
1,4-Dichlorobenzene	92,000	9,500	<210	<210	<220	<180
2,4-Dimethylphenol	14,000,000	81,000	<130	<130	<140	<110
2,4-Dinitrophenol	1,200,000	2,100	<130	<130	<140	<110
2-Methylphenol (o-cresol)	6,500,000	29,000	<130	<130	<140	<110
3+4-Methylphenol (m&p-cresols)[B]	3,400,000	6,500	<130	<130	<140	<110
4-Nitrophenol	NA	NA	<130	<130	<140	<110
Acenaphthene	300,000	300,000	<130	<130	<140	**3300DJ**
Anthracene	13,000	13,000	<130	<130	<140	**2600J**
Benzo(a)anthracene	26,000	35,000	**350J**	<130	**22J**	**81J**
Benzo(a)pyrene	2,600	16,000	<130	<130	<140	<110
Benzo(b)fluoranthene	19,000	19,000	<130	<130	<140	<110
Benzo(k)fluoranthene	10,000	10,000	<130	<130	<140	<110
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<130	<130	<140	**86J**
Chrysene	6,400	6,400	**210J**	<130	**23J**	**140J**
Dibenzo(a,h)anthracene	2,600	11,000	<130	<130	<140	<110
Diethyl phthalate	3,200,000	3,200,000	<130	<130	<140	<110
Dimethyl phthalate	6,812,563,000	11,456,000	<130	<130R	<140R	<110
Di-n-butylphthalate	3,798,000	3,798,000	<130	<130	<140	<110
Fluoranthene	220,000	220,000	<130	<130	<140	**420DJ**
Fluorene	270,000	270,000	**79J**	<130	<140	**4400DJ**
Indeno(1,2,3-cd)pyrene	5,100	5,100	<130	<130	<140	<110

Table 7b

Soil Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 44 of 44)

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-72 (11-12.5)	TW-77 (18-20)	TW-78 (16-18)	TW-80 (10-12.6)
			A7D51003/RI	A7E21505	A7E21507	A8092902/DL
			11/19/2007	12/7/2007	12/7/2007	1/25/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Semivolatile Organic Compounds (µg/kg)						
Naphthalene	325,000	3,520	**120J**	<130	<140	**14000DJ**
Phenanthrene	NA	NA	**890J**	**12J**	**52J**	**16000DJ**
Phenol	32,000,000	560,000	<130	<130	<140	<110
Pyrene	140,000	140,000	<130	<130	<140	**1000DJ**
Pyridine	150,000	50	*<130*	*<130*	*<140*	*<110*
Quinoline	NA	NA	<130	<130	<140	<110

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
NA	Not applicaple
D	Compound detected at the secondary dilution factor.
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
UJ	Potential false negative due to low QC recoveries.
R	The data are rejected and may not be useable, due to QC deficiencies.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 202)

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-001 (0.5-1.5)	BH-002 (0.5-1.5)	BH-003 (0.5-1.5)	BH-004 (0.5-1.5)
	Laboratory Sample Identification		A7D87408	A7D87407	A7D87409	A7D87401
	Date Collected		11/30/2007	11/30/2007	11/30/2007	11/30/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**950J**	**260**	<3.3	<3.3
Gasoline Range Organics	450	150	**150**	<5	<5	**1.2J**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 202)

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-001 (0.5-1.5)	BH-002 (0.5-1.5)	BH-003 (0.5-1.5)	BH-004 (0.5-1.5)
	Laboratory Sample Identification		A7D87408	A7D87407	A7D87409	A7D87401
	Date Collected		11/30/2007	11/30/2007	11/30/2007	11/30/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 202)

	Location Identification and Sample Interval (Feet below ground surface)		BH-005 (0.5-1.5)	BH-006 (0.5-1.5)	BH-007 (0.5-1.5)	BH-008 (0.5-1.5)
	Laboratory Sample Identification		A7D87403	A7D87402	A7D87406	A7D87404
	Date Collected		11/30/2007	11/30/2007	11/30/2007	11/30/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	**14**	**700**	<3.3
Gasoline Range Organics	450	150	<5	<5	**4700**	**0.96J**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 202)

	Location Identification and Sample Interval (Feet below ground surface)		**BH-005 (0.5-1.5)**	**BH-006 (0.5-1.5)**	**BH-007 (0.5-1.5)**	**BH-008 (0.5-1.5)**
	Laboratory Sample Identification		**A7D87403**	**A7D87402**	**A7D87406**	**A7D87404**
	Date Collected		**11/30/2007**	**11/30/2007**	**11/30/2007**	**11/30/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 202)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-009 (0.5-1.5)	BH-010 (0.5-1.5)	BH-011 (0.5-1.5)	BH-012 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-009 (0.5-1.5)	BH-010 (0.5-1.5)	BH-011 (0.5-1.5)	BH-012 (0.5-1.5)
Laboratory Sample Identification			A7D87405	A7D87410	A7D87412	A7D87411
Date Collected			11/30/2007	11/30/2007	11/30/2007	11/30/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	**520**	**130**
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 6 of 202)

	Location Identification and Sample Interval (Feet below ground surface)		**BH-009 (0.5-1.5)**	**BH-010 (0.5-1.5)**	**BH-011 (0.5-1.5)**	**BH-012 (0.5-1.5)**
	Laboratory Sample Identification		**A7D87405**	**A7D87410**	**A7D87412**	**A7D87411**
	Date Collected		**11/30/2007**	**11/30/2007**	**11/30/2007**	**11/30/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-013 (0.5-1.5)	BH-014 (0.5-1.5)	BH-015 (0.5-1.5)	BH-016 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-013 (0.5-1.5)	BH-014 (0.5-1.5)	BH-015 (0.5-1.5)	BH-016 (0.5-1.5)
Laboratory Sample Identification			A7D87415	A7D87414	A7D87413	A7E54612
Date Collected			11/30/2007	11/30/2007	11/30/2007	12/13/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	<3.3	**4.7**
Gasoline Range Organics	450	150	<5	<5	**1.3J**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 8 of 202)

		Location Identification and Sample Interval (Feet below ground surface)	**BH-013 (0.5-1.5)**	**BH-014 (0.5-1.5)**	**BH-015 (0.5-1.5)**	**BH-016 (0.5-1.5)**
		Laboratory Sample Identification	**A7D87415**	**A7D87414**	**A7D87413**	**A7E54612**
		Date Collected	**11/30/2007**	**11/30/2007**	**11/30/2007**	**12/13/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**BH-017 (0.5-1.5)**	**BH-018 (0.5-1.5)**	**BH-019 (0.5-1.5)**	**BH-020 (0.5-1.5)**
	Laboratory Sample Identification		**A7E57011**	**A7E54613**	**A7D87416**	**A7D87417**
	Date Collected		**12/14/2007**	**12/13/2007**	**11/30/2007**	**11/30/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	**2.6J**	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-017 (0.5-1.5)	BH-018 (0.5-1.5)	BH-019 (0.5-1.5)	BH-020 (0.5-1.5)
	Laboratory Sample Identification		A7E57011	A7E54613	A7D87416	A7D87417
	Date Collected		12/14/2007	12/13/2007	11/30/2007	11/30/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-021 (0.5-1.5)	BH-022 (0.5-1.5)	BH-023 (0.5-1.5)	BH-024 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-021 (0.5-1.5)	BH-022 (0.5-1.5)	BH-023 (0.5-1.5)	BH-024 (0.5-1.5)
Laboratory Sample Identification			A7D87418	A8042202	A8042203	A8042204
Date Collected			11/30/2007	1/10/2008	1/10/2008	1/10/2008
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**63J**	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	**920**	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-021 (0.5-1.5)**	**BH-022 (0.5-1.5)**	**BH-023 (0.5-1.5)**	**BH-024 (0.5-1.5)**
	Laboratory Sample Identification		**A7D87418**	**A8042202**	**A8042203**	**A8042204**
	Date Collected		**11/30/2007**	**1/10/2008**	**1/10/2008**	**1/10/2008**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		BH-025 (0.5-1.5)	BH-026 (0.5-1.5)	BH-027 (0.5-1.5)	BH-028 (0.5-1.5)
		Laboratory Sample Identification	A7E29006	A7E29005	A7E29004	A7E29007
		Date Collected	12/10/2007	12/10/2007	12/10/2007	12/10/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**150**	**8.7**	<3.3	**20**
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-025 (0.5-1.5)**	**BH-026 (0.5-1.5)**	**BH-027 (0.5-1.5)**	**BH-028 (0.5-1.5)**
	Laboratory Sample Identification		**A7E29006**	**A7E29005**	**A7E29004**	**A7E29007**
	Date Collected		**12/10/2007**	**12/10/2007**	**12/10/2007**	**12/10/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-029 (0.5-1.5)**	**BH-030 (0.5-1.5)**	**BH-031 (0.5-1.5)**	**BH-032 (0.5-1.5)**
	Laboratory Sample Identification		**A7E570010**	**A7E57009**	**A7E44101**	**A7E44103**
	Date Collected		**12/14/2007**	**12/14/2007**	**12/12/2007**	**12/12/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-029 (0.5-1.5)	BH-030 (0.5-1.5)	BH-031 (0.5-1.5)	BH-032 (0.5-1.5)
	Laboratory Sample Identification		A7E570010	A7E57009	A7E44101	A7E44103
	Date Collected		12/14/2007	12/14/2007	12/12/2007	12/12/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		BH-033 (0.5-1.5)	BH-034 (0.5-1.5)	BH-035 (0.5-1.5)	BH-036 (0.5-1.5)
		Laboratory Sample Identification	A7E57008	A7E44102	A7E44106	A7E44105
		Date Collected	12/14/2007	12/12/2007	12/12/2007	12/12/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**4800**	<3.3	<3.3	**160**
Gasoline Range Organics	450	150	**9.8**	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-033 (0.5-1.5)**	**BH-034 (0.5-1.5)**	**BH-035 (0.5-1.5)**	**BH-036 (0.5-1.5)**
	Laboratory Sample Identification		**A7E57008**	**A7E44102**	**A7E44106**	**A7E44105**
	Date Collected		**12/14/2007**	**12/12/2007**	**12/12/2007**	**12/12/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		BH-037 (0.5-1.5)	BH-038 (0.5-1.5)	BH-039 (0.5-1.5)	BH-040 (0.5-1.5)
	Laboratory Sample Identification		A7E44104	A7E57007	A7E57006	A8042212
	Date Collected		12/12/2007	12/14/2007	12/14/2007	1/10/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	**1300**	<3.3
Gasoline Range Organics	450	150	**5.3**	<5	**110**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-037 (0.5-1.5)**	**BH-038 (0.5-1.5)**	**BH-039 (0.5-1.5)**	**BH-040 (0.5-1.5)**
	Laboratory Sample Identification		**A7E44104**	**A7E57007**	**A7E57006**	**A8042212**
	Date Collected		**12/12/2007**	**12/14/2007**	**12/14/2007**	**1/10/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		BH-041 (0.5-1.5)	BH-042 (0.5-1.5)	BH-043 (0.5-1.5)	BH-044 (0.5-1.5)
		Laboratory Sample Identification	A7E57005	A8042211	A7E57004	A8042210
		Date Collected	12/14/2007	1/10/2008	12/14/2007	1/10/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-041 (0.5-1.5)	BH-042 (0.5-1.5)	BH-043 (0.5-1.5)	BH-044 (0.5-1.5)
	Laboratory Sample Identification		A7E57005	A8042211	A7E57004	A8042210
	Date Collected		12/14/2007	1/10/2008	12/14/2007	1/10/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-045 (0.5-1.5)**	**BH-046 (0.5-1.5)**	**BH-48 (0.5-1.5)**	**BH-050 (0.5-1.5)**
	Laboratory Sample Identification		**A8042209**	**A8042208**	**A8042201**	**A8042213**
	Date Collected		**1/10/2008**	**1/10/2008**	**1/10/2008**	**1/10/2008**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**390**	<3.3	<3.3	**8.7**
Gasoline Range Organics	450	150	**12**	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-045 (0.5-1.5)**	**BH-046 (0.5-1.5)**	**BH-48 (0.5-1.5)**	**BH-050 (0.5-1.5)**
	Laboratory Sample Identification		**A8042209**	**A8042208**	**A8042201**	**A8042213**
	Date Collected		**1/10/2008**	**1/10/2008**	**1/10/2008**	**1/10/2008**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-051 (0.5-1.5)**	**BH-053 (0.5-1.5)**	**BH-054 (0.5-1.5)**	**BH-055 (0.5-1.5)**
	Laboratory Sample Identification		**A8042214**	**A7E44110**	**A7E44112**	**A7E44111**
	Date Collected		**1/10/2008**	**12/12/2007**	**12/12/2007**	**12/12/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	**48**	**42**
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-051 (0.5-1.5)	BH-053 (0.5-1.5)	BH-054 (0.5-1.5)	BH-055 (0.5-1.5)
	Laboratory Sample Identification		A8042214	A7E44110	A7E44112	A7E44111
	Date Collected		1/10/2008	12/12/2007	12/12/2007	12/12/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-056 (0.5-1.5)	BH-057 (0.5-1.5)	BH-058 (0.5-1.5)	BH-059 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			BH-056 (0.5-1.5)	BH-057 (0.5-1.5)	BH-058 (0.5-1.5)	BH-059 (0-2)
Laboratory Sample Identification			A7E44109	A7E44108	A7E44107	A7D57809
Date Collected			12/12/2007	12/12/2007	12/12/2007	11/20/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**1400**	**2000**	<3.3	<3.3
Gasoline Range Organics	450	150	**150**	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-056 (0.5-1.5)	BH-057 (0.5-1.5)	BH-058 (0.5-1.5)	BH-059 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			BH-056 (0.5-1.5)	BH-057 (0.5-1.5)	BH-058 (0.5-1.5)	BH-059 (0-2)
Laboratory Sample Identification			A7E44109	A7E44108	A7E44107	A7D57809
Date Collected			12/12/2007	12/12/2007	12/12/2007	11/20/2007
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 29 of 202)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-060 (0-2)	BH-061 (0-2)	BH-062 (0-2)	BH-063 (0-2)	BH-064 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			BH-060 (0-2)	BH-061 (0-2)	BH-062 (0-2)	BH-063 (0-2)	BH-064 (0-2)
Laboratory Sample Identification			A7D57810	A7D57808	A7D57801	A7D57802	A7D57814
Date Collected			11/20/2007	11/20/2007	11/20/2007	11/20/2007	11/20/2007
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**13**	<3.3	<3.3	**6700J**	<3.3
Gasoline Range Organics	450	150	<5	**1.6J**	<5	**730**	**0.86J**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-060 (0-2)	BH-061 (0-2)	BH-062 (0-2)	BH-063 (0-2)	BH-064 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			BH-060 (0-2)	BH-061 (0-2)	BH-062 (0-2)	BH-063 (0-2)	BH-064 (0-2)
Laboratory Sample Identification			A7D57810	A7D57808	A7D57801	A7D57802	A7D57814
Date Collected			11/20/2007	11/20/2007	11/20/2007	11/20/2007	11/20/2007
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-065 (0-2)	BH-066 (0-2)	BH-067 (0-2)	BH-068 (0.5-1.5)
	Laboratory Sample Identification		A7D57812	A7D57813	A7D57803	A7E12308
	Date Collected		11/20/2007	11/20/2007	11/20/2007	12/5/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**480**	**28**	**460**	**150**
Gasoline Range Organics	450	150	**740**	**120**	**29**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-065 (0-2)	BH-066 (0-2)	BH-067 (0-2)	BH-068 (0.5-1.5)
	Laboratory Sample Identification		A7D57812	A7D57813	A7D57803	A7E12308
	Date Collected		11/20/2007	11/20/2007	11/20/2007	12/5/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-069 (0.5-1.5)	BH-070 (0.5-1.5)	BH-071 (0.5-1.5)
	Laboratory Sample Identification		A7E12307	A7E12309	A7E12806
	Date Collected		12/5/2007	12/5/2007	12/6/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	<3.3	**230**	**220J**
Gasoline Range Organics	450	150	<5	<5	**56J**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-069 (0.5-1.5)	BH-070 (0.5-1.5)	BH-071 (0.5-1.5)
	Laboratory Sample Identification		A7E12307	A7E12309	A7E12806
	Date Collected		12/5/2007	12/5/2007	12/6/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-071-50 (DUP of BH-071 (0.5-1.5))**	**BH-072 (0.5-1.5)**	**BH-073 (0.5-1.5)**	**BH-074**
	Laboratory Sample Identification		**A7E12807**	**A7E12805**	**A7E12804**	**A7D65315**
	Date Collected		**12/6/2007**	**12/6/2007**	**12/6/2007**	**11/26/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**120**	**90**	**350**	**7.6**
Gasoline Range Organics	450	150	**100**	**40**	**15**	**6**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-071-50 (DUP of BH-071 (0.5-1.5))**	**BH-072 (0.5-1.5)**	**BH-073 (0.5-1.5)**	**BH-074**
	Laboratory Sample Identification		**A7E12807**	**A7E12805**	**A7E12804**	**A7D65315**
	Date Collected		**12/6/2007**	**12/6/2007**	**12/6/2007**	**11/26/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-075	BH-076	BH-077 (0.5-1.5)	BH-078 (0.5-1.5)	BH-079 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-075	BH-076	BH-077 (0.5-1.5)	BH-078 (0.5-1.5)	BH-079 (0.5-1.5)
Laboratory Sample Identification			A7D65316	A7D65314	A7E12803	A7E12802	A7E12801
Date Collected			11/26/2007	11/26/2007	12/6/2007	12/6/2007	12/6/2007
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**7.3**	<3.3	<3.3	**89**	**100**
Gasoline Range Organics	450	150	**6.1**	**29**	<5	<5	<5
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-075	BH-076	BH-077 (0.5-1.5)	BH-078 (0.5-1.5)	BH-079 (0.5-1.5)
	Laboratory Sample Identification		A7D65316	A7D65314	A7E12803	A7E12802	A7E12801
	Date Collected		11/26/2007	11/26/2007	12/6/2007	12/6/2007	12/6/2007
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-080 (0.5-1.5)	BH-081 (0.5-1.5)	BH-082 (0.5-1.5)	BH-083 (0.5-1.5)
	Laboratory Sample Identification		A7E12812	A7E12811	A7E12813	A7E12810
	Date Collected		12/6/2007	12/6/2007	12/6/2007	12/6/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**120**	<3.3	**51**	**190**
Gasoline Range Organics	450	150	<5	**15**	<5	**5.3**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-080 (0.5-1.5)	BH-081 (0.5-1.5)	BH-082 (0.5-1.5)	BH-083 (0.5-1.5)
	Laboratory Sample Identification		A7E12812	A7E12811	A7E12813	A7E12810
	Date Collected		12/6/2007	12/6/2007	12/6/2007	12/6/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		BH-084 (0.5-1.5)	BH-085 (0.5-1.5)	BH-086 (0.5-1.5)	BH-087 (0.5-1.5)
		Laboratory Sample Identification	A7E12808	A7E12809	A7E29002	A7E29001
		Date Collected	12/6/2007	12/6/2007	12/6/2007	12/10/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**790**	**160**	**13**	**120J**
Gasoline Range Organics	450	150	**5.5**	**38**	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-084 (0.5-1.5)**	**BH-085 (0.5-1.5)**	**BH-086 (0.5-1.5)**	**BH-087 (0.5-1.5)**
	Laboratory Sample Identification		**A7E12808**	**A7E12809**	**A7E29002**	**A7E29001**
	Date Collected		**12/6/2007**	**12/6/2007**	**12/6/2007**	**12/10/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		BH-088 (0.5-1.5)	BH-089 (0.5-1.5)	BH-090 (0.5-1.5)	BH-091 (0.5-1.5)
		Laboratory Sample Identification	A7E29003	A7E12818	A7E12817	A7E12819
		Date Collected	12/10/2007	12/6/2007	12/6/2007	12/6/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**98**	<3.3	**18**	**830**
Gasoline Range Organics	450	150	<5	<5	**130**	**110**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-088 (0.5-1.5)	BH-089 (0.5-1.5)	BH-090 (0.5-1.5)	BH-091 (0.5-1.5)
	Laboratory Sample Identification		A7E29003	A7E12818	A7E12817	A7E12819
	Date Collected		12/10/2007	12/6/2007	12/6/2007	12/6/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-092 (0.5-1.5)	BH-093 (0.5-1.5)	BH-094 (0.5-1.5)	BH-095 (0.5-1.5)
		Laboratory Sample Identification	A7E12816	A7E12815	A7E12814	A7E12312
		Date Collected	12/6/2007	12/6/2007	12/6/2007	12/5/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	**140**	**880**	**7.2**
Gasoline Range Organics	450	150	<5	**170**	**5**	**16J**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		BH-092 (0.5-1.5)	BH-093 (0.5-1.5)	BH-094 (0.5-1.5)	BH-095 (0.5-1.5)
	Laboratory Sample Identification		A7E12816	A7E12815	A7E12814	A7E12312
	Date Collected		12/6/2007	12/6/2007	12/6/2007	12/5/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-095-50 (DUP of BH-095 (0.5-1.5))	BH-096 (0.5-1.5)	BH-097 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)					
Laboratory Sample Identification			A7E12313	A7E12311	A7E12310
Date Collected			12/5/2007	12/5/2007	12/5/2007
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**100**	<3.3	**13**
Gasoline Range Organics	450	150	<5	<5	<5
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-095-50 (DUP of BH-095 (0.5-1.5))	BH-096 (0.5-1.5)	BH-097 (0.5-1.5)
	Laboratory Sample Identification		A7E12313	A7E12311	A7E12310
	Date Collected		12/5/2007	12/5/2007	12/5/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-098 (0.5-1.5)	BH-099 (0.5-1.5)	BH-100 (0.5-1.5)	BH-101 (0.5-1.5)
	Laboratory Sample Identification		A7E12305	A7E12306	A7E12304	A7E12301
	Date Collected		12/5/2007	12/5/2007	12/5/2007	12/5/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	**12**	**16**	<3.3
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-098 (0.5-1.5)	BH-099 (0.5-1.5)	BH-100 (0.5-1.5)	BH-101 (0.5-1.5)
	Laboratory Sample Identification		A7E12305	A7E12306	A7E12304	A7E12301
	Date Collected		12/5/2007	12/5/2007	12/5/2007	12/5/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-102 (0.5-1.5)	BH-103 (0.5-1.5)	BH-104 (0.5-1.5)	BH-105 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-102 (0.5-1.5)	BH-103 (0.5-1.5)	BH-104 (0.5-1.5)	BH-105 (0.5-1.5)
Laboratory Sample Identification			A7E12302	A7E12303	A7E12319	A7E12318
Date Collected			12/5/2007	12/5/2007	12/5/2007	12/5/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	**30**	**600J**
Gasoline Range Organics	450	150	<5	<5	<5	**22**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-102 (0.5-1.5)	BH-103 (0.5-1.5)	BH-104 (0.5-1.5)	BH-105 (0.5-1.5)
	Laboratory Sample Identification		A7E12302	A7E12303	A7E12319	A7E12318
	Date Collected		12/5/2007	12/5/2007	12/5/2007	12/5/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-106 (0.5-1.5)	BH-107 (0.5-1.5)	BH-108 (0.5-1.5)	BH-109 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-106 (0.5-1.5)	BH-107 (0.5-1.5)	BH-108 (0.5-1.5)	BH-109 (0.5-1.5)
Laboratory Sample Identification			A7E12317	A7D95802	A7D95803	A7D95807
Date Collected			12/5/2007	12/4/2007	12/4/2007	12/4/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**80J**	**180**	**190J**	<3.3
Gasoline Range Organics	450	150	<5	**1.9J**	**76**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-106 (0.5-1.5)**	**BH-107 (0.5-1.5)**	**BH-108 (0.5-1.5)**	**BH-109 (0.5-1.5)**
	Laboratory Sample Identification		**A7E12317**	**A7D95802**	**A7D95803**	**A7D95807**
	Date Collected		**12/5/2007**	**12/4/2007**	**12/4/2007**	**12/4/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-110 (0.5-1.5)	BH-111 (0.5-1.5)	BH-112 (0.5-1.5)	BH-113 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-110 (0.5-1.5)	BH-111 (0.5-1.5)	BH-112 (0.5-1.5)	BH-113 (0.5-1.5)
Laboratory Sample Identification			A7D95804	A7D95806	A7D95805	A7E12314
Date Collected			12/4/2007	12/4/2007	12/4/2007	12/4/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**9**	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-110 (0.5-1.5)**	**BH-111 (0.5-1.5)**	**BH-112 (0.5-1.5)**	**BH-113 (0.5-1.5)**
	Laboratory Sample Identification		**A7D95804**	**A7D95806**	**A7D95805**	**A7E12314**
	Date Collected		**12/4/2007**	**12/4/2007**	**12/4/2007**	**12/4/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-114 (0.5-1.5)	BH-115 (0.5-1.5)	BH-116 (0.5-1.5)	BH-117 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-114 (0.5-1.5)	BH-115 (0.5-1.5)	BH-116 (0.5-1.5)	BH-117 (0.5-1.5)
Laboratory Sample Identification			A7E12316	A7E12315	A7D95810	A7D95808
Date Collected			12/4/2007	12/4/2007	12/4/2007	12/4/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**36**	<3.3	<3.3	**250**
Gasoline Range Organics	450	150	<5	<5	<5	**2.3J**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-114 (0.5-1.5)**	**BH-115 (0.5-1.5)**	**BH-116 (0.5-1.5)**	**BH-117 (0.5-1.5)**
	Laboratory Sample Identification		**A7E12316**	**A7E12315**	**A7D95810**	**A7D95808**
	Date Collected		**12/4/2007**	**12/4/2007**	**12/4/2007**	**12/4/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-118 (0.5-1.5)	BH-119 (0.5-1.5)	BH-120 (0.5-1.5)	BH-121 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-118 (0.5-1.5)	BH-119 (0.5-1.5)	BH-120 (0.5-1.5)	BH-121 (0.5-1.5)
Laboratory Sample Identification			A7D95811	A7D95809	A7D95819	A7D95818
Date Collected			12/4/2007	12/4/2007	12/4/2007	12/4/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	**29**	**7.6**	**7.6**
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-118 (0.5-1.5)	BH-119 (0.5-1.5)	BH-120 (0.5-1.5)	BH-121 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-118 (0.5-1.5)	BH-119 (0.5-1.5)	BH-120 (0.5-1.5)	BH-121 (0.5-1.5)
Laboratory Sample Identification			A7D95811	A7D95809	A7D95819	A7D95818
Date Collected			12/4/2007	12/4/2007	12/4/2007	12/4/2007
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-122 (0.5-1.5)	BH-123 (0.5-1.5)	BH-124 (0.5-1.5)	BH-125 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-122 (0.5-1.5)	BH-123 (0.5-1.5)	BH-124 (0.5-1.5)	BH-125 (0.5-1.5)
Laboratory Sample Identification			A7D95801	A7D95813	A7D95812	A7D95816
Date Collected			12/4/2007	12/4/2007	12/4/2007	12/4/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**30J**	<3.3	**12**	<3.3
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		BH-122 (0.5-1.5)	BH-123 (0.5-1.5)	BH-124 (0.5-1.5)	BH-125 (0.5-1.5)
	Laboratory Sample Identification		A7D95801	A7D95813	A7D95812	A7D95816
	Date Collected		12/4/2007	12/4/2007	12/4/2007	12/4/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-126 (0.5-1.5)	BH-127 (0.5-1.5)	BH-128 (0.5-1.5)	BH-129 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-126 (0.5-1.5)	BH-127 (0.5-1.5)	BH-128 (0.5-1.5)	BH-129 (0.5-1.5)
Laboratory Sample Identification			A7D95817	A7D95815	A7D95814	A7E54605
Date Collected			12/4/2007	12/4/2007	12/4/2007	12/13/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**50**	**12**	**16**	**8400**
Gasoline Range Organics	450	150	<5	<5	<5	**5800**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-126 (0.5-1.5)**	**BH-127 (0.5-1.5)**	**BH-128 (0.5-1.5)**	**BH-129 (0.5-1.5)**
	Laboratory Sample Identification		**A7D95817**	**A7D95815**	**A7D95814**	**A7E54605**
	Date Collected		**12/4/2007**	**12/4/2007**	**12/4/2007**	**12/13/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-130 (0.5-1.5)	BH-131 (0.5-1.5)	BH-132 (0.5-1.5)	BH-133 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-130 (0.5-1.5)	BH-131 (0.5-1.5)	BH-132 (0.5-1.5)	BH-133 (0.5-1.5)
Laboratory Sample Identification			A7E54604	A7E54603	A7E54602	A7E54601
Date Collected			12/13/2007	12/13/2007	12/13/2007	12/13/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**68**	**41**	**540J**	**5600**
Gasoline Range Organics	450	150	**50**	<5	**40**	**4600**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-130 (0.5-1.5)	BH-131 (0.5-1.5)	BH-132 (0.5-1.5)	BH-133 (0.5-1.5)
	Laboratory Sample Identification		A7E54604	A7E54603	A7E54602	A7E54601
	Date Collected		12/13/2007	12/13/2007	12/13/2007	12/13/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-134 (0.5-1.5)	BH-135 (0.5-1.5)	BH-135-50 (DUP of BH-135 (0.5-1.5))
Location Identification and Sample Interval (Feet below ground surface)			BH-134 (0.5-1.5)	BH-135 (0.5-1.5)	BH-135-50 (DUP of BH-135 (0.5-1.5))
Laboratory Sample Identification			A7E54606	A7E54615	A7E54616
Date Collected			12/13/2007	12/13/2007	12/13/2007
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**280**	**510**	**750**
Gasoline Range Organics	450	150	**11**	**1.8J**	**0.99J**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-134 (0.5-1.5)	BH-135 (0.5-1.5)	BH-135-50 (DUP of BH-135 (0.5-1.5))
Location Identification and Sample Interval (Feet below ground surface)			BH-134 (0.5-1.5)	BH-135 (0.5-1.5)	BH-135-50 (DUP of BH-135 (0.5-1.5))
Laboratory Sample Identification			A7E54606	A7E54615	A7E54616
Date Collected			12/13/2007	12/13/2007	12/13/2007
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-136 (0.5-1.5)	BH-137 (0.5-1.5)	BH-138 (0.5-1.5)	BH-139 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			**BH-136 (0.5-1.5)**	**BH-137 (0.5-1.5)**	**BH-138 (0.5-1.5)**	**BH-139 (0.5-1.5)**
Laboratory Sample Identification			**A7E54618**	**A7E54617**	**A7E54607**	**A7E54610**
Date Collected			**12/13/2007**	**12/13/2007**	**12/13/2007**	**12/13/2007**
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**48**	**650**	**31**	**36**
Gasoline Range Organics	450	150	**1.2J**	**19**	**1.8J**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-136 (0.5-1.5)**	**BH-137 (0.5-1.5)**	**BH-138 (0.5-1.5)**	**BH-139 (0.5-1.5)**
	Laboratory Sample Identification		**A7E54618**	**A7E54617**	**A7E54607**	**A7E54610**
	Date Collected		**12/13/2007**	**12/13/2007**	**12/13/2007**	**12/13/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-140 (0.5-1.5)**	**BH-141 (0.5-1.5)**	**BH-142 (0.5-1.5)**	**BH-143 (0.5-1.5)**
	Laboratory Sample Identification		**A7E54611**	**A7E54609**	**A7E54608**	**A8042205**
	Date Collected		**12/13/2007**	**12/13/2007**	**12/13/2007**	**1/10/2008**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**35**	**2900**	**3600**	<3.3
Gasoline Range Organics	450	150	<5	**2.1J**	**50**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	BH-140 (0.5-1.5)	BH-141 (0.5-1.5)	BH-142 (0.5-1.5)	BH-143 (0.5-1.5)
Location Identification and Sample Interval (Feet below ground surface)			BH-140 (0.5-1.5)	BH-141 (0.5-1.5)	BH-142 (0.5-1.5)	BH-143 (0.5-1.5)
Laboratory Sample Identification			A7E54611	A7E54609	A7E54608	A8042205
Date Collected			12/13/2007	12/13/2007	12/13/2007	1/10/2008
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		BH-144 (0.5-1.5)	BH-145 (0.5-1.5)	PSB-04 (3.75-5.75)	PSB-05 (2.8-4.8)
	Laboratory Sample Identification		A8042206	A8042207	A8D70803	A8D70805
	Date Collected		1/10/2008	1/10/2008	10/29/2008	10/29/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	<5	<5
Gasoline Range Organics	450	150	<5	<5	**0.84J**	**370**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**BH-144 (0.5-1.5)**	**BH-145 (0.5-1.5)**	**PSB-04 (3.75-5.75)**	**PSB-05 (2.8-4.8)**
	Laboratory Sample Identification		**A8042206**	**A8042207**	**A8D70803**	**A8D70805**
	Date Collected		**1/10/2008**	**1/10/2008**	**10/29/2008**	**10/29/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		PSB-06 (3.75-5.75)	PSB-11 (4-6)	PSB-12 (2-4)	PSB-13 (2.75-4.75)
	Laboratory Sample Identification		A8D81002	A8D85103	A8D85105	A8D89102
	Date Collected		10/30/2008	10/31/2008	10/31/2008	11/3/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**140**	**300J**	**270**	<5
Gasoline Range Organics	450	150	**1400**	**49**	**750**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-06 (3.75-5.75)**	**PSB-11 (4-6)**	**PSB-12 (2-4)**	**PSB-13 (2.75-4.75)**
	Laboratory Sample Identification		**A8D81002**	**A8D85103**	**A8D85105**	**A8D89102**
	Date Collected		**10/30/2008**	**10/31/2008**	**10/31/2008**	**11/3/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		PSB-15 (12.5-14.5)	PSB-16 (11.5-13.5)	PSB-17 (11-13)	PSB-18 (9-11)
		Laboratory Sample Identification	A8D89105	A8D89107	A8D98902	A8D98904
		Date Collected	11/3/2008	11/3/2008	11/4/2008	11/4/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<5	<5	<5	<5
Gasoline Range Organics	450	150	<5	<5	<5	**40**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		PSB-15 (12.5-14.5)	PSB-16 (11.5-13.5)	PSB-17 (11-13)	PSB-18 (9-11)
	Laboratory Sample Identification		A8D89105	A8D89107	A8D98902	A8D98904
	Date Collected		11/3/2008	11/3/2008	11/4/2008	11/4/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	PSB-19 (11.75-13.75)	PSB-20 (7.5-9.5)	PSB-21 (2-4)	PSB-22 (2.25-4.25)
Location Identification and Sample Interval (Feet below ground surface)			PSB-19 (11.75-13.75)	PSB-20 (7.5-9.5)	PSB-21 (2-4)	PSB-22 (2.25-4.25)
Laboratory Sample Identification			A8D98906	A8E20502	A8E20504	A8E20506
Date Collected			11/4/2008	11/6/2008	11/6/2008	11/6/2008
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**570J**	<5	**60**	**520J**
Gasoline Range Organics	450	150	**520**	<0.5	**20**	**140**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		PSB-19 (11.75-13.75)	PSB-20 (7.5-9.5)	PSB-21 (2-4)	PSB-22 (2.25-4.25)
	Laboratory Sample Identification		A8D98906	A8E20502	A8E20504	A8E20506
	Date Collected		11/4/2008	11/6/2008	11/6/2008	11/6/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	PSB-23 (2.5-4.5)	PSB-24 (3.75-5.75)	PSB-26 (3.25-5.25)	PSB-27 (2-4)
Location Identification and Sample Interval (Feet below ground surface)			PSB-23 (2.5-4.5)	PSB-24 (3.75-5.75)	PSB-26 (3.25-5.25)	PSB-27 (2-4)
Laboratory Sample Identification			A8E25502	A8E25504	A8E25507	A8E31802
Date Collected			11/7/2008	11/7/2008	11/7/2008	11/10/2008
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**190**	**360J**	<5	**270**
Gasoline Range Organics	450	150	**340**	**95J**	**2.6J**	**280**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**PSB-23 (2.5-4.5)**	**PSB-24 (3.75-5.75)**	**PSB-26 (3.25-5.25)**	**PSB-27 (2-4)**
	Laboratory Sample Identification		**A8E25502**	**A8E25504**	**A8E25507**	**A8E31802**
	Date Collected		**11/7/2008**	**11/7/2008**	**11/7/2008**	**11/10/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	PSB-27 (7.5-9.5)	PSB-28 (2-4)	PSB-28 (10-12)	PSB-29 (2-3.5)
Location Identification and Sample Interval (Feet below ground surface)			PSB-27 (7.5-9.5)	PSB-28 (2-4)	PSB-28 (10-12)	PSB-29 (2-3.5)
Laboratory Sample Identification			A8E31803	A8E31805	A8E31806	RSE0967-04
Date Collected			11/10/2008	11/10/2008	11/10/2008	5/27/2009
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**16**	**390**	**7.8**	<21
Gasoline Range Organics	450	150	**130**	**470**	**52**	<0.22
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		PSB-27 (7.5-9.5)	PSB-28 (2-4)	PSB-28 (10-12)	PSB-29 (2-3.5)
	Laboratory Sample Identification		A8E31803	A8E31805	A8E31806	RSE0967-04
	Date Collected		11/10/2008	11/10/2008	11/10/2008	5/27/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		PSB-30 (2-4)	PSB-30 (5-7)	PSB-30 (7-8.5)	PSB-31 (2-4)	PSB-32 (2-4)
	Laboratory Sample Identification		RSE1027-01	RSE1027-02	RSE1027-03	RSE1027-04	RSE1027-05
	Date Collected		5/28/2009	5/28/2009	5/28/2009	5/28/2009	5/28/2009
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	<20	<20	**590D**	**570D**	**430D**
Gasoline Range Organics	450	150	<0.24	<0.28	**150D**	**380D**	**86D**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		PSB-30 (2-4)	PSB-30 (5-7)	PSB-30 (7-8.5)	PSB-31 (2-4)	PSB-32 (2-4)
	Laboratory Sample Identification		RSE1027-01	RSE1027-02	RSE1027-03	RSE1027-04	RSE1027-05
	Date Collected		5/28/2009	5/28/2009	5/28/2009	5/28/2009	5/28/2009
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	PSB-33 (2-4)	PSB-34 (2-4)	PSB-35 (2-4)	PSB-36 (2-4)	PSB-36 (5-7)
Location Identification and Sample Interval (Feet below ground surface)			PSB-33 (2-4)	PSB-34 (2-4)	PSB-35 (2-4)	PSB-36 (2-4)	PSB-36 (5-7)
Laboratory Sample Identification			RSE1059-01	RSE1059-02	RSE0911-01	RSE0967-01	RSE0967-02
Date Collected			5/29/2009	5/29/2009	5/26/2009	5/27/2009	5/27/2009
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**2800D**	**99**	**39**	**410D**	**460D**
Gasoline Range Organics	450	150	**51D**	**310D**	**41D**	**22D**	**22D**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		PSB-33 (2-4)	PSB-34 (2-4)	PSB-35 (2-4)	PSB-36 (2-4)	PSB-36 (5-7)
	Laboratory Sample Identification		RSE1059-01	RSE1059-02	RSE0911-01	RSE0967-01	RSE0967-02
	Date Collected		5/29/2009	5/29/2009	5/26/2009	5/27/2009	5/27/2009
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**PSB-36 (8-10)**	**RB-01**	**RB-02**	**RB-03**	**RB-04**
	Laboratory Sample Identification		**RSE0967-03**	**A7C51510**	**A7C51509**	**A7C51508/360-13221-1**	**A7C51507**
	Date Collected		**5/27/2009**	**10/29/2007**	**10/29/2007**	**10/29/2007**	**10/29/2007**
Analyte/Methods (Units)							
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**500D**	**17**	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	**31D**	<5	<5	**1.6J**	<5
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	<0.38	n/a
Acenaphthene	300	300	n/a	n/a	n/a	<0.38	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	<0.38	n/a
Anthracene	13	13	n/a	n/a	n/a	<0.38	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	<0.38	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	<0.38	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	<0.38	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	<0.38	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	<0.38	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	**21**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	**21**	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	**32**	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	**9.1**	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	<0.38	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	<0.38	n/a
Fluoranthene	220	220	n/a	n/a	n/a	<0.38	n/a
Fluorene	270	270	n/a	n/a	n/a	<0.38	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	<0.38	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	<0.38	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	<0.38	n/a
Pyrene	140	140	n/a	n/a	n/a	<0.38	n/a
Total EPH	NA	NA	n/a	n/a	n/a	**61**	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		PSB-36 (8-10)	RB-01	RB-02	RB-03	RB-04
	Laboratory Sample Identification		RSE0967-03	A7C51510	A7C51509	A7C51508/360-13221-1	A7C51507
	Date Collected		5/27/2009	10/29/2007	10/29/2007	10/29/2007	10/29/2007
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	*<0.24*	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	<4.8	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	<4.8	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	<4.8	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	<4.8	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	<4.8	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	<0.24	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	<0.048	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	*<0.48*	n/a
Napthalene	325	3.52	n/a	n/a	n/a	<0.48	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	<0.24	n/a
Toluene	1000	40	n/a	n/a	n/a	<0.24	n/a
Total VPH	NA	NA	n/a	n/a	n/a	<4.8	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		RB-05	STFPSB-02 (2-4)	STFPSB-02 (5-7)
	Laboratory Sample Identification		A7C51506	A8E40001	A8E40002
	Date Collected		10/29/2007	11/11/2008	11/11/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	<3.3	**27000**	**18**
Gasoline Range Organics	450	150	**1.3J**	**2900**	**2.6J**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		RB-05	STFPSB-02 (2-4)	STFPSB-02 (5-7)
	Laboratory Sample Identification		A7C51506	A8E40001	A8E40002
	Date Collected		10/29/2007	11/11/2008	11/11/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-01 (0-2)**	**SB-02 (0-2)**	**SB-02 (8-9.5)**	**SB-02 (10-12)**	**SB-03 (0-2)**
	Laboratory Sample Identification		**A7D57807**	**A7D65311**	**A7D65312**	**A7D65313**	**A7D57811**
	Date Collected		**11/20/2007**	**11/26/2007**	**11/26/2007**	**11/26/2007**	**11/20/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**390**	**63**	**82**	**250**	**120**
Gasoline Range Organics	450	150	**370**	<5	**510**	**2000**	**58**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-01 (0-2)**	**SB-02 (0-2)**	**SB-02 (8-9.5)**	**SB-02 (10-12)**	**SB-03 (0-2)**
	Laboratory Sample Identification		**A7D57807**	**A7D65311**	**A7D65312**	**A7D65313**	**A7D57811**
	Date Collected		**11/20/2007**	**11/26/2007**	**11/26/2007**	**11/26/2007**	**11/20/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	SB-03 (6-8)	SB-04 (0-2)	SB-04 (6-8)	SB-04 (14-16)	SB-05 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			SB-03 (6-8)	SB-04 (0-2)	SB-04 (6-8)	SB-04 (14-16)	SB-05 (0-2)
Laboratory Sample Identification			A7D57805	A7D65301	A7D65302	A7D65303	A7D57804
Date Collected			11/20/2007	11/26/2007	11/26/2007	11/26/2007	11/20/2007
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**1100**	**310**	**130J**	**140**	**94**
Gasoline Range Organics	450	150	**1100**	**1.5J**	**460**	**870**	**5.3**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**SB-03 (6-8)**	**SB-04 (0-2)**	**SB-04 (6-8)**	**SB-04 (14-16)**	**SB-05 (0-2)**
	Laboratory Sample Identification		**A7D57805**	**A7D65301**	**A7D65302**	**A7D65303**	**A7D57804**
	Date Collected		**11/20/2007**	**11/26/2007**	**11/26/2007**	**11/26/2007**	**11/20/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		SB-05 (10-12)	SB-06 (0-2)	SB-06 (8-9.5)	SB-06 (9.5-11)	SB-07 (0-2)
	Laboratory Sample Identification		A7D57806	A7D65308	A7D65309	A7D65310	A7D65307
	Date Collected		11/20/2007	11/26/2007	11/26/2007	11/26/2007	11/26/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**160**	**84**	**1000**	**460**	**120**
Gasoline Range Organics	450	150	**410**	<5	**1200**	**830**	**18**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		SB-05 (10-12)	SB-06 (0-2)	SB-06 (8-9.5)	SB-06 (9.5-11)	SB-07 (0-2)
	Laboratory Sample Identification		A7D57806	A7D65308	A7D65309	A7D65310	A7D65307
	Date Collected		11/20/2007	11/26/2007	11/26/2007	11/26/2007	11/26/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		SB-08 (0-2)	SB-08 (6-8)	SB-08 (12-14)	SB-09 (0-2)	SB-09 (2-4)
	Laboratory Sample Identification		A7D65304	A7D65305	A7D65306	A7D72010	A7D72011
	Date Collected		11/26/2007	11/26/2007	11/26/2007	11/27/2007	11/27/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**970**	**200**	**600J**	**34000**	**3100**
Gasoline Range Organics	450	150	**310**	**410**	**1800**	**1300**	**970**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		SB-08 (0-2)	SB-08 (6-8)	SB-08 (12-14)	SB-09 (0-2)	SB-09 (2-4)
	Laboratory Sample Identification		A7D65304	A7D65305	A7D65306	A7D72010	A7D72011
	Date Collected		11/26/2007	11/26/2007	11/26/2007	11/27/2007	11/27/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		SB-09 (15-17)	SB-10 (0-2)	SB-10 (8-10)	SB-10 (15-17)	SB-11 (0-2)
	Laboratory Sample Identification		A7D72012	A7D72013	A7D72014	A7D72015	A7D78401
	Date Collected		11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/28/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**240**	**13**	**590**	**70**	**770**
Gasoline Range Organics	450	150	**170**	**7.1**	**2500**	**560**	**320**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**SB-09 (15-17)**	**SB-10 (0-2)**	**SB-10 (8-10)**	**SB-10 (15-17)**	**SB-11 (0-2)**
	Laboratory Sample Identification		**A7D72012**	**A7D72013**	**A7D72014**	**A7D72015**	**A7D78401**
	Date Collected		**11/27/2007**	**11/27/2007**	**11/27/2007**	**11/27/2007**	**11/28/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	SB-11 (6-8)	SB-11 (14-16)	SB-12 (0-2)	SB-13 (0-2)	SB-14 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			SB-11 (6-8)	SB-11 (14-16)	SB-12 (0-2)	SB-13 (0-2)	SB-14 (0-2)
Laboratory Sample Identification			A7D78402/360-13801-5	A7D78403	A7D72202	A7D72016	A7D72205
Date Collected			11/28/2007	11/28/2007	11/27/2007	11/27/2007	11/27/2007
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**49**	**300**	**1100**	**1800**	**3800**
Gasoline Range Organics	450	150	**380**	**730**	**55**	**140**	**56**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	**4.9**	n/a	n/a	n/a	n/a
Acenaphthene	300	300	<1.2	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	<1.2	n/a	n/a	n/a	n/a
Anthracene	13	13	<1.2	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	<1.2	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	<1.2	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	<1.2	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<1.2	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	<1.2	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**78**	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**85**	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	<12	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	**260**	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	<1.2	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	<1.2	n/a	n/a	n/a	n/a
Fluoranthene	220	220	<1.2	n/a	n/a	n/a	n/a
Fluorene	270	270	<1.2	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	*<1.2*	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	**2.4**	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	<1.2	n/a	n/a	n/a	n/a
Pyrene	140	140	<1.2	n/a	n/a	n/a	n/a
Total EPH	NA	NA	**340**	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-11 (6-8)	SB-11 (14-16)	SB-12 (0-2)	SB-13 (0-2)	SB-14 (0-2)
	Laboratory Sample Identification		A7D78402/360-13801-5	A7D78403	A7D72202	A7D72016	A7D72205
	Date Collected		11/28/2007	11/28/2007	11/27/2007	11/27/2007	11/27/2007
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario					
MADEPVPH (mg/kg)							
Benzene	17	0.08	*<2.3*	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	**140**	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	**140**	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	**70**	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<45	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**100**	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	<2.3	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	<0.45	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<4.5*	n/a	n/a	n/a	n/a
Napthalene	325	3.52	*<4.5*	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	<2.3	n/a	n/a	n/a	n/a
Toluene	1000	40	<2.3	n/a	n/a	n/a	n/a
Total VPH	NA	NA	**210**	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		SB-14-50 (DUP of SB-14 (0-2))	SB-14 (8-11)	SB-14 (11-13)	SB-15 (0-2)	SB-16 (0-2)
	Laboratory Sample Identification		A7D72208	A7D72206	A7D72207	A7D72201	A7D72017
	Date Collected		11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**1200**	**370**	**880**	**1700**	**930**
Gasoline Range Organics	450	150	**55**	**180**	**260**	**84**	**44**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-14-50 (DUP of SB-14 (0-2))	SB-14 (8-11)	SB-14 (11-13)	SB-15 (0-2)	SB-16 (0-2)
	Laboratory Sample Identification		A7D72208	A7D72206	A7D72207	A7D72201	A7D72017
	Date Collected		11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-16 (10-12)	SB-17 (0-2)	SB-17 (14-15)	SB-18 (0-2)
	Laboratory Sample Identification		A7D72018	A7D72203	A7D72204	A7D85309/360-13820-5
	Date Collected		11/27/2007	11/27/2007	11/27/2007	11/29/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**380J**	**3400**	**3000**	**2600**
Gasoline Range Organics	450	150	**930**	**1500**	**980**	**990**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	**8.1**
Acenaphthene	300	300	n/a	n/a	n/a	<3.8
Acenaphthylene	NA	NA	n/a	n/a	n/a	<3.8
Anthracene	13	13	n/a	n/a	n/a	<3.8
Benzo(a)anthracene	26	35	n/a	n/a	n/a	<3.8
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	*<3.8*
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	<3.8
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	<3.8
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	<3.8
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	**570**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	**580**
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	**410**
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	**700**
Chrysene	6.4	6.4	n/a	n/a	n/a	<3.8
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	<3.8
Fluoranthene	220	220	n/a	n/a	n/a	<3.8
Fluorene	270	270	n/a	n/a	n/a	<3.8
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	*<3.8*
Naphthalene	325	3.52	n/a	n/a	n/a	*<3.8*
Phenanthrene	NA	NA	n/a	n/a	n/a	<3.8
Pyrene	140	140	n/a	n/a	n/a	<3.8
Total EPH	NA	NA	n/a	n/a	n/a	**1700**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-16 (10-12)	SB-17 (0-2)	SB-17 (14-15)	SB-18 (0-2)
	Laboratory Sample Identification		A7D72018	A7D72203	A7D72204	A7D85309/360-13820-5
	Date Collected		11/27/2007	11/27/2007	11/27/2007	11/29/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	*<4.5*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	**110**
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	**110**
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	**290**
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	<90
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	**330**
Ethylbenzene	650	55	n/a	n/a	n/a	<4.5
m+p-Xylenes	700	700	n/a	n/a	n/a	<0.9
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	*<9*
Napthalene	325	3.52	n/a	n/a	n/a	*<9*
o-Xylenes	NA	NA	n/a	n/a	n/a	<4.5
Toluene	1000	40	n/a	n/a	n/a	<4.5
Total VPH	NA	NA	n/a	n/a	n/a	**400**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		SB-18 (2-4)	SB-18 (10-12)	SB-19 (0-2)	SB-19 (2-4)	SB-19 (12-13)
	Laboratory Sample Identification		A7D85310/360-13820-6	A7D85311	A7D85306	A7D85307	A7D85308
	Date Collected		11/29/2007	11/29/2007	11/29/2007	11/29/2007	11/29/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**5700**	**210**	**1200**	**2200**	**4300**
Gasoline Range Organics	450	150	**36**	**64**	**1900**	**180**	**1000**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	**20**	n/a	n/a	n/a	n/a
Acenaphthene	300	300	**72**	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	<13	n/a	n/a	n/a	n/a
Anthracene	13	13	<13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	<13	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	*<13*	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	<13	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<13	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	*<13*	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**1100**	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**1200**	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	**1000**	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	**1200**	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	*<13*	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	*<13*	n/a	n/a	n/a	n/a
Fluoranthene	220	220	<13	n/a	n/a	n/a	n/a
Fluorene	270	270	<13	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	*<13*	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	*<13*	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	<13	n/a	n/a	n/a	n/a
Pyrene	140	140	<13	n/a	n/a	n/a	n/a
Total EPH	NA	NA	**3300**	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-18 (2-4)**	**SB-18 (10-12)**	**SB-19 (0-2)**	**SB-19 (2-4)**	**SB-19 (12-13)**
	Laboratory Sample Identification		**A7D85310/360-13820-6**	**A7D85311**	**A7D85306**	**A7D85307**	**A7D85308**
	Date Collected		**11/29/2007**	**11/29/2007**	**11/29/2007**	**11/29/2007**	**11/29/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	*<1.3*	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	<26	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	<26	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	**41**	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<26	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**49**	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	<1.3	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	<0.26	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<2.6*	n/a	n/a	n/a	n/a
Napthalene	325	3.52	<2.6	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	<1.3	n/a	n/a	n/a	n/a
Toluene	1000	40	<1.3	n/a	n/a	n/a	n/a
Total VPH	NA	NA	**41**	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		SB-20 (0-2)	SB-20 (8-10)	SB-21 (0-2)
	Laboratory Sample Identification		A7D78404/360-13801-6	A7D78405	A7D78407/360-13801-7
	Date Collected		11/28/2007	11/28/2007	11/28/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**230**	**410**	**210**
Gasoline Range Organics	450	150	**2600**	**580**	**310**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	<1.1	n/a	<2.1
Acenaphthene	300	300	<1.1	n/a	<2.1
Acenaphthylene	NA	NA	<1.1	n/a	<2.1
Anthracene	13	13	<1.1	n/a	<2.1
Benzo(a)anthracene	26	35	<1.1	n/a	<2.1
Benzo(a)pyrene	2.6	16	<1.1	n/a	<2.1
Benzo(b)fluoranthene	19	19	<1.1	n/a	<2.1
Benzo(g,h,i)perylene	NA	NA	<1.1	n/a	<2.1
Benzo(k)fluoranthene	10	10	<1.1	n/a	<2.1
C11-C22 Aromatics (Adjusted)	NA	NA	**24**	n/a	**290**
C11-C22 Aromatics (unadjusted)	NA	NA	**24**	n/a	**300**
C19-C36 Aliphatics	NA	NA	**17**	n/a	**460**
C9-C18 Aliphatics	NA	NA	**160**	n/a	**290**
Chrysene	6.4	6.4	<1.1	n/a	<2.1
Dibenz(a,h)anthracene	2.6	11	<1.1	n/a	<2.1
Fluoranthene	220	220	<1.1	n/a	**5.2**
Fluorene	270	270	<1.1	n/a	<2.1
Indeno(1,2,3-cd)pyrene	0.76	0.76	*<1.1*	n/a	*<2.1*
Naphthalene	325	3.52	<1.1	n/a	<2.1
Phenanthrene	NA	NA	<1.1	n/a	<2.1
Pyrene	140	140	<1.1	n/a	<2.1
Total EPH	NA	NA	**200**	n/a	**1000**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-20 (0-2)	SB-20 (8-10)	SB-21 (0-2)
	Laboratory Sample Identification		A7D78404/360-13801-6	A7D78405	A7D78407/360-13801-7
	Date Collected		11/28/2007	11/28/2007	11/28/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario			
MADEPVPH (mg/kg)					
Benzene	17	0.08	*<4.4*	n/a	**6**
C5-C8 Aliphatics (adjusted)	NA	NA	**540**	n/a	**27**
C5-C8 Aliphatics (unadjusted)	NA	NA	**540**	n/a	**33**
C9-C10 Aromatics	NA	NA	**130**	n/a	**42**
C9-C12 Aliphatics (adjusted)	NA	NA	**140**	n/a	<5.5
C9-C12 Aliphatics (unadjusted)	NA	NA	**270**	n/a	**47**
Ethylbenzene	650	55	<4.4	n/a	**6.1**
m+p-Xylenes	700	700	<0.89	n/a	<0.055
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<8.9*	n/a	*<0.55*
Napthalene	325	3.52	*<8.9*	n/a	**1.3**
o-Xylenes	NA	NA	<4.4	n/a	<0.27
Toluene	1000	40	<4.4	n/a	<0.27
Total VPH	NA	NA	**810**	n/a	**69**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		SB-21 (2-4)	SB-22 (0-2)	SB-22 (2-4)	SB-22 (16-18)
	Laboratory Sample Identification		A7D78408/360-13801-8	A7D85312	A7D85313/360-13820-7	A7D85314
	Date Collected		11/28/2007	11/29/2007	11/29/2007	11/29/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**56**	**3500**	**4300**	**1000**
Gasoline Range Organics	450	150	**75**	**1400**	**2100**	**350**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	**6.4**	n/a	**14**	n/a
Acenaphthene	300	300	<1.3	n/a	<13	n/a
Acenaphthylene	NA	NA	<1.3	n/a	<13	n/a
Anthracene	13	13	<1.3	n/a	<13	n/a
Benzo(a)anthracene	26	35	<1.3	n/a	<13	n/a
Benzo(a)pyrene	2.6	16	<1.3	n/a	*<13*	n/a
Benzo(b)fluoranthene	19	19	<1.3	n/a	<13	n/a
Benzo(g,h,i)perylene	NA	NA	<1.3	n/a	<13	n/a
Benzo(k)fluoranthene	10	10	<1.3	n/a	*<13*	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**200**	n/a	**1200**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**200**	n/a	**1200**	n/a
C19-C36 Aliphatics	NA	NA	**26**	n/a	**490**	n/a
C9-C18 Aliphatics	NA	NA	**370**	n/a	**1700**	n/a
Chrysene	6.4	6.4	<1.3	n/a	*<13*	n/a
Dibenz(a,h)anthracene	2.6	11	<1.3	n/a	*<13*	n/a
Fluoranthene	220	220	<1.3	n/a	<13	n/a
Fluorene	270	270	<1.3	n/a	<13	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	*<1.3*	n/a	*<13*	n/a
Naphthalene	325	3.52	<1.3	n/a	*<13*	n/a
Phenanthrene	NA	NA	<1.3	n/a	<13	n/a
Pyrene	140	140	<1.3	n/a	<13	n/a
Total EPH	NA	NA	**590**	n/a	**3300**	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-21 (2-4)	SB-22 (0-2)	SB-22 (2-4)	SB-22 (16-18)
	Laboratory Sample Identification		A7D78408/360-13801-8	A7D85312	A7D85313/360-13820-7	A7D85314
	Date Collected		11/28/2007	11/29/2007	11/29/2007	11/29/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	**13**	n/a	*<2.7*	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	<110	n/a	<55	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	<110	n/a	<55	n/a
C9-C10 Aromatics	NA	NA	**380**	n/a	<55	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<110	n/a	**65**	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**340**	n/a	**70**	n/a
Ethylbenzene	650	55	**8.8**	n/a	<2.7	n/a
m+p-Xylenes	700	700	<1.1	n/a	<0.55	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<11*	n/a	*<5.5*	n/a
Napthalene	325	3.52	*<11*	n/a	*<5.5*	n/a
o-Xylenes	NA	NA	<5.6	n/a	<2.7	n/a
Toluene	1000	40	<5.6	n/a	<2.7	n/a
Total VPH	NA	NA	**380**	n/a	**65**	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	SB-23 (0-2)	SB-23 (8-10)	SB-23 (12-14)	SB-24 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			SB-23 (0-2)	SB-23 (8-10)	SB-23 (12-14)	SB-24 (0-2)
Laboratory Sample Identification			A7D85303/360-13820-9	A7D85304/360-13820-10	A7D85305	A7D78406
Date Collected			11/29/2007	11/29/2007	11/29/2007	11/28/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**4000**	**67**	**140**	**9.8**
Gasoline Range Organics	450	150	**160**	**24**	**71**	**120**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	**69**	**0.43**	n/a	n/a
Acenaphthene	300	300	**64**	**0.48**	n/a	n/a
Acenaphthylene	NA	NA	**42**	<0.4	n/a	n/a
Anthracene	13	13	<12	<0.4	n/a	n/a
Benzo(a)anthracene	26	35	<12	<0.4	n/a	n/a
Benzo(a)pyrene	2.6	16	*<12*	<0.4	n/a	n/a
Benzo(b)fluoranthene	19	19	<12	<0.4	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<12	<0.4	n/a	n/a
Benzo(k)fluoranthene	10	10	*<12*	<0.4	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**9600**	**90**	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**10000**	**92**	n/a	n/a
C19-C36 Aliphatics	NA	NA	**4300**	**44**	n/a	n/a
C9-C18 Aliphatics	NA	NA	**5000**	**42**	n/a	n/a
Chrysene	6.4	6.4	*<12*	<0.4	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	*<12*	<0.4	n/a	n/a
Fluoranthene	220	220	<12	<0.4	n/a	n/a
Fluorene	270	270	**89**	**0.73**	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	*<12*	<0.4	n/a	n/a
Naphthalene	325	3.52	*<12*	<0.4	n/a	n/a
Phenanthrene	NA	NA	**130**	<0.4	n/a	n/a
Pyrene	140	140	**29**	<0.4	n/a	n/a
Total EPH	NA	NA	**19000**	**180**	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-23 (0-2)	SB-23 (8-10)	SB-23 (12-14)	SB-24 (0-2)
	Laboratory Sample Identification		A7D85303/360-13820-9	A7D85304/360-13820-10	A7D85305	A7D78406
	Date Collected		11/29/2007	11/29/2007	11/29/2007	11/28/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	*<4.5*	*<0.22*	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	<91	**6.6**	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	<91	**6.6**	n/a	n/a
C9-C10 Aromatics	NA	NA	**170**	**17**	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<91	<4.5	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**170**	**17**	n/a	n/a
Ethylbenzene	650	55	<4.5	<0.22	n/a	n/a
m+p-Xylenes	700	700	<0.91	<0.045	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<9.1*	*<0.45*	n/a	n/a
Napthalene	325	3.52	*<9.1*	<0.45	n/a	n/a
o-Xylenes	NA	NA	<4.5	<0.22	n/a	n/a
Toluene	1000	40	<4.5	<0.22	n/a	n/a
Total VPH	NA	NA	**170**	**24**	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		SB-25 (0-2)	SB-25 (4-6)	SB-26 (0-2)
	Laboratory Sample Identification		A7D85315	A7D85316/360-13820-8	A7D78409/360-13801-1
	Date Collected		11/29/2007	11/29/2007	11/28/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**800**	**5700**	**3500**
Gasoline Range Organics	450	150	**410**	**1000**	**2100**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	**20**	<1.1
Acenaphthene	300	300	n/a	<12	<1.1
Acenaphthylene	NA	NA	n/a	<12	<1.1
Anthracene	13	13	n/a	<12	<1.1
Benzo(a)anthracene	26	35	n/a	<12	<1.1
Benzo(a)pyrene	2.6	16	n/a	*<12*	<1.1
Benzo(b)fluoranthene	19	19	n/a	<12	<1.1
Benzo(g,h,i)perylene	NA	NA	n/a	<12	<1.1
Benzo(k)fluoranthene	10	10	n/a	*<12*	<1.1
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	**1100**	**26**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	**1200**	**27**
C19-C36 Aliphatics	NA	NA	n/a	**1000**	**31**
C9-C18 Aliphatics	NA	NA	n/a	**1000**	**230**
Chrysene	6.4	6.4	n/a	*<12*	<1.1
Dibenz(a,h)anthracene	2.6	11	n/a	*<12*	<1.1
Fluoranthene	220	220	n/a	<12	<1.1
Fluorene	270	270	n/a	<12	<1.1
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	*<12*	*<1.1*
Naphthalene	325	3.52	n/a	**13**	<1.1
Phenanthrene	NA	NA	n/a	<12	**1.1**
Pyrene	140	140	n/a	<12	<1.1
Total EPH	NA	NA	n/a	**3200**	**290**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-25 (0-2)	SB-25 (4-6)	SB-26 (0-2)
	Laboratory Sample Identification		A7D85315	A7D85316/360-13820-8	A7D78409/360-13801-1
	Date Collected		11/29/2007	11/29/2007	11/28/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	*<3*	*<1.3*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	<60	**43**
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	<60	**43**
C9-C10 Aromatics	NA	NA	n/a	<60	**96**
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	**65**	<26
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	**75**	**99**
Ethylbenzene	650	55	n/a	<3	<1.3
m+p-Xylenes	700	700	n/a	<0.6	<0.26
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	**8**	*<2.6*
Napthalene	325	3.52	n/a	*<6*	*<2.6*
o-Xylenes	NA	NA	n/a	<3	<1.3
Toluene	1000	40	n/a	<3	<1.3
Total VPH	NA	NA	n/a	**65**	**140**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	SB-26 (5-8)	SB-27 (0-2)	SB-27 (5-7)	SB-28 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			SB-26 (5-8)	SB-27 (0-2)	SB-27 (5-7)	SB-28 (0-2)
Laboratory Sample Identification			A7D78410/360-13801-2	A7D85301	A7D85302	A7D78411
Date Collected			11/28/2007	11/29/2007	11/29/2007	11/28/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**130**	**1900**	**460**	<3.3
Gasoline Range Organics	450	150	**9400J**	**4400**	**220**	**1.1J**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	<13	n/a	n/a	n/a
Acenaphthene	300	300	<13	n/a	n/a	n/a
Acenaphthylene	NA	NA	<13	n/a	n/a	n/a
Anthracene	13	13	<13	n/a	n/a	n/a
Benzo(a)anthracene	26	35	<13	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	*<13*	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	<13	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<13	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	*<13*	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**2000**	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**2000**	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	**1200**	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	**1200**	n/a	n/a	n/a
Chrysene	6.4	6.4	*<13*	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	*<13*	n/a	n/a	n/a
Fluoranthene	220	220	<13	n/a	n/a	n/a
Fluorene	270	270	<13	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	*<13*	n/a	n/a	n/a
Naphthalene	325	3.52	*<13*	n/a	n/a	n/a
Phenanthrene	NA	NA	<13	n/a	n/a	n/a
Pyrene	140	140	**15**	n/a	n/a	n/a
Total EPH	NA	NA	**4400**	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-26 (5-8)	SB-27 (0-2)	SB-27 (5-7)	SB-28 (0-2)
	Laboratory Sample Identification		A7D78410/360-13801-2	A7D85301	A7D85302	A7D78411
	Date Collected		11/28/2007	11/29/2007	11/29/2007	11/28/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	*<2.6*	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	**64**	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	**64**	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	**92**	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<52	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**93**	n/a	n/a	n/a
Ethylbenzene	650	55	<2.6	n/a	n/a	n/a
m+p-Xylenes	700	700	<0.52	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<5.2*	n/a	n/a	n/a
Napthalene	325	3.52	*<5.2*	n/a	n/a	n/a
o-Xylenes	NA	NA	<2.6	n/a	n/a	n/a
Toluene	1000	40	<2.6	n/a	n/a	n/a
Total VPH	NA	NA	**160**	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	SB-29 (0-2)	SB-29 (6-8)	SB-29 (8-10)	SB-30 (1-3)
Location Identification and Sample Interval (Feet below ground surface)			SB-29 (0-2)	SB-29 (6-8)	SB-29 (8-10)	SB-30 (1-3)
Laboratory Sample Identification			A7D87501	A7D87502	A7D87503	A7D78413/360-13801-3
Date Collected			11/30/2007	11/30/2008	11/30/2007	11/28/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**280J**	**410**	**180**	**90**
Gasoline Range Organics	450	150	**22**	**57**	**620**	**2.4J**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	<0.36
Acenaphthene	300	300	n/a	n/a	n/a	<0.36
Acenaphthylene	NA	NA	n/a	n/a	n/a	<0.36
Anthracene	13	13	n/a	n/a	n/a	<0.36
Benzo(a)anthracene	26	35	n/a	n/a	n/a	<0.36
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	<0.36
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	<0.36
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	<0.36
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	<0.36
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	**42**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	**42**
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	**25**
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	**15**
Chrysene	6.4	6.4	n/a	n/a	n/a	<0.36
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	<0.36
Fluoranthene	220	220	n/a	n/a	n/a	<0.36
Fluorene	270	270	n/a	n/a	n/a	<0.36
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	<0.36
Naphthalene	325	3.52	n/a	n/a	n/a	<0.36
Phenanthrene	NA	NA	n/a	n/a	n/a	<0.36
Pyrene	140	140	n/a	n/a	n/a	<0.36
Total EPH	NA	NA	n/a	n/a	n/a	**82**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-29 (0-2)	SB-29 (6-8)	SB-29 (8-10)	SB-30 (1-3)
	Laboratory Sample Identification		A7D87501	A7D87502	A7D87503	A7D78413/360-13801-3
	Date Collected		11/30/2007	11/30/2008	11/30/2007	11/28/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	*<0.29*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	<5.7
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	<5.7
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	<5.7
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	<5.7
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	<5.7
Ethylbenzene	650	55	n/a	n/a	n/a	<0.29
m+p-Xylenes	700	700	n/a	n/a	n/a	<0.057
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	*<0.57*
Napthalene	325	3.52	n/a	n/a	n/a	<0.57
o-Xylenes	NA	NA	n/a	n/a	n/a	<0.29
Toluene	1000	40	n/a	n/a	n/a	<0.29
Total VPH	NA	NA	n/a	n/a	n/a	<5.7

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		SB-30 (5-7)	SB-30 (7-9)	SB-31 (0-2)	SB-32 (0-2)
	Laboratory Sample Identification		A7D78414/360-13801-4	A7D78415	A7D78412	A7D87504/360-13852-1
	Date Collected		11/28/2007	11/28/2007	11/28/2007	11/30/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	**38**	**840J**	**140**
Gasoline Range Organics	450	150	**84**	**59**	**26**	**110**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	**0.44**	n/a	n/a	<0.41
Acenaphthene	300	300	<0.4	n/a	n/a	<0.41
Acenaphthylene	NA	NA	<0.4	n/a	n/a	<0.41
Anthracene	13	13	<0.4	n/a	n/a	<0.41
Benzo(a)anthracene	26	35	<0.4	n/a	n/a	<0.41
Benzo(a)pyrene	2.6	16	<0.4	n/a	n/a	<0.41
Benzo(b)fluoranthene	19	19	<0.4	n/a	n/a	<0.41
Benzo(g,h,i)perylene	NA	NA	<0.4	n/a	n/a	<0.41UJ
Benzo(k)fluoranthene	10	10	<0.4	n/a	n/a	<0.41
C11-C22 Aromatics (Adjusted)	NA	NA	**86**	n/a	n/a	**57**
C11-C22 Aromatics (unadjusted)	NA	NA	**87**	n/a	n/a	**57**
C19-C36 Aliphatics	NA	NA	**89**	n/a	n/a	**79**
C9-C18 Aliphatics	NA	NA	**60**	n/a	n/a	**110**
Chrysene	6.4	6.4	<0.4	n/a	n/a	<0.41
Dibenz(a,h)anthracene	2.6	11	<0.4	n/a	n/a	<0.41
Fluoranthene	220	220	<0.4	n/a	n/a	<0.41
Fluorene	270	270	<0.4	n/a	n/a	<0.41
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.4	n/a	n/a	<0.41
Naphthalene	325	3.52	<0.4	n/a	n/a	<0.41
Phenanthrene	NA	NA	<0.4	n/a	n/a	<0.41
Pyrene	140	140	<0.4	n/a	n/a	<0.41
Total EPH	NA	NA	**240**	n/a	n/a	**240**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-30 (5-7)	SB-30 (7-9)	SB-31 (0-2)	SB-32 (0-2)
	Laboratory Sample Identification		A7D78414/360-13801-4	A7D78415	A7D78412	A7D87504/360-13852-1
	Date Collected		11/28/2007	11/28/2007	11/28/2007	11/30/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	*<1.1*	n/a	n/a	*<0.29*
C5-C8 Aliphatics (adjusted)	NA	NA	<22	n/a	n/a	**15**
C5-C8 Aliphatics (unadjusted)	NA	NA	<22	n/a	n/a	**15**
C9-C10 Aromatics	NA	NA	**40**	n/a	n/a	**52**
C9-C12 Aliphatics (adjusted)	NA	NA	<22	n/a	n/a	**9.9**
C9-C12 Aliphatics (unadjusted)	NA	NA	**50**	n/a	n/a	**61**
Ethylbenzene	650	55	<1.1	n/a	n/a	<0.29
m+p-Xylenes	700	700	<0.22	n/a	n/a	<0.058
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<2.2*	n/a	n/a	*<0.58*
Napthalene	325	3.52	<2.2	n/a	n/a	**0.59**
o-Xylenes	NA	NA	<1.1	n/a	n/a	<0.29
Toluene	1000	40	<1.1	n/a	n/a	<0.29
Total VPH	NA	NA	**40**	n/a	n/a	**76**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		SB-32 (4-6)	SB-33 (0-2)	SB-33 (2-4)
	Laboratory Sample Identification		A7D87505/360-13852-2	A7D87509/360-13852-5	A7D87510/360-13852-6
	Date Collected		11/30/2007	11/30/2007	11/30/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**810**	<3.3	<3.3
Gasoline Range Organics	450	150	**290**	<5	<5
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	<2.7	<0.43	<0.43
Acenaphthene	300	300	<2.7	<0.43	<0.43
Acenaphthylene	NA	NA	<2.7	<0.43	<0.43
Anthracene	13	13	<2.7	<0.43	<0.43
Benzo(a)anthracene	26	35	<2.7	<0.43	<0.43
Benzo(a)pyrene	2.6	16	<2.7	<0.43	<0.43
Benzo(b)fluoranthene	19	19	<2.7	<0.43	<0.43
Benzo(g,h,i)perylene	NA	NA	<2.7UJ	<0.43UJ	<0.43UJ
Benzo(k)fluoranthene	10	10	<2.7	<0.43	<0.43
C11-C22 Aromatics (Adjusted)	NA	NA	**540**	**12**	**4.5**
C11-C22 Aromatics (unadjusted)	NA	NA	**540**	**12**	**4.5**
C19-C36 Aliphatics	NA	NA	**640**	<4.3	<4.3
C9-C18 Aliphatics	NA	NA	**840**	<4.3	<4.3
Chrysene	6.4	6.4	<2.7	<0.43	<0.43
Dibenz(a,h)anthracene	2.6	11	<2.7	<0.43	<0.43
Fluoranthene	220	220	<2.7	<0.43	<0.43
Fluorene	270	270	<2.7	<0.43	<0.43
Indeno(1,2,3-cd)pyrene	0.76	0.76	<2.7	<0.43	<0.43
Naphthalene	325	3.52	<2.7	<0.43	<0.43
Phenanthrene	NA	NA	<2.7	<0.43	<0.43
Pyrene	140	140	<2.7	<0.43	<0.43
Total EPH	NA	NA	**2000**	**12**	**4.5**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-32 (4-6)**	**SB-33 (0-2)**	**SB-33 (2-4)**
	Laboratory Sample Identification		**A7D87505/360-13852-2**	**A7D87509/360-13852-5**	**A7D87510/360-13852-6**
	Date Collected		**11/30/2007**	**11/30/2007**	**11/30/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	*<0.36*	*<0.28*	*<0.28*
C5-C8 Aliphatics (adjusted)	NA	NA	**74**	<5.5	<5.7
C5-C8 Aliphatics (unadjusted)	NA	NA	**74**	<5.5	<5.7
C9-C10 Aromatics	NA	NA	**150**	<5.5	<5.7
C9-C12 Aliphatics (adjusted)	NA	NA	**38**	<5.5	<5.7
C9-C12 Aliphatics (unadjusted)	NA	NA	**190**	<5.5	<5.7
Ethylbenzene	650	55	<0.36	<0.28	<0.28
m+p-Xylenes	700	700	<0.071	<0.055	<0.057
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<0.71*	*<0.55*	*<0.57*
Napthalene	325	3.52	<0.71	<0.55	<0.57
o-Xylenes	NA	NA	<0.36	<0.28	<0.28
Toluene	1000	40	<0.36	<0.28	<0.28
Total VPH	NA	NA	**270**	<5.5	<5.7

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		SB-34 (0-2)	SB-34 (4-6)	SB-35 (0-2)
	Laboratory Sample Identification		A7D87512/360-13852-8	A7D87511/360-13852-7	A7D87506/360-13852-3
	Date Collected		11/30/2007	11/30/2007	11/30/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**21**	<3.3	**150**
Gasoline Range Organics	450	150	**1.3J**	<5	<5
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	<0.44	<0.42	<0.43
Acenaphthene	300	300	<0.44	<0.42	<0.43
Acenaphthylene	NA	NA	<0.44	<0.42	<0.43
Anthracene	13	13	<0.44	<0.42	<0.43
Benzo(a)anthracene	26	35	<0.44	<0.42	<0.43
Benzo(a)pyrene	2.6	16	<0.44	<0.42	<0.43
Benzo(b)fluoranthene	19	19	<0.44	<0.42	<0.43
Benzo(g,h,i)perylene	NA	NA	0.57J	<0.42UJ	<0.43UJ
Benzo(k)fluoranthene	10	10	<0.44	<0.42	<0.43
C11-C22 Aromatics (Adjusted)	NA	NA	**79**	**4.3**	**340**
C11-C22 Aromatics (unadjusted)	NA	NA	**79**	**4.3**	**340**
C19-C36 Aliphatics	NA	NA	**110**	**5.6**	**340**
C9-C18 Aliphatics	NA	NA	**17**	**8**	**5.3**
Chrysene	6.4	6.4	<0.44	<0.42	**2.8**
Dibenz(a,h)anthracene	2.6	11	<0.44	<0.42	<0.43
Fluoranthene	220	220	<0.44	<0.42	<0.43
Fluorene	270	270	<0.44	<0.42	<0.43
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.44	<0.42	<0.43
Naphthalene	325	3.52	<0.44	<0.42	<0.43
Phenanthrene	NA	NA	<0.44	<0.42	<0.43
Pyrene	140	140	<0.44	<0.42	**2.8**
Total EPH	NA	NA	**210**	**18**	**680**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-34 (0-2)**	**SB-34 (4-6)**	**SB-35 (0-2)**
	Laboratory Sample Identification		**A7D87512/360-13852-8**	**A7D87511/360-13852-7**	**A7D87506/360-13852-3**
	Date Collected		**11/30/2007**	**11/30/2007**	**11/30/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	*<0.28*	*<0.26*	*<0.27*
C5-C8 Aliphatics (adjusted)	NA	NA	<5.6	<5.1	<5.5
C5-C8 Aliphatics (unadjusted)	NA	NA	<5.6	<5.1	<5.5
C9-C10 Aromatics	NA	NA	<5.6	<5.1	<5.5
C9-C12 Aliphatics (adjusted)	NA	NA	<5.6	<5.1	<5.5
C9-C12 Aliphatics (unadjusted)	NA	NA	<5.6	<5.1	<5.5
Ethylbenzene	650	55	<0.28	<0.26	<0.27
m+p-Xylenes	700	700	<0.056	<0.051	<0.055
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<0.56*	*<0.51*	*<0.55*
Napthalene	325	3.52	<0.56	<0.51	<0.55
o-Xylenes	NA	NA	<0.28	<0.26	<0.27
Toluene	1000	40	<0.28	<0.26	<0.27
Total VPH	NA	NA	<5.6	<5.1	<5.5

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-35-50 (DUP of SB-35 (0-2))**	**SB-35 (4-6)**	**SB-36 (0-2)**	**SB-37 (0-2)**
	Laboratory Sample Identification		**A7D87508**	**A7D87507/360-13852-4**	**A7D94304**	**A7D94302**
	Date Collected		**11/30/2007**	**11/30/2007**	**12/3/2007**	**12/3/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**88**	**43**	<3.3	**170**
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	<0.43	n/a	n/a
Acenaphthene	300	300	n/a	<0.43	n/a	n/a
Acenaphthylene	NA	NA	n/a	<0.43	n/a	n/a
Anthracene	13	13	n/a	<0.43	n/a	n/a
Benzo(a)anthracene	26	35	n/a	**0.75**	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	<0.43	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	<0.43	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	<0.43UJ	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	<0.43	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	**290**	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	**300**	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	**97**	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	<4.3	n/a	n/a
Chrysene	6.4	6.4	n/a	**1.5**	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	<0.43	n/a	n/a
Fluoranthene	220	220	n/a	<0.43	n/a	n/a
Fluorene	270	270	n/a	<0.43	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	<0.43	n/a	n/a
Naphthalene	325	3.52	n/a	<0.43	n/a	n/a
Phenanthrene	NA	NA	n/a	<0.43	n/a	n/a
Pyrene	140	140	n/a	**2.6**	n/a	n/a
Total EPH	NA	NA	n/a	**390**	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**SB-35-50 (DUP of SB-35 (0-2))**	**SB-35 (4-6)**	**SB-36 (0-2)**	**SB-37 (0-2)**
	Laboratory Sample Identification		**A7D87508**	**A7D87507/360-13852-4**	**A7D94304**	**A7D94302**
	Date Collected		**11/30/2007**	**11/30/2007**	**12/3/2007**	**12/3/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	*<0.27*	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	<5.5	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	<5.5	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	<5.5	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	<5.5	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	<5.5	n/a	n/a
Ethylbenzene	650	55	n/a	<0.27	n/a	n/a
m+p-Xylenes	700	700	n/a	<0.055	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	*<0.55*	n/a	n/a
Napthalene	325	3.52	n/a	<0.55	n/a	n/a
o-Xylenes	NA	NA	n/a	<0.27	n/a	n/a
Toluene	1000	40	n/a	<0.27	n/a	n/a
Total VPH	NA	NA	n/a	<5.5	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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	Location Identification and Sample Interval (Feet below ground surface)		SB-37 (4-6)	SB-38 (0-2)	TW-01 (0-2)	TW-01 (0-2)	TW-02 (0-2)
	Laboratory Sample Identification		A7D94303	A7D94301	A7D17812	A8020508	A7D32201/360-13565-1
	Date Collected		12/3/2007	12/3/2007	11/12/2007	1/7/2008	11/14/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**760**	**1300J**	<3.3	n/a	**400**
Gasoline Range Organics	450	150	**3400**	<5	<5	<5	**120**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	**2.4**
Acenaphthene	300	300	n/a	n/a	n/a	n/a	<0.42
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	**0.73**
Anthracene	13	13	n/a	n/a	n/a	n/a	<0.42
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	<0.42
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	<0.42
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	<0.42
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	<0.42
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	<0.42
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	**120**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	**120**
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	**31**
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	**210**
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	<0.42
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	<0.42
Fluoranthene	220	220	n/a	n/a	n/a	n/a	<0.42
Fluorene	270	270	n/a	n/a	n/a	n/a	**1**
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	<0.42
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	**0.55**
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	**0.93**
Pyrene	140	140	n/a	n/a	n/a	n/a	<0.42
Total EPH	NA	NA	n/a	n/a	n/a	n/a	**360**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-37 (4-6)	SB-38 (0-2)	TW-01 (0-2)	TW-01 (0-2)	TW-02 (0-2)
	Laboratory Sample Identification		A7D94303	A7D94301	A7D17812	A8020508	A7D32201/360-13565-1
	Date Collected		12/3/2007	12/3/2007	11/12/2007	1/7/2008	11/14/2007
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)]	Soil to GW Pathway[(A)]					
	Non-Residental Scenario	Non-Residental Scenario					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	*<2.8*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	<56
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	<56
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	**68**
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	<56
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	**98**
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	<2.8
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	<0.56
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	*<5.6*
Napthalene	325	3.52	n/a	n/a	n/a	n/a	*<5.6*
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	<2.8
Toluene	1000	40	n/a	n/a	n/a	n/a	<2.8
Total VPH	NA	NA	n/a	n/a	n/a	n/a	**68**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-02 (10-11)	TW-03 (0-2)	DUP-2 (DUP of TW-03 (0-2))
			A7D32202/360-13565-2	A7D57501/360-13676-1	A7D57502/360-13676-2
			11/14/2007	11/20/2007	11/20/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**190**	<3.3	<3.3
Gasoline Range Organics	450	150	**150**	<5	<5
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	**1.2**	<0.41	<0.45
Acenaphthene	300	300	<0.38	<0.41	<0.45
Acenaphthylene	NA	NA	<0.38	<0.41	<0.45
Anthracene	13	13	<0.38	<0.41	<0.45
Benzo(a)anthracene	26	35	<0.38	<0.41	<0.45
Benzo(a)pyrene	2.6	16	<0.38	<0.41	<0.45
Benzo(b)fluoranthene	19	19	<0.38	<0.41	<0.45
Benzo(g,h,i)perylene	NA	NA	<0.38	<0.41	<0.45
Benzo(k)fluoranthene	10	10	<0.38	<0.41	<0.45
C11-C22 Aromatics (Adjusted)	NA	NA	**47**	**4.7**	**14**
C11-C22 Aromatics (unadjusted)	NA	NA	**49**	**4.7**	**14**
C19-C36 Aliphatics	NA	NA	**15**	<4.1	<4.5
C9-C18 Aliphatics	NA	NA	**70**	<4.1	<4.5
Chrysene	6.4	6.4	<0.38	<0.41	<0.45
Dibenz(a,h)anthracene	2.6	11	<0.38	<0.41	<0.45
Fluoranthene	220	220	<0.38	<0.41	<0.45
Fluorene	270	270	<0.38	<0.41	<0.45
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.38	<0.41	<0.45
Naphthalene	325	3.52	**0.42**	<0.41	<0.45
Phenanthrene	NA	NA	**0.43**	<0.41	<0.45
Pyrene	140	140	<0.38	<0.41	<0.45
Total EPH	NA	NA	**130**	**4.7**	**14**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-02 (10-11) A7D32202/360-13565-2 11/14/2007	TW-03 (0-2) A7D57501/360-13676-1 11/20/2007	DUP-2 (DUP of TW-03 (0-2)) A7D57502/360-13676-2 11/20/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	*<1.4*	*<0.31*	*<0.62*
C5-C8 Aliphatics (adjusted)	NA	NA	**71**	<6.1	<12
C5-C8 Aliphatics (unadjusted)	NA	NA	**71**	<6.1	<12
C9-C10 Aromatics	NA	NA	**43**	<6.1	<12
C9-C12 Aliphatics (adjusted)	NA	NA	**31**	<6.1	<12
C9-C12 Aliphatics (unadjusted)	NA	NA	**78**	<6.1	<12
Ethylbenzene	650	55	**1.6**	<0.31	<0.62
m+p-Xylenes	700	700	<0.27	<0.061	<0.12
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<2.7*	*<0.61*	*<1.2*
Napthalene	325	3.52	<2.7	<0.61	<1.2
o-Xylenes	NA	NA	<1.4	<0.31	<0.62
Toluene	1000	40	<1.4	<0.31	<0.62
Total VPH	NA	NA	**150**	<6.1	<12

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TW-03 (15-17)	TW-04 (0-2)	TW-04 (2-4)	TW-05 (0-2)
	Laboratory Sample Identification		A7D57503/360-13676-3	A7D23707	A7D23708	A7D50904
	Date Collected		11/20/2007	11/13/2007	11/13/2007	11/19/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	**5.9**	**10**	**3300**
Gasoline Range Organics	450	150	<5	<5	**580**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	<0.46	n/a	n/a	n/a
Acenaphthene	300	300	<0.46	n/a	n/a	n/a
Acenaphthylene	NA	NA	<0.46	n/a	n/a	n/a
Anthracene	13	13	<0.46	n/a	n/a	n/a
Benzo(a)anthracene	26	35	<0.46	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	<0.46	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	<0.46	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<0.46	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	<0.46	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	<4.6	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	<4.6	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	<4.6	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	<4.6	n/a	n/a	n/a
Chrysene	6.4	6.4	<0.46	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	<0.46	n/a	n/a	n/a
Fluoranthene	220	220	<0.46	n/a	n/a	n/a
Fluorene	270	270	<0.46	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.46	n/a	n/a	n/a
Naphthalene	325	3.52	<0.46	n/a	n/a	n/a
Phenanthrene	NA	NA	<0.46	n/a	n/a	n/a
Pyrene	140	140	<0.46	n/a	n/a	n/a
Total EPH	NA	NA	<4.6	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-03 (15-17)	TW-04 (0-2)	TW-04 (2-4)	TW-05 (0-2)
	Laboratory Sample Identification		A7D57503/360-13676-3	A7D23707	A7D23708	A7D50904
	Date Collected		11/20/2007	11/13/2007	11/13/2007	11/19/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	*<0.38*	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	<7.6	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	<7.6	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	<7.6	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<7.6	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	<7.6	n/a	n/a	n/a
Ethylbenzene	650	55	<0.38	n/a	n/a	n/a
m+p-Xylenes	700	700	**0.41**	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<0.76*	n/a	n/a	n/a
Napthalene	325	3.52	<0.76	n/a	n/a	n/a
o-Xylenes	NA	NA	<0.38	n/a	n/a	n/a
Toluene	1000	40	<0.38	n/a	n/a	n/a
Total VPH	NA	NA	<7.6	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-05 (5-7)**	**TW-06 (0-2)**	**TW-07 (0-2)**	**TW-07 (5-7)**
	Laboratory Sample Identification		**A7D50905**	**A7D23710**	**A7D50902/360-13655-2**	**A7D50903/360-13655-3**
	Date Collected		**11/19/2007**	**11/13/2007**	**11/19/2007**	**11/19/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**89**	<3.3	**55**	<3.3
Gasoline Range Organics	450	150	**250**	**1.2J**	**29**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	<4.1	<0.49
Acenaphthene	300	300	n/a	n/a	<4.1	<0.49
Acenaphthylene	NA	NA	n/a	n/a	<4.1	<0.49
Anthracene	13	13	n/a	n/a	<4.1	<0.49
Benzo(a)anthracene	26	35	n/a	n/a	<4.1	<0.49
Benzo(a)pyrene	2.6	16	n/a	n/a	*<4.1*	<0.49
Benzo(b)fluoranthene	19	19	n/a	n/a	<4.1	<0.49
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	<4.1	<0.49
Benzo(k)fluoranthene	10	10	n/a	n/a	<4.1	<0.49
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	**290**	**5.3**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	**290**	**5.3**
C19-C36 Aliphatics	NA	NA	n/a	n/a	<41	<4.9
C9-C18 Aliphatics	NA	NA	n/a	n/a	**910**	**13**
Chrysene	6.4	6.4	n/a	n/a	<4.1	<0.49
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	*<4.1*	<0.49
Fluoranthene	220	220	n/a	n/a	<4.1	<0.49
Fluorene	270	270	n/a	n/a	<4.1	<0.49
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	*<4.1*	<0.49
Naphthalene	325	3.52	n/a	n/a	*<4.1*	<0.49
Phenanthrene	NA	NA	n/a	n/a	<4.1	<0.49
Pyrene	140	140	n/a	n/a	<4.1	<0.49
Total EPH	NA	NA	n/a	n/a	**1200**	**18**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-05 (5-7)	TW-06 (0-2)	TW-07 (0-2)	TW-07 (5-7)
Location Identification and Sample Interval (Feet below ground surface)			TW-05 (5-7)	TW-06 (0-2)	TW-07 (0-2)	TW-07 (5-7)
Laboratory Sample Identification			A7D50905	A7D23710	A7D50902/360-13655-2	A7D50903/360-13655-3
Date Collected			11/19/2007	11/13/2007	11/19/2007	11/19/2007
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	*<0.29*	*<0.36*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	<5.8	<7.3
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	<5.8	<7.3
C9-C10 Aromatics	NA	NA	n/a	n/a	**33**	<7.3
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	<5.8	<7.3
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**34**	<7.3
Ethylbenzene	650	55	n/a	n/a	<0.29	<0.36
m+p-Xylenes	700	700	n/a	n/a	<0.058	<0.073
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	*<0.58*	*<0.73*
Napthalene	325	3.52	n/a	n/a	<0.58	<0.73
o-Xylenes	NA	NA	n/a	n/a	<0.29	<0.36
Toluene	1000	40	n/a	n/a	<0.29	<0.36
Total VPH	NA	NA	n/a	n/a	**33**	<7.3

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		TW-08 (0-2)	TW-08 (5-7)	TW-09 (0-2)
	Laboratory Sample Identification		A7D43401/360-13624-1	A7D50901/360-13655-1	A7D23709/360-13525-1
	Date Collected		11/16/2007	11/19/2007	11/13/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	<3.3	**8**	**64**
Gasoline Range Organics	450	150	<5	**180**	**800**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	<0.44	<0.4	**5.1**
Acenaphthene	300	300	<0.44	<0.4	<0.35
Acenaphthylene	NA	NA	<0.44	<0.4	<0.35
Anthracene	13	13	<0.44	<0.4	<0.35
Benzo(a)anthracene	26	35	<0.44	<0.4	<0.35
Benzo(a)pyrene	2.6	16	<0.44	<0.4	<0.35
Benzo(b)fluoranthene	19	19	<0.44	<0.4	<0.35
Benzo(g,h,i)perylene	NA	NA	<0.44	<0.4	<0.35
Benzo(k)fluoranthene	10	10	<0.44	<0.4	<0.35
C11-C22 Aromatics (Adjusted)	NA	NA	**11**	<4	**110**
C11-C22 Aromatics (unadjusted)	NA	NA	**11**	<4	**120**
C19-C36 Aliphatics	NA	NA	**7**	<4	**75**
C9-C18 Aliphatics	NA	NA	**11**	<4	**430**
Chrysene	6.4	6.4	<0.44	<0.4	<0.35
Dibenz(a,h)anthracene	2.6	11	<0.44	<0.4	<0.35
Fluoranthene	220	220	<0.44	<0.4	<0.35
Fluorene	270	270	<0.44	<0.4	<0.35
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.44	<0.4	<0.35
Naphthalene	325	3.52	<0.44	<0.4	**0.78**
Phenanthrene	NA	NA	<0.44	<0.4	<0.35
Pyrene	140	140	<0.44	<0.4	<0.35
Total EPH	NA	NA	**29**	<4	**610**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-08 (0-2)	TW-08 (5-7)	TW-09 (0-2)
	Laboratory Sample Identification		A7D43401/360-13624-1	A7D50901/360-13655-1	A7D23709/360-13525-1
	Date Collected		11/16/2007	11/19/2007	11/13/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario			
MADEPVPH (mg/kg)					
Benzene	17	0.08	*<0.29*	**1.2**	*<1.3*
C5-C8 Aliphatics (adjusted)	NA	NA	<5.8	**64**	<26
C5-C8 Aliphatics (unadjusted)	NA	NA	<5.8	**66**	<26
C9-C10 Aromatics	NA	NA	<5.8	**62**	**37**
C9-C12 Aliphatics (adjusted)	NA	NA	<5.8	<6	<26
C9-C12 Aliphatics (unadjusted)	NA	NA	<5.8	**62**	**54**
Ethylbenzene	650	55	<0.29	**2.6**	<1.3
m+p-Xylenes	700	700	<0.058	**0.46**	<0.26UJ
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<0.58*	**5.5**	*<2.6*
Napthalene	325	3.52	<0.58	**0.69**	<2.6
o-Xylenes	NA	NA	<0.29	**0.49**	<1.3
Toluene	1000	40	<0.29	<0.3	<1.3
Total VPH	NA	NA	<5.8	**130**	**37**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		TW-10 (0-2)	TW-10 (7-8)	TW-11 (0-2)	TW-12 (0-2)
	Laboratory Sample Identification		A7D40708	A7D40709/360-13595-3	A7D23711	A7D40710
	Date Collected		11/15/2007	11/15/2007	11/13/2007	11/15/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	**3000**	<3.3	<3.3
Gasoline Range Organics	450	150	<5	**1200**	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	**1.7J**	n/a	n/a
Acenaphthene	300	300	n/a	<0.46	n/a	n/a
Acenaphthylene	NA	NA	n/a	**0.59J**	n/a	n/a
Anthracene	13	13	n/a	<0.46	n/a	n/a
Benzo(a)anthracene	26	35	n/a	<0.46	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	<0.46	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	<0.46	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	<0.46	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	<0.46	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	**540**	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	**540**	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	**530**	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	**790**	n/a	n/a
Chrysene	6.4	6.4	n/a	<0.46	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	<0.46	n/a	n/a
Fluoranthene	220	220	n/a	<0.46	n/a	n/a
Fluorene	270	270	n/a	**1.7J**	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	<0.46	n/a	n/a
Naphthalene	325	3.52	n/a	**0.69J**	n/a	n/a
Phenanthrene	NA	NA	n/a	**1.3J**	n/a	n/a
Pyrene	140	140	n/a	<0.46	n/a	n/a
Total EPH	NA	NA	n/a	**1900**	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-10 (0-2)	TW-10 (7-8)	TW-11 (0-2)	TW-12 (0-2)
	Laboratory Sample Identification		A7D40708	A7D40709/360-13595-3	A7D23711	A7D40710
	Date Collected		11/15/2007	11/15/2007	11/13/2007	11/15/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	*<3.1*	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	**190**	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	**190**	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	**160**	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	<62	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	**210**	n/a	n/a
Ethylbenzene	650	55	n/a	<3.1	n/a	n/a
m+p-Xylenes	700	700	n/a	<0.62	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	*<6.2*	n/a	n/a
Napthalene	325	3.52	n/a	*<6.2*	n/a	n/a
o-Xylenes	NA	NA	n/a	<3.1	n/a	n/a
Toluene	1000	40	n/a	<3.1	n/a	n/a
Total VPH	NA	NA	n/a	**340**	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TW-12 (10-11.5)	TW-13 (0-2)	DUP-1 (DUP of TW-13 (0-2))
	Laboratory Sample Identification		A7D40711/360-13595-4	A7D43404	A7D43405
	Date Collected		11/15/2007	11/16/2007	11/16/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**33**	<3.3	<3.3
Gasoline Range Organics	450	150	**470**	<5	<5
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	**4.3**	n/a	n/a
Acenaphthene	300	300	<0.45	n/a	n/a
Acenaphthylene	NA	NA	<0.45	n/a	n/a
Anthracene	13	13	<0.45	n/a	n/a
Benzo(a)anthracene	26	35	<0.45	n/a	n/a
Benzo(a)pyrene	2.6	16	<0.45	n/a	n/a
Benzo(b)fluoranthene	19	19	<0.45	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<0.45	n/a	n/a
Benzo(k)fluoranthene	10	10	<0.45	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**57**	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**63**	n/a	n/a
C19-C36 Aliphatics	NA	NA	**9.2**	n/a	n/a
C9-C18 Aliphatics	NA	NA	**100**	n/a	n/a
Chrysene	6.4	6.4	<0.45	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	<0.45	n/a	n/a
Fluoranthene	220	220	<0.45	n/a	n/a
Fluorene	270	270	<0.45	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.45	n/a	n/a
Naphthalene	325	3.52	**2.6**	n/a	n/a
Phenanthrene	NA	NA	<0.45	n/a	n/a
Pyrene	140	140	<0.45	n/a	n/a
Total EPH	NA	NA	**170**	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-12 (10-11.5)	TW-13 (0-2)	DUP-1 (DUP of TW-13 (0-2))
	Laboratory Sample Identification		A7D40711/360-13595-4	A7D43404	A7D43405
	Date Collected		11/15/2007	11/16/2007	11/16/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario			
MADEPVPH (mg/kg)					
Benzene	17	0.08	*<3*	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	**220**	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	**220**	n/a	n/a
C9-C10 Aromatics	NA	NA	**94**	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<61	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**120**	n/a	n/a
Ethylbenzene	650	55	**3.3**	n/a	n/a
m+p-Xylenes	700	700	**1.6**	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<6.1*	n/a	n/a
Napthalene	325	3.52	*<6.1*	n/a	n/a
o-Xylenes	NA	NA	<3	n/a	n/a
Toluene	1000	40	<3	n/a	n/a
Total VPH	NA	NA	**310**	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-14 (0-2)	TW-15 (0-2)	TW-15 (5-7.5)
	Laboratory Sample Identification		A7D32203/360-13565-3	A7D57504/360-13676-4	A7D57505/360-13676-5
	Date Collected		11/14/2007	11/20/2007	11/20/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**480J**	<3.3	**680J**
Gasoline Range Organics	450	150	**22**	<5	**340**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	<0.41	<0.44	**9.8**
Acenaphthene	300	300	<0.41	<0.44	<4.1
Acenaphthylene	NA	NA	<0.41	<0.44	<4.1
Anthracene	13	13	<0.41	<0.44	<4.1
Benzo(a)anthracene	26	35	<0.41	<0.44	<4.1
Benzo(a)pyrene	2.6	16	<0.41	<0.44	*<4.1*
Benzo(b)fluoranthene	19	19	<0.41	<0.44	<4.1
Benzo(g,h,i)perylene	NA	NA	<0.41	<0.44	<4.1
Benzo(k)fluoranthene	10	10	<0.41	<0.44	<4.1
C11-C22 Aromatics (Adjusted)	NA	NA	**6.3**	**30**	**1500**
C11-C22 Aromatics (unadjusted)	NA	NA	**6.3**	**30**	**1600**
C19-C36 Aliphatics	NA	NA	<4.1	**54**	**1200**
C9-C18 Aliphatics	NA	NA	<4.1	**13**	**1800**
Chrysene	6.4	6.4	<0.41	<0.44	<4.1
Dibenz(a,h)anthracene	2.6	11	<0.41	<0.44	*<4.1*
Fluoranthene	220	220	<0.41	<0.44	<4.1
Fluorene	270	270	<0.41	<0.44	<4.1
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.41	<0.44	*<4.1*
Naphthalene	325	3.52	<0.41	<0.44	*<4.1*
Phenanthrene	NA	NA	<0.41	<0.44	**5.7**
Pyrene	140	140	<0.41	<0.44	<4.1
Total EPH	NA	NA	**6.3**	**97**	**4600**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-14 (0-2)**	**TW-15 (0-2)**	**TW-15 (5-7.5)**
	Laboratory Sample Identification		**A7D32203/360-13565-3**	**A7D57504/360-13676-4**	**A7D57505/360-13676-5**
	Date Collected		**11/14/2007**	**11/20/2007**	**11/20/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	*<0.29*	*<0.29*	*<3.7*
C5-C8 Aliphatics (adjusted)	NA	NA	**19**	<5.8	<73
C5-C8 Aliphatics (unadjusted)	NA	NA	**19**	<5.8	<73
C9-C10 Aromatics	NA	NA	<5.8	<5.8	<73
C9-C12 Aliphatics (adjusted)	NA	NA	<5.8	<5.8	<73
C9-C12 Aliphatics (unadjusted)	NA	NA	<5.8	<5.8	<73
Ethylbenzene	650	55	<0.29	<0.29	<3.7
m+p-Xylenes	700	700	<0.058	<0.058	<0.73
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<0.58*	*<0.58*	*<7.3*
Napthalene	325	3.52	<0.58	<0.58	*<7.3*
o-Xylenes	NA	NA	<0.29	<0.29	<3.7
Toluene	1000	40	<0.29	<0.29	<3.7
Total VPH	NA	NA	**19**	<5.8	<73

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		TW-16 (0-2)	TW-16 (10-12)	TW-17 (0-2)	TW-17 (10-12)	TW-18 (0-2)
	Laboratory Sample Identification		A7D43402	A7D43403	A7D72001	A7D72002	A7D51001
	Date Collected		11/16/2007	11/16/2007	11/27/2007	11/27/2007	11/19/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	<3.3	**450**	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	<5	**120J**	<5	<5	<5
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-16 (0-2)**	**TW-16 (10-12)**	**TW-17 (0-2)**	**TW-17 (10-12)**	**TW-18 (0-2)**
	Laboratory Sample Identification		**A7D43402**	**A7D43403**	**A7D72001**	**A7D72002**	**A7D51001**
	Date Collected		**11/16/2007**	**11/16/2007**	**11/27/2007**	**11/27/2007**	**11/19/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-19 (0-2)**	**TW-19 (5-6)**	**TW-20 (0-2)**
	Laboratory Sample Identification		**A7D32204/396-13565-4**	**A7D40707/360-13595-2**	**A7D65319/360-13740-1**
	Date Collected		**11/14/2007**	**11/15/2007**	**11/26/2007**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	<3.3	**450**	<3.3
Gasoline Range Organics	450	150	<5	**1000**	**0.78J**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	<0.41	**7.6**	<0.41
Acenaphthene	300	300	<0.41	<1.4	<0.41
Acenaphthylene	NA	NA	<0.41	<1.4	<0.41
Anthracene	13	13	<0.41	<1.4	<0.41
Benzo(a)anthracene	26	35	<0.41	<1.4	<0.41
Benzo(a)pyrene	2.6	16	<0.41	<1.4	<0.41
Benzo(b)fluoranthene	19	19	<0.41	<1.4	<0.41
Benzo(g,h,i)perylene	NA	NA	<0.41	<1.4	<0.41
Benzo(k)fluoranthene	10	10	<0.41	<1.4	<0.41
C11-C22 Aromatics (Adjusted)	NA	NA	**47**	**280**	**8.2**
C11-C22 Aromatics (unadjusted)	NA	NA	**47**	**300**	**8.2**
C19-C36 Aliphatics	NA	NA	**100**	**230**	**32**
C9-C18 Aliphatics	NA	NA	**6.2**	**350**	**4.2**
Chrysene	6.4	6.4	<0.41	<1.4	<0.41
Dibenz(a,h)anthracene	2.6	11	<0.41	<1.4	<0.41
Fluoranthene	220	220	<0.41	<1.4	<0.41
Fluorene	270	270	<0.41	<1.4	<0.41
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.41	*<1.4*	<0.41
Naphthalene	325	3.52	<0.41	**5.2**	<0.41
Phenanthrene	NA	NA	<0.41	<1.4	<0.41
Pyrene	140	140	<0.41	<1.4	<0.41
Total EPH	NA	NA	**150**	**870**	**45**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-19 (0-2)	TW-19 (5-6)	TW-20 (0-2)
			A7D32204/396-13565-4	A7D40707/360-13595-2	A7D65319/360-13740-1
			11/14/2007	11/15/2007	11/26/2007
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	*<0.27*	**17**	*<0.26*
C5-C8 Aliphatics (adjusted)	NA	NA	<5.4	**1300**	<5.2
C5-C8 Aliphatics (unadjusted)	NA	NA	<5.4	**1300**	<5.2
C9-C10 Aromatics	NA	NA	<5.4	**790**	<5.2
C9-C12 Aliphatics (adjusted)	NA	NA	<5.4	<170	<5.2
C9-C12 Aliphatics (unadjusted)	NA	NA	<5.4	**940**	<5.2
Ethylbenzene	650	55	<0.27	**39**	<0.26
m+p-Xylenes	700	700	<0.054	<1.7	<0.052
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<0.54*	**110**	*<0.52*
Napthalene	325	3.52	<0.54	*<17*	<0.52
o-Xylenes	NA	NA	<0.27	<8.7	<0.26
Toluene	1000	40	<0.27	<8.7	<0.26
Total VPH	NA	NA	<5.4	**2100**	<5.2

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-20 (10-12)**	**TW-21 (0-2)**	**TW-21 (10-12)**	**TW-22 (0-2)**
	Laboratory Sample Identification		**A7D65320/360-13740-2**	**A7D65317**	**A7D65318**	**A7D57506**
	Date Collected		**11/26/2007**	**11/26/2007**	**11/26/2007**	**11/20/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**480**	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	**110**	**1.4J**	**120**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	**5.7**	n/a	n/a	n/a
Acenaphthene	300	300	<4.2	n/a	n/a	n/a
Acenaphthylene	NA	NA	**4.5**	n/a	n/a	n/a
Anthracene	13	13	<4.2	n/a	n/a	n/a
Benzo(a)anthracene	26	35	<4.2	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	*<4.2*	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	<4.2	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<4.2	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	<4.2	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**960**	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**980**	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	**300**	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	**3000**	n/a	n/a	n/a
Chrysene	6.4	6.4	<4.2	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	*<4.2*	n/a	n/a	n/a
Fluoranthene	220	220	<4.2	n/a	n/a	n/a
Fluorene	270	270	<4.2	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	*<4.2*	n/a	n/a	n/a
Naphthalene	325	3.52	*<4.2*	n/a	n/a	n/a
Phenanthrene	NA	NA	**6.3**	n/a	n/a	n/a
Pyrene	140	140	<4.2	n/a	n/a	n/a
Total EPH	NA	NA	**4200**	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-20 (10-12)	TW-21 (0-2)	TW-21 (10-12)	TW-22 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			TW-20 (10-12)	TW-21 (0-2)	TW-21 (10-12)	TW-22 (0-2)
Laboratory Sample Identification			A7D65320/360-13740-2	A7D65317	A7D65318	A7D57506
Date Collected			11/26/2007	11/26/2007	11/26/2007	11/20/2007
MADEPVPH (mg/kg)						
Benzene	17	0.08	*<2.3*	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	<46	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	<46	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	**120**	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<46	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**140**	n/a	n/a	n/a
Ethylbenzene	650	55	<2.3	n/a	n/a	n/a
m+p-Xylenes	700	700	<0.46	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<4.6*	n/a	n/a	n/a
Napthalene	325	3.52	*<4.6*	n/a	n/a	n/a
o-Xylenes	NA	NA	<2.3	n/a	n/a	n/a
Toluene	1000	40	<2.3	n/a	n/a	n/a
Total VPH	NA	NA	**120**	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-22 (10-12)	TW-23S (0-2)	TW-23S (10-11)	TW-24S (0-2)
	Laboratory Sample Identification		A7D57507	A7D72003	A7D72004	A7D72005
	Date Collected		11/20/2007	11/27/2007	11/27/2007	11/27/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**33**	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	<5	<5	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-22 (10-12)	TW-23S (0-2)	TW-23S (10-11)	TW-24S (0-2)
Location Identification and Sample Interval (Feet below ground surface)			**TW-22 (10-12)**	**TW-23S (0-2)**	**TW-23S (10-11)**	**TW-24S (0-2)**
Laboratory Sample Identification			**A7D57507**	**A7D72003**	**A7D72004**	**A7D72005**
Date Collected			**11/20/2007**	**11/27/2007**	**11/27/2007**	**11/27/2007**
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-24S (6-7.5)**	**TW-25S (0-2)**	**TW-25S (2-4)**	**TW-26 (0-2)**
	Laboratory Sample Identification		**A7D72007/360-13802-1**	**A7D72006**	**A7D72008**	**A7D78416**
	Date Collected		**11/27/2007**	**11/27/2007**	**11/27/2007**	**11/28/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**310**	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	**380**	<5	**4.5J**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	<2.3	n/a	n/a	n/a
Acenaphthene	300	300	<2.3	n/a	n/a	n/a
Acenaphthylene	NA	NA	<2.3	n/a	n/a	n/a
Anthracene	13	13	<2.3	n/a	n/a	n/a
Benzo(a)anthracene	26	35	<2.3	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	<2.3	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	<2.3	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<2.3	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	<2.3	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**440**	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**440**	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	**420**	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	**610**	n/a	n/a	n/a
Chrysene	6.4	6.4	<2.3	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	<2.3	n/a	n/a	n/a
Fluoranthene	220	220	<2.3	n/a	n/a	n/a
Fluorene	270	270	<2.3	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	<2.3	n/a	n/a	n/a
Naphthalene	325	3.52	<2.3	n/a	n/a	n/a
Phenanthrene	NA	NA	<2.3	n/a	n/a	n/a
Pyrene	140	140	<2.3	n/a	n/a	n/a
Total EPH	NA	NA	**1500**	n/a	n/a	n/a

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El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-24S (6-7.5)	TW-25S (0-2)	TW-25S (2-4)	TW-26 (0-2)
	Laboratory Sample Identification		A7D72007/360-13802-1	A7D72006	A7D72008	A7D78416
	Date Collected		11/27/2007	11/27/2007	11/27/2007	11/28/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	*<1.7*	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	**140**	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	**140**	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	**180**	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	**84**	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**270**	n/a	n/a	n/a
Ethylbenzene	650	55	<1.7	n/a	n/a	n/a
m+p-Xylenes	700	700	<0.34	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<3.4*	n/a	n/a	n/a
Napthalene	325	3.52	<3.4	n/a	n/a	n/a
o-Xylenes	NA	NA	<1.7	n/a	n/a	n/a
Toluene	1000	40	<1.7	n/a	n/a	n/a
Total VPH	NA	NA	**400**	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-26 (12-12.5)	TW-27S (0-2)	TW-28 (0-2)	TW-28 (2-2.5)
	Laboratory Sample Identification		A7D78417	A7D72009	A7D96001/360-13918-1	A7D96002/360-13918-2
	Date Collected		11/28/2007	11/27/2007	12/4/2007	12/4/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	**2300**	**870**
Gasoline Range Organics	450	150	<5	<5	**410**	**500**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	**4.7J**	<2
Acenaphthene	300	300	n/a	n/a	<2.1	<2
Acenaphthylene	NA	NA	n/a	n/a	<2.1	<2
Anthracene	13	13	n/a	n/a	<2.1	<2
Benzo(a)anthracene	26	35	n/a	n/a	<2.1	<2
Benzo(a)pyrene	2.6	16	n/a	n/a	<2.1	<2
Benzo(b)fluoranthene	19	19	n/a	n/a	<2.1	<2
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	<2.1	<2
Benzo(k)fluoranthene	10	10	n/a	n/a	<2.1	<2
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	**580J**	**270**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	**580J**	**270**
C19-C36 Aliphatics	NA	NA	n/a	n/a	**1100J**	**420**
C9-C18 Aliphatics	NA	NA	n/a	n/a	**1400J**	**610**
Chrysene	6.4	6.4	n/a	n/a	<2.1	<2
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	<2.1	<2
Fluoranthene	220	220	n/a	n/a	<2.1	<2
Fluorene	270	270	n/a	n/a	<2.1	<2
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	*<2.1*	*<2*
Naphthalene	325	3.52	n/a	n/a	**2.3J**	<2
Phenanthrene	NA	NA	n/a	n/a	<2.1	<2
Pyrene	140	140	n/a	n/a	<2.1	<2
Total EPH	NA	NA	n/a	n/a	**3100J**	**1300**

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El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-26 (12-12.5)	TW-27S (0-2)	TW-28 (0-2)	TW-28 (2-2.5)
	Laboratory Sample Identification		A7D78417	A7D72009	A7D96001/360-13918-1	A7D96002/360-13918-2
	Date Collected		11/28/2007	11/27/2007	12/4/2007	12/4/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	*<1.4*	*<1.3*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	**91**	**260**
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**91**	**260**
C9-C10 Aromatics	NA	NA	n/a	n/a	**190**	**180**
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	<27	**76**
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**210**	**270**
Ethylbenzene	650	55	n/a	n/a	<1.4	<1.3
m+p-Xylenes	700	700	n/a	n/a	<0.27	<0.26
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	*<2.7*	**5**
Napthalene	325	3.52	n/a	n/a	<2.7	<2.6
o-Xylenes	NA	NA	n/a	n/a	<1.4	**4.3**
Toluene	1000	40	n/a	n/a	<1.4	<1.3
Total VPH	NA	NA	n/a	n/a	**280**	**520**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-28 (25-27.5)**	**TW-29 (0-2)**	**TW-29 (0-2)**
	Laboratory Sample Identification		**A7D96003/360-13918-3**	**A7E12603/360-13954-3**	**A7E21703**
	Date Collected		**12/4/2007**	**12/5/2007-12/6/2007**	**12/7/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**480**	**60**	**5.8**
Gasoline Range Organics	450	150	**8600**	**1.2J**	**7.6**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	**31**	<0.44	n/a
Acenaphthene	300	300	<4	<0.44	n/a
Acenaphthylene	NA	NA	<4	<0.44	n/a
Anthracene	13	13	<4	<0.44	n/a
Benzo(a)anthracene	26	35	<4	<0.44	n/a
Benzo(a)pyrene	2.6	16	<4	<0.44	n/a
Benzo(b)fluoranthene	19	19	<4	<0.44	n/a
Benzo(g,h,i)perylene	NA	NA	<4	<0.44	n/a
Benzo(k)fluoranthene	10	10	<4	<0.44	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**330**	**110**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**370**	**110**	n/a
C19-C36 Aliphatics	NA	NA	**220**	**95**	n/a
C9-C18 Aliphatics	NA	NA	**780**	**44**	n/a
Chrysene	6.4	6.4	<4	<0.44	n/a
Dibenz(a,h)anthracene	2.6	11	<4	<0.44	n/a
Fluoranthene	220	220	<4	<0.44	n/a
Fluorene	270	270	<4	<0.44	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	<4	<0.44	n/a
Naphthalene	325	3.52	**19**	<0.44	n/a
Phenanthrene	NA	NA	<4	<0.44	n/a
Pyrene	140	140	<4	**0.5**	n/a
Total EPH	NA	NA	**1300**	**250**	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-28 (25-27.5)	TW-29 (0-2)	TW-29 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			TW-28 (25-27.5)	TW-29 (0-2)	TW-29 (0-2)
Laboratory Sample Identification			A7D96003/360-13918-3	A7E12603/360-13954-3	A7E21703
Date Collected			12/4/2007	12/5/2007-12/6/2007	12/7/2007
MADEPVPH (mg/kg)					
Benzene	17	0.08	**34**	*<0.4*	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	**2600**	<8	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	**2600**	<8	n/a
C9-C10 Aromatics	NA	NA	**1500**	**14**	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<220	<8	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**1500**	**17**	n/a
Ethylbenzene	650	55	**73**	<0.4	n/a
m+p-Xylenes	700	700	<2.2	<0.08	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	**230**	*<0.8*	n/a
Napthalene	325	3.52	**23**	<0.8	n/a
o-Xylenes	NA	NA	**71**	<0.4	n/a
Toluene	1000	40	**35**	<0.4	n/a
Total VPH	NA	NA	**4100**	**14**	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**DUP-3 (DUP of TW-29 (0-2))**	**TW-29 (6.5-8)**	**TW-30 (0-2)**	**TW-31S (0-2)**
	Laboratory Sample Identification		**A7E12605/360-13954-5**	**A7E12604/360-13954-4**	**A7D85317**	**A7E21704**
	Date Collected		**12/5/2007-12/6/2007**	**12/5/2007-12/6/2007**	**11/29/2007**	**12/7/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**46**	**390**	**23**	<3.3
Gasoline Range Organics	450	150	**1.7J**	**1300**	**2.3J**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	<0.39	<7.8	n/a	n/a
Acenaphthene	300	300	<0.39	<7.8	n/a	n/a
Acenaphthylene	NA	NA	<0.39	<7.8	n/a	n/a
Anthracene	13	13	<0.39	<7.8	n/a	n/a
Benzo(a)anthracene	26	35	<0.39	<7.8	n/a	n/a
Benzo(a)pyrene	2.6	16	<0.39	*<7.8*	n/a	n/a
Benzo(b)fluoranthene	19	19	<0.39	<7.8	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<0.39	<7.8	n/a	n/a
Benzo(k)fluoranthene	10	10	<0.39	<7.8	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**98**	**1300**	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**98**	**1300**	n/a	n/a
C19-C36 Aliphatics	NA	NA	**76**	**1200**	n/a	n/a
C9-C18 Aliphatics	NA	NA	**44**	**1100**	n/a	n/a
Chrysene	6.4	6.4	<0.39	*<7.8*	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	<0.39	*<7.8*	n/a	n/a
Fluoranthene	220	220	<0.39	<7.8	n/a	n/a
Fluorene	270	270	<0.39	<7.8	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.39	*<7.8*	n/a	n/a
Naphthalene	325	3.52	<0.39	*<7.8*	n/a	n/a
Phenanthrene	NA	NA	<0.39	<7.8	n/a	n/a
Pyrene	140	140	**0.42**	<7.8	n/a	n/a
Total EPH	NA	NA	**220**	**3700**	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		DUP-3 (DUP of TW-29 (0-2))	TW-29 (6.5-8)	TW-30 (0-2)	TW-31S (0-2)
	Laboratory Sample Identification		A7E12605/360-13954-5	A7E12604/360-13954-4	A7D85317	A7E21704
	Date Collected		12/5/2007-12/6/2007	12/5/2007-12/6/2007	11/29/2007	12/7/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	*<1.3*	*<2.3*	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	<25	**290**	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	<25	**290**	n/a	n/a
C9-C10 Aromatics	NA	NA	<25	**310**	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<25	**72**	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	<25	**380**	n/a	n/a
Ethylbenzene	650	55	<1.3	<2.3	n/a	n/a
m+p-Xylenes	700	700	<0.25	<0.45	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<2.5*	*<4.5*	n/a	n/a
Napthalene	325	3.52	<2.5	**5.4**	n/a	n/a
o-Xylenes	NA	NA	<1.3	<2.3	n/a	n/a
Toluene	1000	40	<1.3	<2.3	n/a	n/a
Total VPH	NA	NA	<25	**670**	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		TW-31S (12-13)	TW-32S (0-1)	TW-33 (0-2)	TW-33 (4-4.5)
	Laboratory Sample Identification		A7E21705	A7E12401	A7E12601/360-13954-1	A7E12602/360-13954-2
	Date Collected		12/7/2007	12/5/2007	12/5/2007-12/6/2007	12/5/2007-12/6/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**94**	<3.3	<3.3	**1100**
Gasoline Range Organics	450	150	**5.8**	<5	**48**	**3800**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	<0.46	**44**
Acenaphthene	300	300	n/a	n/a	<0.46	<1.5
Acenaphthylene	NA	NA	n/a	n/a	<0.46	<1.5
Anthracene	13	13	n/a	n/a	<0.46	<1.5
Benzo(a)anthracene	26	35	n/a	n/a	<0.46	<1.5
Benzo(a)pyrene	2.6	16	n/a	n/a	<0.46	<1.5
Benzo(b)fluoranthene	19	19	n/a	n/a	<0.46	<1.5
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	<0.46	<1.5
Benzo(k)fluoranthene	10	10	n/a	n/a	<0.46	<1.5
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	**11**	**320**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	**11**	**390**
C19-C36 Aliphatics	NA	NA	n/a	n/a	<4.6	**31**
C9-C18 Aliphatics	NA	NA	n/a	n/a	<4.6	**760**
Chrysene	6.4	6.4	n/a	n/a	<0.46	<1.5
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	<0.46	<1.5
Fluoranthene	220	220	n/a	n/a	<0.46	<1.5
Fluorene	270	270	n/a	n/a	<0.46	<1.5
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	<0.46	*<1.5*
Naphthalene	325	3.52	n/a	n/a	<0.46	**23**
Phenanthrene	NA	NA	n/a	n/a	<0.46	<1.5
Pyrene	140	140	n/a	n/a	<0.46	<1.5
Total EPH	NA	NA	n/a	n/a	**11**	**1100**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-31S (12-13)	TW-32S (0-1)	TW-33 (0-2)	TW-33 (4-4.5)
Location Identification and Sample Interval (Feet below ground surface)			TW-31S (12-13)	TW-32S (0-1)	TW-33 (0-2)	TW-33 (4-4.5)
Laboratory Sample Identification			A7E21705	A7E12401	A7E12601/360-13954-1	A7E12602/360-13954-2
Date Collected			12/7/2007	12/5/2007	12/5/2007-12/6/2007	12/5/2007-12/6/2007
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	**0.8**	**19**
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	**14**	**1200**
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**15**	**1200**
C9-C10 Aromatics	NA	NA	n/a	n/a	**11**	**1100**
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	<5.8	<150
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**12**	**1000**
Ethylbenzene	650	55	n/a	n/a	**0.88**	**52**
m+p-Xylenes	700	700	n/a	n/a	**0.41**	**16**
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	**1.7**	**150**
Napthalene	325	3.52	n/a	n/a	<0.58	**15**
o-Xylenes	NA	NA	n/a	n/a	<0.29	<7.6
Toluene	1000	40	n/a	n/a	<0.29	<7.6
Total VPH	NA	NA	n/a	n/a	**25**	**2300**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-34 (0-2)**	**TW-35 (0-2)**	**TW-36 (0-2)**
	Laboratory Sample Identification		**A7D96004**	**A7D94306/360-13877-1**	**A7D85320/360-13820-3**
	Date Collected		**12/4/2007**	**12/3/2007**	**11/29/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	<3.3	<3.3	<3.3
Gasoline Range Organics	450	150	<5	<5	<5
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	<0.4	<0.47
Acenaphthene	300	300	n/a	<0.4	<0.47
Acenaphthylene	NA	NA	n/a	<0.4	<0.47
Anthracene	13	13	n/a	<0.4	<0.47
Benzo(a)anthracene	26	35	n/a	<0.4	<0.47
Benzo(a)pyrene	2.6	16	n/a	<0.4	<0.47
Benzo(b)fluoranthene	19	19	n/a	<0.4	<0.47
Benzo(g,h,i)perylene	NA	NA	n/a	**0.71**	<0.47
Benzo(k)fluoranthene	10	10	n/a	<0.4	<0.47
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	**15**	**7.5**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	**15**	**7.5**
C19-C36 Aliphatics	NA	NA	n/a	**4.1**	<4.7
C9-C18 Aliphatics	NA	NA	n/a	**4.6**	<4.7
Chrysene	6.4	6.4	n/a	<0.4	<0.47
Dibenz(a,h)anthracene	2.6	11	n/a	<0.4	<0.47
Fluoranthene	220	220	n/a	<0.4	<0.47
Fluorene	270	270	n/a	<0.4	<0.47
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	<0.4	<0.47
Naphthalene	325	3.52	n/a	<0.4	<0.47
Phenanthrene	NA	NA	n/a	<0.4	<0.47
Pyrene	140	140	n/a	<0.4	<0.47
Total EPH	NA	NA	n/a	**23**	**7.5**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-34 (0-2)**	**TW-35 (0-2)**	**TW-36 (0-2)**
	Laboratory Sample Identification		**A7D96004**	**A7D94306/360-13877-1**	**A7D85320/360-13820-3**
	Date Collected		**12/4/2007**	**12/3/2007**	**11/29/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	*<0.28*	*<0.35*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	<5.6	<7
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	<5.6	<7
C9-C10 Aromatics	NA	NA	n/a	<5.6	<7
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	<5.6	<7
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	<5.6	<7
Ethylbenzene	650	55	n/a	<0.28	<0.35
m+p-Xylenes	700	700	n/a	<0.056	<0.07
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	*<0.56*	*<0.7*
Napthalene	325	3.52	n/a	<0.56	<0.7
o-Xylenes	NA	NA	n/a	<0.28	<0.35
Toluene	1000	40	n/a	<0.28	<0.35
Total VPH	NA	NA	n/a	<5.6	<7

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-36 (14-15)	TW-37 (0-2)	TW-37 (2-4)	TW-38 (0-2)
	Laboratory Sample Identification		A7D85321/360-13820-4	A7E12403	A7E12404	A7D85318/360-13820-1
	Date Collected		11/29/2007	12/5/2007	12/5/2007	11/29/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	**220**	<3.3
Gasoline Range Organics	450	150	**1.2J**	**8.3**	**4200**	**1.2J**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	<0.39	n/a	n/a	<0.37
Acenaphthene	300	300	<0.39	n/a	n/a	<0.37
Acenaphthylene	NA	NA	<0.39	n/a	n/a	<0.37
Anthracene	13	13	<0.39	n/a	n/a	<0.37
Benzo(a)anthracene	26	35	<0.39	n/a	n/a	<0.37
Benzo(a)pyrene	2.6	16	<0.39	n/a	n/a	<0.37
Benzo(b)fluoranthene	19	19	<0.39	n/a	n/a	<0.37
Benzo(g,h,i)perylene	NA	NA	<0.39	n/a	n/a	<0.37
Benzo(k)fluoranthene	10	10	<0.39	n/a	n/a	<0.37
C11-C22 Aromatics (Adjusted)	NA	NA	**5.7**	n/a	n/a	**9.3**
C11-C22 Aromatics (unadjusted)	NA	NA	**5.7**	n/a	n/a	**9.3**
C19-C36 Aliphatics	NA	NA	**18**	n/a	n/a	**6.8**
C9-C18 Aliphatics	NA	NA	<3.9	n/a	n/a	<3.7
Chrysene	6.4	6.4	<0.39	n/a	n/a	<0.37
Dibenz(a,h)anthracene	2.6	11	<0.39	n/a	n/a	<0.37
Fluoranthene	220	220	<0.39	n/a	n/a	<0.37
Fluorene	270	270	<0.39	n/a	n/a	<0.37
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.39	n/a	n/a	<0.37
Naphthalene	325	3.52	<0.39	n/a	n/a	<0.37
Phenanthrene	NA	NA	<0.39	n/a	n/a	<0.37
Pyrene	140	140	<0.39	n/a	n/a	<0.37
Total EPH	NA	NA	**24**	n/a	n/a	**16**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-36 (14-15)	TW-37 (0-2)	TW-37 (2-4)	TW-38 (0-2)
	Laboratory Sample Identification		A7D85321/360-13820-4	A7E12403	A7E12404	A7D85318/360-13820-1
	Date Collected		11/29/2007	12/5/2007	12/5/2007	11/29/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	*<0.26*	n/a	n/a	*<0.35*
C5-C8 Aliphatics (adjusted)	NA	NA	<5.3	n/a	n/a	<6.9
C5-C8 Aliphatics (unadjusted)	NA	NA	<5.3	n/a	n/a	<6.9
C9-C10 Aromatics	NA	NA	<5.3	n/a	n/a	<6.9
C9-C12 Aliphatics (adjusted)	NA	NA	<5.3	n/a	n/a	<6.9
C9-C12 Aliphatics (unadjusted)	NA	NA	<5.3	n/a	n/a	<6.9
Ethylbenzene	650	55	<0.26	n/a	n/a	<0.35
m+p-Xylenes	700	700	**0.53**	n/a	n/a	**0.37**
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<0.53*	n/a	n/a	*<0.69*
Napthalene	325	3.52	<0.53	n/a	n/a	<0.69
o-Xylenes	NA	NA	<0.26	n/a	n/a	<0.35
Toluene	1000	40	<0.26	n/a	n/a	<0.35
Total VPH	NA	NA	<5.3	n/a	n/a	<6.9

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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	Location Identification and Sample Interval (Feet below ground surface)		TW-38 (10-12.5)	TW-40 (0-1)	TW-41 (0.5-2.0)	TW-41-50 (DUP of TW-41 (0.5-2.0))
	Laboratory Sample Identification		A7D85319/360-13820-2	A7E12402	A7E86701	A7E86702
	Date Collected		11/29/2007	12/5/2007	12/20/2007	12/20/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	**110**	**26J**	**22**
Gasoline Range Organics	450	150	**17**	**11**	**7.8**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	<0.44	n/a	n/a	n/a
Acenaphthene	300	300	<0.44	n/a	n/a	n/a
Acenaphthylene	NA	NA	<0.44	n/a	n/a	n/a
Anthracene	13	13	<0.44	n/a	n/a	n/a
Benzo(a)anthracene	26	35	<0.44	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	<0.44	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	<0.44	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<0.44	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	<0.44	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**4.7**	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**4.7**	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	**4.7**	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	<4.4	n/a	n/a	n/a
Chrysene	6.4	6.4	<0.44	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	<0.44	n/a	n/a	n/a
Fluoranthene	220	220	<0.44	n/a	n/a	n/a
Fluorene	270	270	<0.44	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	<0.44	n/a	n/a	n/a
Naphthalene	325	3.52	<0.44	n/a	n/a	n/a
Phenanthrene	NA	NA	<0.44	n/a	n/a	n/a
Pyrene	140	140	<0.44	n/a	n/a	n/a
Total EPH	NA	NA	**9.4**	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-38 (10-12.5)**	**TW-40 (0-1)**	**TW-41 (0.5-2.0)**	**TW-41-50 (DUP of TW-41 (0.5-2.0))**
	Laboratory Sample Identification		**A7D85319/360-13820-2**	**A7E12402**	**A7E86701**	**A7E86702**
	Date Collected		**11/29/2007**	**12/5/2007**	**12/20/2007**	**12/20/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	*<1.6*	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	<31	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	<31	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	<31	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<31	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	<31	n/a	n/a	n/a
Ethylbenzene	650	55	<1.6	n/a	n/a	n/a
m+p-Xylenes	700	700	**34**	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<3.1*	n/a	n/a	n/a
Napthalene	325	3.52	<3.1	n/a	n/a	n/a
o-Xylenes	NA	NA	<1.6	n/a	n/a	n/a
Toluene	1000	40	<1.6	n/a	n/a	n/a
Total VPH	NA	NA	<31	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-42 (0-2)	TW-42 (7.5-10)	TW-43 (0-2)	TW-45 (0.5-2.0)	TW-45 (6-8)
Location Identification and Sample Interval (Feet below ground surface)			TW-42 (0-2)	TW-42 (7.5-10)	TW-43 (0-2)	TW-45 (0.5-2.0)	TW-45 (6-8)
Laboratory Sample Identification			A7E21701	A7E21702	A7D94305	A8080904	A8080905
Date Collected			12/7/2007	12/7/2007	12/3/2007	1/22/2008	1/22/2008
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**96J**	**130J**	**27J**	**120**	**1000**
Gasoline Range Organics	450	150	**0.98J**	**310**	<5	**1J**	**500**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-42 (0-2)	TW-42 (7.5-10)	TW-43 (0-2)	TW-45 (0.5-2.0)	TW-45 (6-8)
	Laboratory Sample Identification		A7E21701	A7E21702	A7D94305	A8080904	A8080905
	Date Collected		12/7/2007	12/7/2007	12/3/2007	1/22/2008	1/22/2008
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TW-46 (0-2)	TW-46 (2-4)	TW-47 (0.5-2.0)	TW-47-50 (DUP of TW-47 (0.5-2.0))
	Laboratory Sample Identification		A8086102	A8086103	A8080901	A8080903
	Date Collected		1/23/2008	1/23/2008	1/22/2008	1/22/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**120**	**2100**	**30J**	<3.3
Gasoline Range Organics	450	150	**9.6**	**1000**	**10J**	**5.2**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-46 (0-2)**	**TW-46 (2-4)**	**TW-47 (0.5-2.0)**	**TW-47-50 (DUP of TW-47 (0.5-2.0))**
	Laboratory Sample Identification		**A8086102**	**A8086103**	**A8080901**	**A8080903**
	Date Collected		**1/23/2008**	**1/23/2008**	**1/22/2008**	**1/22/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-47 (5-6)**	**TW-48 (0-2)**	**TW-49 (0-2)**	**TW-49 (6-8)**
	Laboratory Sample Identification		**A8080902**	**A7E44113**	**A8086104**	**A8086105/360-14741-1**
	Date Collected		**1/22/2008**	**12/12/2007**	**1/23/2008**	**1/23/2008**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**94**	<3.3	<3.3	**210**
Gasoline Range Organics	450	150	**190J**	<5	**3.4J**	**900**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	**3.6**
Acenaphthene	300	300	n/a	n/a	n/a	<1.3
Acenaphthylene	NA	NA	n/a	n/a	n/a	<1.3
Anthracene	13	13	n/a	n/a	n/a	<1.3
Benzo(a)anthracene	26	35	n/a	n/a	n/a	<1.3
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	<1.3
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	<1.3
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	<1.3
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	<1.3
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	**200**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	**210**
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	**92**
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	**330**
Chrysene	6.4	6.4	n/a	n/a	n/a	<1.3
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	<1.3
Fluoranthene	220	220	n/a	n/a	n/a	<1.3
Fluorene	270	270	n/a	n/a	n/a	<1.3
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	*<1.3*
Naphthalene	325	3.52	n/a	n/a	n/a	**1.9**
Phenanthrene	NA	NA	n/a	n/a	n/a	<1.3
Pyrene	140	140	n/a	n/a	n/a	<1.3
Total EPH	NA	NA	n/a	n/a	n/a	**620**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-47 (5-6)**	**TW-48 (0-2)**	**TW-49 (0-2)**	**TW-49 (6-8)**
	Laboratory Sample Identification		**A8080902**	**A7E44113**	**A8086104**	**A8086105/360-14741-1**
	Date Collected		**1/22/2008**	**12/12/2007**	**1/23/2008**	**1/23/2008**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	*<2.7*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	**180**
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	**180**
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	**130**
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	<54
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	**120**
Ethylbenzene	650	55	n/a	n/a	n/a	**3.6**
m+p-Xylenes	700	700	n/a	n/a	n/a	**0.84**
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	*<5.4*
Napthalene	325	3.52	n/a	n/a	n/a	*<5.4*
o-Xylenes	NA	NA	n/a	n/a	n/a	<2.7
Toluene	1000	40	n/a	n/a	n/a	<2.7
Total VPH	NA	NA	n/a	n/a	n/a	**310**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-50 (0.5-2.0)**	**TW-50-50 (DUP of TW-50 (0.5-2.0))**	**TW-50 (8-10)**	**TW-51 (0-2)**
	Laboratory Sample Identification		**A8092904**	**A8092905**	**A8092906/360-14782-2**	**A8086106**
	Date Collected		**1/25/2008**	**1/25/2008**	**1/25/2008**	**1/23/2008**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**260**	**1600**	**610**	<3.3
Gasoline Range Organics	450	150	**3.1**	**3.2J**	**310**	**28J**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	**1.8**	n/a
Acenaphthene	300	300	n/a	n/a	<0.4	n/a
Acenaphthylene	NA	NA	n/a	n/a	**0.78**	n/a
Anthracene	13	13	n/a	n/a	**0.76**	n/a
Benzo(a)anthracene	26	35	n/a	n/a	<0.4	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	**0.63**	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	**0.51**	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	<0.4	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	<0.4	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	**390**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	**400**	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	**190**	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	**240**	n/a
Chrysene	6.4	6.4	n/a	n/a	**0.96**	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	<0.4	n/a
Fluoranthene	220	220	n/a	n/a	<0.4	n/a
Fluorene	270	270	n/a	n/a	**1.2**	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	<0.4	n/a
Naphthalene	325	3.52	n/a	n/a	<0.4	n/a
Phenanthrene	NA	NA	n/a	n/a	**3.3**	n/a
Pyrene	140	140	n/a	n/a	**2.7**	n/a
Total EPH	NA	NA	n/a	n/a	**830**	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-50 (0.5-2.0)**	**TW-50-50 (DUP of TW-50 (0.5-2.0))**	**TW-50 (8-10)**	**TW-51 (0-2)**
	Laboratory Sample Identification		**A8092904**	**A8092905**	**A8092906/360-14782-2**	**A8086106**
	Date Collected		**1/25/2008**	**1/25/2008**	**1/25/2008**	**1/23/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	*<1.2*	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	**160**	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**160**	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	**250**	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	<24	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**160**	n/a
Ethylbenzene	650	55	n/a	n/a	<1.2	n/a
m+p-Xylenes	700	700	n/a	n/a	**0.95**	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	*<2.4*	n/a
Napthalene	325	3.52	n/a	n/a	<2.4	n/a
o-Xylenes	NA	NA	n/a	n/a	<1.2	n/a
Toluene	1000	40	n/a	n/a	<1.2	n/a
Total VPH	NA	NA	n/a	n/a	**410**	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-51-0-2-50 (DUP of TW-51 (0-2))**	**TW-51 (8-10)**	**TW-52 (0.5-2.0)**
	Laboratory Sample Identification		**A8086107**	**A8086108/360-14741-2**	**A8088801**
	Date Collected		**1/23/2008**	**1/23/2008**	**1/24/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**3700J**	**200**	<3.3
Gasoline Range Organics	450	150	<5	**4600**	**2.8J**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	n/a	**16**	n/a
Acenaphthene	300	300	n/a	<4.7	n/a
Acenaphthylene	NA	NA	n/a	<4.7	n/a
Anthracene	13	13	n/a	<4.7	n/a
Benzo(a)anthracene	26	35	n/a	<4.7	n/a
Benzo(a)pyrene	2.6	16	n/a	<4.7	n/a
Benzo(b)fluoranthene	19	19	n/a	<4.7	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	<4.7	n/a
Benzo(k)fluoranthene	10	10	n/a	<4.7	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	**200**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	**230**	n/a
C19-C36 Aliphatics	NA	NA	n/a	**150**	n/a
C9-C18 Aliphatics	NA	NA	n/a	**550**	n/a
Chrysene	6.4	6.4	n/a	<4.7	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	<4.7	n/a
Fluoranthene	220	220	n/a	<4.7	n/a
Fluorene	270	270	n/a	<4.7	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	<4.7	n/a
Naphthalene	325	3.52	n/a	**8.5**	n/a
Phenanthrene	NA	NA	n/a	<4.7	n/a
Pyrene	140	140	n/a	<4.7	n/a
Total EPH	NA	NA	n/a	**900**	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-51-0-2-50 (DUP of TW-51 (0-2))**	**TW-51 (8-10)**	**TW-52 (0.5-2.0)**
	Laboratory Sample Identification		**A8086107**	**A8086108/360-14741-2**	**A8088801**
	Date Collected		**1/23/2008**	**1/23/2008**	**1/24/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	n/a	*<3*	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	**640**	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	**640**	n/a
C9-C10 Aromatics	NA	NA	n/a	**530**	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	<59	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	**460**	n/a
Ethylbenzene	650	55	n/a	**17**	n/a
m+p-Xylenes	700	700	n/a	**2.2**	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	**54**	n/a
Napthalene	325	3.52	n/a	**8.2**	n/a
o-Xylenes	NA	NA	n/a	**3.4**	n/a
Toluene	1000	40	n/a	<3	n/a
Total VPH	NA	NA	n/a	**1200**	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TW-52 (10-12)	TW-53 (0.5-2.0)	TW-53 (12-13.4)
	Laboratory Sample Identification		A8088802/DL/360-14759-1	A8088803/360-14759-2	A8088804
	Date Collected		1/24/2008	1/24/2008	1/24/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
Petroleum Hydrocarbons (mg/kg)					
Diesel Range Organics	20,000	15,000	**720D**	**56**	**8.2**
Gasoline Range Organics	450	150	**770**	**4400**	**420**
MADEPEPH (mg/kg)					
2-Methylnaphthalene	1461	45	**9.7**	**5**	n/a
Acenaphthene	300	300	<2.6	<0.42	n/a
Acenaphthylene	NA	NA	<2.6	**0.44**	n/a
Anthracene	13	13	<2.6	<0.42	n/a
Benzo(a)anthracene	26	35	<2.6	<0.42	n/a
Benzo(a)pyrene	2.6	16	<2.6	<0.42	n/a
Benzo(b)fluoranthene	19	19	<2.6	<0.42	n/a
Benzo(g,h,i)perylene	NA	NA	<2.6	<0.42	n/a
Benzo(k)fluoranthene	10	10	<2.6	<0.42	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**250**	**68**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**260**	**75**	n/a
C19-C36 Aliphatics	NA	NA	**130**	**12**	n/a
C9-C18 Aliphatics	NA	NA	**820**	**210**	n/a
Chrysene	6.4	6.4	<2.6	<0.42	n/a
Dibenz(a,h)anthracene	2.6	11	<2.6	<0.42	n/a
Fluoranthene	220	220	<2.6	<0.42	n/a
Fluorene	270	270	<2.6	<0.42	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	<2.6	<0.42	n/a
Naphthalene	325	3.52	**2.8**	**2**	n/a
Phenanthrene	NA	NA	<2.6	<0.42	n/a
Pyrene	140	140	<2.6	<0.42	n/a
Total EPH	NA	NA	**1200**	**290**	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-52 (10-12)**	**TW-53 (0.5-2.0)**	**TW-53 (12-13.4)**
	Laboratory Sample Identification		**A8088802/DL/360-14759-1**	**A8088803/360-14759-2**	**A8088804**
	Date Collected		**1/24/2008**	**1/24/2008**	**1/24/2008**
Analyte/Methods (Units)					
	Kansas Tier II Risk-Based Standards				
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**			
	Non-Residental Scenario	**Non-Residental Scenario**			
MADEPVPH (mg/kg)					
Benzene	17	0.08	*<3.4*	*<2.7*	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	**170**	**220**	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	**170**	**220**	n/a
C9-C10 Aromatics	NA	NA	**180**	**260**	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<68	<53	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**150**	**210**	n/a
Ethylbenzene	650	55	<3.4	<2.7	n/a
m+p-Xylenes	700	700	<0.68	<0.53	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<6.8*	*<5.3*	n/a
Napthalene	325	3.52	*<6.8*	*<5.3*	n/a
o-Xylenes	NA	NA	<3.4	<2.7	n/a
Toluene	1000	40	<3.4	<2.7	n/a
Total VPH	NA	NA	**350**	**480**	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TW-54 (0.5-2.0)	TW-54-50 (DUP of TW-57 (0.5-2.0))	TW-55 (0.5-2.0)	TW-55 (4-6)
	Laboratory Sample Identification		A8088805	A8088806	A8088807	A8088808
	Date Collected		1/24/2008	1/24/2008	1/24/2008	1/24/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**380**	**160**	**130**	**5400**
Gasoline Range Organics	450	150	**92J**	**51J**	**3.7J**	**5000**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-54 (0.5-2.0)**	**TW-54-50 (DUP of TW-57 (0.5-2.0))**	**TW-55 (0.5-2.0)**	**TW-55 (4-6)**
	Laboratory Sample Identification		**A8088805**	**A8088806**	**A8088807**	**A8088808**
	Date Collected		**1/24/2008**	**1/24/2008**	**1/24/2008**	**1/24/2008**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-56 (0-2)	TW-57 (0.5-2.0)	TW-58 (0-2)	TW-59 (05-2.0)
Location Identification and Sample Interval (Feet below ground surface)			TW-56 (0-2)	TW-57 (0.5-2.0)	TW-58 (0-2)	TW-59 (05-2.0)
Laboratory Sample Identification			A7E44114	A8106001/DL	A7E54614	A8105701
Date Collected			12/12/2007	1/30/2008	12/13/2007	1/29/2008
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**32J**	**640D**	<3.3	**5.9**
Gasoline Range Organics	450	150	<5	**34**	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-56 (0-2)**	**TW-57 (0.5-2.0)**	**TW-58 (0-2)**	**TW-59 (05-2.0)**
	Laboratory Sample Identification		**A7E44114**	**A8106001/DL**	**A7E54614**	**A8105701**
	Date Collected		**12/12/2007**	**1/30/2008**	**12/13/2007**	**1/29/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**TW-59-50 (DUP of TW-59 (0.5-2.0))**	**TW-60 (0.5-2.0)**	**TW-61 (0.5-2.0)**	**TW-62 (0.5-1.5)**
	Laboratory Sample Identification		**A8105702**	**A7E80003**	**A8106007**	**A7E57003**
	Date Collected		**1/29/2008**	**12/19/2007**	**1/30/2008**	**12/14/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**3.8**	<3.3	**4100J**	<3.3
Gasoline Range Organics	450	150	<5	<5	**24**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TW-59-50 (DUP of TW-59 (0.5-2.0))	TW-60 (0.5-2.0)	TW-61 (0.5-2.0)	TW-62 (0.5-1.5)
	Laboratory Sample Identification		A8105702	A7E80003	A8106007	A7E57003
	Date Collected		1/29/2008	12/19/2007	1/30/2008	12/14/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-63 (0.5-2.0)	TW-64 (0.5-2.0)	TW-64-50 (DUP of TW-64 (0.5-2.0))	TW-65 (2.0-3.0)
Location Identification and Sample Interval (Feet below ground surface)			TW-63 (0.5-2.0)	TW-64 (0.5-2.0)	TW-64-50 (DUP of TW-64 (0.5-2.0))	TW-65 (2.0-3.0)
Laboratory Sample Identification			A7E80004	A7E80001	A7E80002	A7E71701
Date Collected			12/19/2007	12/19/2007	12/19/2007	12/18/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	**340**	**160**	<3.3
Gasoline Range Organics	450	150	<5	**160J**	**77**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-63 (0.5-2.0)**	**TW-64 (0.5-2.0)**	**TW-64-50 (DUP of TW-64 (0.5-2.0))**	**TW-65 (2.0-3.0)**
	Laboratory Sample Identification		**A7E80004**	**A7E80001**	**A7E80002**	**A7E71701**
	Date Collected		**12/19/2007**	**12/19/2007**	**12/19/2007**	**12/18/2007**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-66 (0.7-2.0)**	**TW-67 (0.5-2.0)**	**TW-68 (0.5-2.0)**	**TW-68 (4-6)**
	Laboratory Sample Identification		**A7E64402**	**A8106006**	**A8106004/DL/360-14905-1**	**A8106005DL/360-14905-2**
	Date Collected		**12/17/2007**	**1/30/2008**	**1/30/2008**	**1/30/2008**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**200J**	**160**	**1600D**	**850D**
Gasoline Range Organics	450	150	<5	**28**	**28**	**2400D**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	**2.1**	<4.2
Acenaphthene	300	300	n/a	n/a	<2	<4.2
Acenaphthylene	NA	NA	n/a	n/a	<2	<4.2
Anthracene	13	13	n/a	n/a	<2	<4.2
Benzo(a)anthracene	26	35	n/a	n/a	<2	<4.2
Benzo(a)pyrene	2.6	16	n/a	n/a	<2	*<4.2*
Benzo(b)fluoranthene	19	19	n/a	n/a	<2	<4.2
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	<2	<4.2
Benzo(k)fluoranthene	10	10	n/a	n/a	<2	<4.2
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	**220**	**270**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	**220**	**270**
C19-C36 Aliphatics	NA	NA	n/a	n/a	**35**	**140**
C9-C18 Aliphatics	NA	NA	n/a	n/a	**1200**	**500**
Chrysene	6.4	6.4	n/a	n/a	<2	<4.2
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	<2	*<4.2*
Fluoranthene	220	220	n/a	n/a	<2	<4.2
Fluorene	270	270	n/a	n/a	<2	<4.2
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	*<2*	*<4.2*
Naphthalene	325	3.52	n/a	n/a	<2	*<4.2*
Phenanthrene	NA	NA	n/a	n/a	<2	<4.2
Pyrene	140	140	n/a	n/a	<2	<4.2
Total EPH	NA	NA	n/a	n/a	**1500**	**910**

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-66 (0.7-2.0)	TW-67 (0.5-2.0)	TW-68 (0.5-2.0)	TW-68 (4-6)
Location Identification and Sample Interval (Feet below ground surface)			TW-66 (0.7-2.0)	TW-67 (0.5-2.0)	TW-68 (0.5-2.0)	TW-68 (4-6)
Laboratory Sample Identification			A7E64402	A8106006	A8106004/DL/360-14905-1	A8106005DL/360-14905-2
Date Collected			12/17/2007	1/30/2008	1/30/2008	1/30/2008
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	*<2.5*	*<3.2*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	**100**	**800**
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**100**	**800**
C9-C10 Aromatics	NA	NA	n/a	n/a	**210**	**560**
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	<51	**300**
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**210**	**860**
Ethylbenzene	650	55	n/a	n/a	<2.5	<3.2
m+p-Xylenes	700	700	n/a	n/a	<0.51	<0.64
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	*<5.1*	*<6.4*
Napthalene	325	3.52	n/a	n/a	*<5.1*	*<6.4*
o-Xylenes	NA	NA	n/a	n/a	<2.5	<3.2
Toluene	1000	40	n/a	n/a	<2.5	<3.2
Total VPH	NA	NA	n/a	n/a	**310**	**1700**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		TW-69 (0.5-2.0)	TW-70 (0.5-2.0)	TW-71 (0.5-2.0)	TW-72 (0-2)
	Laboratory Sample Identification		A7E64401	A8106002	A8106003	A7D51002
	Date Collected		12/17/2007	1/30/2008	1/30/2008	11/19/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	**140**	**110**	<3.3
Gasoline Range Organics	450	150	<5	<5	<5	**0.85J**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-69 (0.5-2.0)	TW-70 (0.5-2.0)	TW-71 (0.5-2.0)	TW-72 (0-2)
	Laboratory Sample Identification		A7E64401	A8106002	A8106003	A7D51002
	Date Collected		12/17/2007	1/30/2008	1/30/2008	11/19/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

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Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-72 (11-12.5)	TW-73 (0-2)	TW-73 (11.5-12.5)	TW-74 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			TW-72 (11-12.5)	TW-73 (0-2)	TW-73 (11.5-12.5)	TW-74 (0-2)
Laboratory Sample Identification			A7D51003	A7D51004	A7D51005/360-13655-4	A7E21501
Date Collected			11/19/2007	11/19/2007	11/19/2007	12/7/2007
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**1600**	<3.3	**110**	**8**
Gasoline Range Organics	450	150	**490**	<5	**180**	**2.9J**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	<4.1	n/a
Acenaphthene	300	300	n/a	n/a	<4.1	n/a
Acenaphthylene	NA	NA	n/a	n/a	<4.1	n/a
Anthracene	13	13	n/a	n/a	<4.1	n/a
Benzo(a)anthracene	26	35	n/a	n/a	<4.1	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	*<4.1*	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	<4.1	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	<4.1	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	<4.1	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	**850**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	**850**	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	**830**	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	**1100**	n/a
Chrysene	6.4	6.4	n/a	n/a	<4.1	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	*<4.1*	n/a
Fluoranthene	220	220	n/a	n/a	<4.1	n/a
Fluorene	270	270	n/a	n/a	<4.1	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	*<4.1*	n/a
Naphthalene	325	3.52	n/a	n/a	*<4.1*	n/a
Phenanthrene	NA	NA	n/a	n/a	<4.1	n/a
Pyrene	140	140	n/a	n/a	<4.1	n/a
Total EPH	NA	NA	n/a	n/a	**2800**	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-72 (11-12.5)	TW-73 (0-2)	TW-73 (11.5-12.5)	TW-74 (0-2)
	Laboratory Sample Identification		A7D51003	A7D51004	A7D51005/360-13655-4	A7E21501
	Date Collected		11/19/2007	11/19/2007	11/19/2007	12/7/2007
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	*<3.8*	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	**150**	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**150**	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	**130**	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	**81**	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**210**	n/a
Ethylbenzene	650	55	n/a	n/a	<3.8	n/a
m+p-Xylenes	700	700	n/a	n/a	<0.77	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	*<7.7*	n/a
Napthalene	325	3.52	n/a	n/a	*<7.7*	n/a
o-Xylenes	NA	NA	n/a	n/a	<3.8	n/a
Toluene	1000	40	n/a	n/a	<3.8	n/a
Total VPH	NA	NA	n/a	n/a	**360**	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**TW-74 (14-15)**	**TW-75 (14-15)**	**TW-76 (13-15)**	**TW-77 (18-20)**
	Laboratory Sample Identification		**A7E21502**	**A7E21503**	**A7E21504**	**A7E21505/360-14022-1**
	Date Collected		**12/7/2007**	**12/7/2007**	**12/7/2007**	**12/7/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	<3.3	<3.3	**700**	**12**
Gasoline Range Organics	450	150	<5	<5	**9.3**	**90**
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	<4.2
Acenaphthene	300	300	n/a	n/a	n/a	<4.2
Acenaphthylene	NA	NA	n/a	n/a	n/a	<4.2
Anthracene	13	13	n/a	n/a	n/a	<4.2
Benzo(a)anthracene	26	35	n/a	n/a	n/a	<4.2
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	*<4.2*
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	<4.2
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	<4.2
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	<4.2
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	**420**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	**420**
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	**1600**
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	<42
Chrysene	6.4	6.4	n/a	n/a	n/a	<4.2
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	*<4.2*
Fluoranthene	220	220	n/a	n/a	n/a	<4.2
Fluorene	270	270	n/a	n/a	n/a	<4.2
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	*<4.2*
Naphthalene	325	3.52	n/a	n/a	n/a	*<4.2*
Phenanthrene	NA	NA	n/a	n/a	n/a	<4.2
Pyrene	140	140	n/a	n/a	n/a	<4.2
Total EPH	NA	NA	n/a	n/a	n/a	**2000**

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**TW-74 (14-15)**	**TW-75 (14-15)**	**TW-76 (13-15)**	**TW-77 (18-20)**
	Laboratory Sample Identification		**A7E21502**	**A7E21503**	**A7E21504**	**A7E21505/360-14022-1**
	Date Collected		**12/7/2007**	**12/7/2007**	**12/7/2007**	**12/7/2007**
Analyte/Methods (Units)						
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**				
	Non-Residental Scenario	**Non-Residental Scenario**				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	*<0.26*
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	**10**
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	**10**
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	**31**
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	**9.5**
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	**40**
Ethylbenzene	650	55	n/a	n/a	n/a	<0.26
m+p-Xylenes	700	700	n/a	n/a	n/a	<0.053
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	*<0.53*
Napthalene	325	3.52	n/a	n/a	n/a	**0.61**
o-Xylenes	NA	NA	n/a	n/a	n/a	<0.26
Toluene	1000	40	n/a	n/a	n/a	<0.26
Total VPH	NA	NA	n/a	n/a	n/a	**51**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-77 (20-22)	TW-78 (16-18)	TW-79 (0.5-2.0)	TW-80 (0.5-2.0)
Location Identification and Sample Interval (Feet below ground surface)			TW-77 (20-22)	TW-78 (16-18)	TW-79 (0.5-2.0)	TW-80 (0.5-2.0)
Laboratory Sample Identification			A7E21506	A7E21507	A8092903	A8092901
Date Collected			12/7/2007	12/7/2007	1/25/2008	1/25/2008
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**190**	**40**	<3.3	<3.3
Gasoline Range Organics	450	150	**200**	**56**	<5	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-77 (20-22)	TW-78 (16-18)	TW-79 (0.5-2.0)	TW-80 (0.5-2.0)
	Laboratory Sample Identification		A7E21506	A7E21507	A8092903	A8092901
	Date Collected		12/7/2007	12/7/2007	1/25/2008	1/25/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to GW Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TW-80 (10-12.6)
Location Identification and Sample Interval (Feet below ground surface)			TW-80 (10-12.6)
Laboratory Sample Identification			A8092902/360-14782-1
Date Collected			1/25/2008
Petroleum Hydrocarbons (mg/kg)			
Diesel Range Organics	20,000	15,000	**4600**
Gasoline Range Organics	450	150	**120**
MADEPEPH (mg/kg)			
2-Methylnaphthalene	1461	45	**9.8**
Acenaphthene	300	300	<8
Acenaphthylene	NA	NA	<8
Anthracene	13	13	<8
Benzo(a)anthracene	26	35	<8
Benzo(a)pyrene	2.6	16	*<8*
Benzo(b)fluoranthene	19	19	<8
Benzo(g,h,i)perylene	NA	NA	<8
Benzo(k)fluoranthene	10	10	<8
C11-C22 Aromatics (Adjusted)	NA	NA	**1200**
C11-C22 Aromatics (unadjusted)	NA	NA	**1200**
C19-C36 Aliphatics	NA	NA	**490**
C9-C18 Aliphatics	NA	NA	**2700**
Chrysene	6.4	6.4	*<8*
Dibenz(a,h)anthracene	2.6	11	*<8*
Fluoranthene	220	220	<8
Fluorene	270	270	**8.6**
Indeno(1,2,3-cd)pyrene	0.76	0.76	*<8*
Naphthalene	325	3.52	<8
Phenanthrene	NA	NA	<8
Pyrene	140	140	<8
Total EPH	NA	NA	**4400**

Table 7c

Soil Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-80 (10-12.6)**
	Laboratory Sample Identification		**A8092902/360-14782-1**
	Date Collected		**1/25/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**		
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**	
	Non-Residental Scenario	**Non-Residental Scenario**	
MADEPVPH (mg/kg)			
Benzene	17	0.08	*<2.5*
C5-C8 Aliphatics (adjusted)	NA	NA	<50
C5-C8 Aliphatics (unadjusted)	NA	NA	<50
C9-C10 Aromatics	NA	NA	<50
C9-C12 Aliphatics (adjusted)	NA	NA	<50
C9-C12 Aliphatics (unadjusted)	NA	NA	<50
Ethylbenzene	650	55	<2.5
m+p-Xylenes	700	700	<0.5
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000	0.09	*<5*
Napthalene	325	3.52	*<5*
o-Xylenes	NA	NA	<2.5
Toluene	1000	40	<2.5
Total VPH	NA	NA	<50

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
n/a	Not analyzed
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-001 (0.5-1.5)	BH-002 (0.5-1.5)	BH-003 (0.5-1.5)	BH-004 (0.5-1.5)	BH-005 (0.5-1.5)
Laboratory Sample Identification		A7D87408	A7D87407	A7D87409	A7D87401	A7D87403
Date Collected		11/30/2007	11/30/2007	11/30/2007	11/30/2007	11/30/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<18.4	<18.8	<18	<18.9	<18.9
Arsenic	38	**5.8**	**2.7**	**7.3**	**8.2**	**5**
Barium	140000	**111**	**219**	**251**	**184**	**134**
Beryllium	4100	**0.95**	**0.8**	**1.2**	**1.1**	**0.84**
Cadmium	1000	<0.24	<0.25	<0.24	**0.53**	<0.25
Chromium, Total	4000	**15.7**	**14.5**	**20.9**	**20.8**	**14.9**
Cobalt	NA	**21.5**	**9.7**	**8.9**	**8.7**	**8.8**
Lead	1000	**7.9**	**5.8**	**14.9**	**108**	**25**
Magnesium	NA	**5430**	**6350**	**4090**	**2770**	**1790**
Manganese	95000	**137**	**122**	**249**	**509**	**463**
Mercury	20	<0.021	<0.023	<0.022	<0.022	**0.025**
Nickel	41000	**37.1**	**32.4**	**21**	**19.2**	**13.5**
Potassium	NA	**3760**	**3140**	**2340**	**2510**	**1840**
Selenium	10000	<4.9	<5	<4.8	<5	<5
Silver	10000	<0.61	<0.63	<0.6	<0.63	<0.63
Vanadium	14000	**13.1**	**10.2**	**39.6**	**39.1**	**31.1**
Zinc	610000	**25.3**	**24.5**	**35.4**	**48.9**	**40.8**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-006 (0.5-1.5)	BH-007 (0.5-1.5)	BH-008 (0.5-1.5)	BH-009 (0.5-1.5)	BH-010 (0.5-1.5)
Laboratory Sample Identification		A7D87402	A7D87406	A7D87404	A7D87405	A7D87410
Date Collected		11/30/2007	11/30/2007	11/30/2007	11/30/2007	11/30/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<17.6	<19.5	<19.4	<17.1	<18.1
Arsenic	38	**4.7**	**6.9**	**4**	**4.3**	**4.9**
Barium	140000	**130**	**220**	**47.1**	**88.6**	**226**
Beryllium	4100	**1**	**1.3**	**0.42**	**0.67**	**0.78**
Cadmium	1000	<0.23	<0.26	<0.26	<0.23	<0.24
Chromium, Total	4000	**17.5**	**21.6**	**12.2**	**12.8**	**14.7**
Cobalt	NA	**6.5**	**9.7**	**2.8**	**5.6**	**10**
Lead	1000	**17.2**	**20.7**	**5.4**	**11.4**	**5.1**
Magnesium	NA	**3370**	**2670**	**4060**	**1720**	**5530**
Manganese	95000	**190**	**481**	**135**	**180**	**87.7**
Mercury	20	<0.02	<0.022	<0.022	<0.02	<0.021
Nickel	41000	**17**	**19**	**12**	**10**	**31.8**
Potassium	NA	**1680**	**2050**	**1120**	**1230**	**3800**
Selenium	10000	<4.7	<5.2	<5.2	<4.6	<4.8
Silver	10000	<0.59	<0.65	<0.65	<0.57	<0.6
Vanadium	14000	**32.9**	**43**	**12.5**	**25.3**	**8.3**
Zinc	610000	**35.5**	**42.6**	**7.9**	**20.7**	**21.4**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-011 (0.5-1.5)	BH-012 (0.5-1.5)	BH-013 (0.5-1.5)	BH-014 (0.5-1.5)	BH-015 (0.5-1.5)
Laboratory Sample Identification		A7D87412	A7D87411	A7D87415	A7D87414	A7D87413
Date Collected		11/30/2007	11/30/2007	11/30/2007	11/30/2007	11/30/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<18	<19.2	<18	<17.6	<18.8
Arsenic	38	**11.2**	**2.8**	**4.5**	**6**	**4.4**
Barium	140000	**281**	**84**	**90.6**	**149**	**174**
Beryllium	4100	**1**	**0.84**	**0.83**	**0.87**	**1**
Cadmium	1000	<0.24	<0.26	<0.24	<0.24	<0.25
Chromium, Total	4000	**17.2**	**13.8**	**15.3**	**17.2**	**18.7**
Cobalt	NA	**11.6**	**9.5**	**7.9**	**8.6**	**9.8**
Lead	1000	**11.4**	**6.6**	**6.3**	**22.1**	**9.1**
Magnesium	NA	**4320**	**4930**	**25000**	**25000**	**7860**
Manganese	95000	**198**	**135**	**313**	**352**	**251**
Mercury	20	<0.021	<0.022	<0.023	<0.022	<0.02
Nickel	41000	**23**	**27.5**	**25.2**	**21.7**	**25.5**
Potassium	NA	**2600**	**3540**	**3380**	**3270**	**3570**
Selenium	10000	<4.8	<5.1	<4.8	<4.7	<5
Silver	10000	<0.6	<0.64	<0.6	<0.59	<0.63
Vanadium	14000	**28.4**	**11.5**	**18.3**	**25.4**	**24.5**
Zinc	610000	**31.7**	**23**	**26.9**	**33.1**	**28.3**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-016 (0.5-1.5)	BH-017 (0.5-1.5)	BH-018 (0.5-1.5)	BH-019 (0.5-1.5)	BH-020 (0.5-1.5)
Laboratory Sample Identification		A7E54612	A7E57011	A7E54613	A7D87416	A7D87417
Date Collected		12/13/2007	12/14/2007	12/13/2007	11/30/2007	11/30/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<18.2	<20.3	<18.1	<18.9	<18.9
Arsenic	38	**2.8**	**7.1**	**5.8**	**4.6**	**6.6**
Barium	140000	**166**	**232**	**172**	**85**	**119**
Beryllium	4100	**0.51**	**1.2**	**0.83**	**0.75**	**1.2**
Cadmium	1000	<0.24	<0.27	<0.24	<0.25	<0.25
Chromium, Total	4000	**8.6**	**20.5**	**14.1**	**13.4**	**23**
Cobalt	NA	**2.4**	**9.6**	**7.4**	**7.6**	**8.8**
Lead	1000	**3.4**	**16.1**	**12.8**	**14.9**	**14.4**
Magnesium	NA	**35600**	**2980**	**3090**	**1790**	**3160**
Manganese	95000	**210**	**777**	**427**	**349**	**288**
Mercury	20	<0.018	<0.022	**0.045**	**0.032**	<0.021
Nickel	41000	**10**	**23**	**15.1**	**10.4**	**28.6**
Potassium	NA	**1240**	**2060**	**1730**	**1490**	**2080**
Selenium	10000	<4.9	<5.4	<4.8	<5	<5
Silver	10000	<0.61	<0.68	<0.6	<0.63	<0.63
Vanadium	14000	**12.6**	**40.9**	**34**	**28**	**36.5**
Zinc	610000	**10.9**	**40.7**	**31.5**	**28.8**	**48.2**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-021 (0.5-1.5)	BH-022 (0.5-1.5)	BH-023 (0.5-1.5)	BH-024 (0.5-1.5)	BH-025 (0.5-1.5)
Laboratory Sample Identification		A7D87418	A8042202	A8042203	A8042204	A7E29006
Date Collected		11/30/2007	1/10/2008	1/10/2008	1/10/2008	12/10/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<20.6	<18.5	<19.4	<18.2	<20.1
Arsenic	38	**5.4**	**4.2**	**4.7**	**4.4**	**5.8**
Barium	140000	**168**	**91.8**	**388**	**341**	**189**
Beryllium	4100	**1.1**	**0.86**	**0.93**	**0.96**	**0.74**
Cadmium	1000	<0.27	<0.25	<0.26	<0.24	**1.3**
Chromium, Total	4000	**22**	**17.1**	**17.4**	**19.2**	**46.6**
Cobalt	NA	**8.4J**	**8.8**	**10**	**9.5**	**6.3**
Lead	1000	**21**	**11.9**	**14.2**	**13.7**	**76.6**
Magnesium	NA	**3560**	**2680**	**3510**	**2670**	**2340**
Manganese	95000	**630**	**255**	**432**	**569**	**368**
Mercury	20	<0.024	<0.022	<0.02	<0.022	**0.182**
Nickel	41000	**20.4**	**16.3**	**17.6**	**17.2**	**20.3**
Potassium	NA	**2350**	**1580**	**1670**	**1850**	**3070**
Selenium	10000	<5.5	<4.9	<5.2	<4.9	<5.4
Silver	10000	<0.69	<0.62	<0.65	<0.61	<0.67
Vanadium	14000	**37.9**	**29.7**	**33.4**	**35.8**	**41.8**
Zinc	610000	**41**	**35.6**	**38.5**	**38.3**	**144**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-026 (0.5-1.5)	BH-027 (0.5-1.5)	BH-028 (0.5-1.5)	BH-029 (0.5-1.5)	BH-030 (0.5-1.5)
Laboratory Sample Identification		A7E29005	A7E29004	A7E29007	A7E57010	A7E57009
Date Collected		12/10/2007	12/10/2007	12/10/2007	12/14/2007	12/14/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<17.5	<19.9	<20.1	<17.6	<20.7
Arsenic	38	**5.7**	**5.4**	**5.6**	**4.6**	**7.4**
Barium	140000	**170**	**164**	**159**	**240**	**315**
Beryllium	4100	**0.97**	**0.93**	**1**	**1.1**	**0.99**
Cadmium	1000	<0.23	<0.27	<0.27	<0.23	**0.63**
Chromium, Total	4000	**18.2**	**16.8**	**19.4**	**17.4**	**19.1**
Cobalt	NA	**9.1**	**7.3**	**7.7**	**7.5**	**7.6**
Lead	1000	**20.7**	**17.4**	**14.3**	**14.7**	**52.2**
Magnesium	NA	**2710**	**2570**	**2840**	**2990**	**3370**
Manganese	95000	**485**	**294**	**233**	**206**	**378**
Mercury	20	**0.023**	<0.022	<0.02	<0.022	<0.021
Nickel	41000	**16.2**	**14.3**	**15.9**	**14.8**	**17.4**
Potassium	NA	**2140**	**2100**	**2270**	**1730**	**2920**
Selenium	10000	<4.7	<5.3	<5.4	<4.7	<5.5
Silver	10000	<0.58	<0.66	<0.67	<0.59	<0.69
Vanadium	14000	**35.8**	**33.9**	**37.5**	**31.5**	**35**
Zinc	610000	**50.6**	**52.7**	**40.3**	**37.5**	**62.3**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 7 of 83)

Location Identification and Sample Interval (Feet below ground surface)		BH-031 (0.5-1.5)	BH-032 (0.5-1.0)	BH-033 (0.5-1.5)	BH-034 (0.5-1.0)	BH-035 (0.5-1.5)
Laboratory Sample Identification		A7E44101	A7E44103	A7E57008	A7E44102	A7E44106
Date Collected		12/12/2007	12/12/2007	12/14/2007	12/12/2007	12/12/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<18.3	<20.9	<25.3	<18	<19.2
Arsenic	38	**4.9**	**8.5**	**7.2**	**3.6**	**6.7**
Barium	140000	**94.5**	**433**	**192**	**175**	**213**
Beryllium	4100	**1**	**1.4**	**1.1**	**0.96**	**1**
Cadmium	1000	<0.24	<0.28	**1.1**	<0.24	<0.26
Chromium, Total	4000	**18**	**28.9**	**35.4**	**17**	**19**
Cobalt	NA	**9.7**	**8.7**	**7**	**8.4**	**7.2**
Lead	1000	**15.5**	**18.2**	**61.7**	**7.8**	**16.1**
Magnesium	NA	**3850**	**4470**	**3520**	**4460**	**3110**
Manganese	95000	**485**	**267**	**295**	**283**	**455**
Mercury	20	<0.022	**0.025**	**0.047**	<0.021	<0.022
Nickel	41000	**17.9**	**32.2**	**21**	**22.9**	**18**
Potassium	NA	**1740**	**2690**	**4390**	**3360**	**2200**
Selenium	10000	<4.9	<5.6	<6.8	<4.8	<5.1
Silver	10000	<0.61	<0.7	<0.84	<0.6	<0.64
Vanadium	14000	**32.5**	**49.5**	**44.5**	**18.7**	**37**
Zinc	610000	**46.3**	**73.2**	**75.7**	**25**	**44.1**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-036 (0.5-1.5)	BH-037 (0.5-1.5)	BH-038-(0.5-1.5)	BH-039 (0.5-1.5)	BH-040 (0.5-1.5)
Laboratory Sample Identification		A7E44105	A7E44104	A7E57007	A7E57006	A8042212
Date Collected		12/12/2007	12/12/2007	12/14/2007	12/14/2007	12/10/2008
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway (A) Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<18.9	<18.5	<18.2	<19.9	<19.1
Arsenic	38	**6.1**	**7.8**	**5.2**	**8.2**	**5.8**
Barium	140000	**307**	**233**	**133**	**227**	**283**
Beryllium	4100	**0.9**	**1.1**	**1**	**0.89**	**0.9**
Cadmium	1000	**0.25**	<0.25	<0.24	<0.26	<0.26
Chromium, Total	4000	**79.6**	**22.2**	**18**	**20.8**	**20.5**
Cobalt	NA	**7.4**	**9.4**	**8**	**6.3**	**9.4**
Lead	1000	**89.6**	**15.6**	**14.1**	**22**	**23**
Magnesium	NA	**9110**	**2870**	**2860**	**2810**	**3150**
Manganese	95000	**297**	**316**	**361**	**479**	**518**
Mercury	20	**0.06**	<0.021	<0.021	<0.022	<0.023
Nickel	41000	**18**	**17.4**	**17.8**	**17.7**	**18.8**
Potassium	NA	**2330**	**2210**	**2220**	**2070**	**2370**
Selenium	10000	<5	<4.9	<4.9	<5.3	<5.1
Silver	10000	<0.63	<0.62	<0.61	<0.66	<0.64
Vanadium	14000	**34.2**	**43.3**	**31.9**	**32.5**	**37.5**
Zinc	610000	**177**	**46.3**	**40.4**	**48.9**	**53.4**

(mg/kg)	milligrams per kilogram
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Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-041 (0.5-1.5)	BH-042 (0.5-1.5)	BH-043 (0.5-1.5)	BH-044 (0.5-1.5)	BH-045 (0.5-1.5)
Laboratory Sample Identification		A7E57005	A8042211	A7E57004	A8042210	A8042209
Date Collected		12/14/2007	12/10/2008	12/14/2007	1/10/2008	1/10/2008
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<19.4	<18.8	<19.3	<18.6	<18.6
Arsenic	38	**5.2**	**5.7**	**5.6**	**5.7**	**4.8**
Barium	140000	**87.6**	**114**	**293**	**155**	**196**
Beryllium	4100	**1**	**0.98**	**1.2**	**0.95**	**0.95**
Cadmium	1000	<0.26	<0.25	<0.26	<0.25	<0.25
Chromium, Total	4000	**18.1**	**20.4**	**21.2**	**20**	**20.2**
Cobalt	NA	**8.2**	**8**	**10**	**13**	**8.7**
Lead	1000	**13.9**	**15.2**	**15.6**	**16.7**	**14**
Magnesium	NA	**3660**	**2970**	**3250**	**3480**	**2860**
Manganese	95000	**409**	**372**	**548**	**692**	**423**
Mercury	20	<0.022	<0.021	<0.021	**0.027**	**0.03**
Nickel	41000	**16.9**	**18.7**	**24.8**	**19.1**	**17.1**
Potassium	NA	**2140**	**2000**	**2170**	**2530**	**1760**
Selenium	10000	<5.2	<5	<5.2	<5	<5
Silver	10000	<0.65	<0.63	<0.64	<0.62	<0.62
Vanadium	14000	**32.9**	**39.7**	**36.7**	**39.6**	**37.2**
Zinc	610000	**43.3**	**45.4**	**44**	**45.8**	**42.2**

(mg/kg)	milligrams per kilogram
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(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-046 (0.5-1.5)	BH-048 (0.5-1.5)	BH-050 (0.5-1.5)	BH-051 (0.5-1.5)	BH-053 (0.5-1.5)
Laboratory Sample Identification		A8042208	A8042201	A8042213	A8042214	A7E44110
Date Collected		1/10/2008	1/10/2008	1/10/2008	1/10/2008	12/12/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<20.4	<24.7	<21.3	<21	<20.1
Arsenic	38	**4.8**	<3.3	**4**	**5.4**	**5.7**
Barium	140000	**84**	**278**	**109**	**212**	**93.4**
Beryllium	4100	**0.65**	**0.33J**	**0.8**	**0.77**	**1**
Cadmium	1000	<0.27	<0.33	<0.28	<0.28	<0.27
Chromium, Total	4000	**14.2**	**5.2J**	**16.2**	**19.3**	**18.9**
Cobalt	NA	**7.1**	**1.7J**	**10**	**8.2**	**10.7**
Lead	1000	**13.3**	**4.3J**	**17.4**	**13.1**	**17.3**
Magnesium	NA	**1830**	**4560**	**2310**	**14300**	**3200**
Manganese	95000	**225**	**223**	**387**	**570**	**518**
Mercury	20	<0.022	**0.028**	<0.022	<0.022	<0.02
Nickel	41000	**10.1**	**5.4J**	**14.5**	**20**	**17.5**
Potassium	NA	**1710**	**649**	**1560**	**2160**	**1730**
Selenium	10000	<5.4	<6.6	<5.7	<5.6	<5.4
Silver	10000	<0.68	<0.82	<0.71	<0.7	<0.67
Vanadium	14000	**31.7**	**7.6J**	**31.8**	**31.9**	**38.3**
Zinc	610000	**27.1**	**15.3J**	**31.5**	**37.7**	**42.5**

(mg/kg)	milligrams per kilogram
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Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-054 (0.5-1.5)	BH-055 (0.5-1.5)	BH-056 (0.5-1.5)	BH-057 (0.5-1.5)	BH-058 (0.5-1.5)
Laboratory Sample Identification		A7E44112	A7E44111	A7E44109	A7E44108	A7E44107
Date Collected		12/12/2007	12/12/2007	12/12/2007	12/12/2007	12/12/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<18.7	<18.9	<18.7	<19.4	<19.4
Arsenic	38	**5.7**	**6.1**	**5.6**	**7**	**6.6**
Barium	140000	**207**	**278**	**216**	**224**	**218**
Beryllium	4100	**0.98**	**1.1**	**1.1**	**1.1**	**1.1**
Cadmium	1000	<0.25	<0.25	<0.25	<0.26	<0.26
Chromium, Total	4000	**19.4**	**22.5**	**21.3**	**21.3**	**20.7**
Cobalt	NA	**9.8**	**10.8**	**9.3**	**10.3**	**9.9**
Lead	1000	**158**	**121**	**60**	**20.5**	**18.2**
Magnesium	NA	**2830**	**3090**	**3000**	**2880**	**2610**
Manganese	95000	**386**	**339**	**565**	**443**	**377**
Mercury	20	<0.022	<0.021	<0.022	<0.022	<0.02
Nickel	41000	**17**	**20.2**	**21.1**	**19.2**	**17.1**
Potassium	NA	**2050**	**1990**	**2210**	**2120**	**1860**
Selenium	10000	<5	<5.1	<5	<5.2	<5.2
Silver	10000	<0.62	<0.63	<0.62	<0.65	<0.65
Vanadium	14000	**37.6**	**41.2**	**40.3**	**41.3**	**41.1**
Zinc	610000	**49**	**60.4**	**51.4**	**47.3**	**41.4**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-059 (0-2)	BH-060 (0-2)	BH-061 (0-2)	BH-062 (0-2)	BH-063 (0-2)
Laboratory Sample Identification		A7D57809	A7D57810	A7D57808	A7D57801	A7D57802
Date Collected		11/20/2007	11/20/2007	11/20/2007	11/20/2007	11/20/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.5	<21.1	<21.2	<18.5	<22
Arsenic	38	**6.6**	**6.9**	**7**	**4.5**	**5.7**
Barium	140000	**373**	**418**	**332**	**245**	**163**
Beryllium	4100	**0.96**	**0.89**	**1.4**	**0.89**	**0.82**
Cadmium	1000	<0.26	**0.46**	<0.28	<0.25	<0.29
Chromium, Total	4000	**19.4**	**21.9**	**25.7**	**17.4**	**13.2**
Cobalt	NA	**8.1**	**7.5**	**10.5**	**11.9**	**10.9**
Lead	1000	**1460**	**1740**	**26.3**	**357**	**140**
Magnesium	NA	**4790**	**4700**	**3310**	**2660**	**1660**
Manganese	95000	**585**	**364**	**432**	**801**	**635**
Mercury	20	**0.023**	**0.079**	**0.026**	**0.027**	<0.023
Nickel	41000	**17.8**	**18.2**	**29.9**	**18.5**	**14.2**
Potassium	NA	**1800**	**2040**	**2360**	**2510**	**1860**
Selenium	10000	<5.2	<5.6	<5.6	<4.9	<5.9
Silver	10000	<0.65	<0.7	<0.71	<0.62	<0.73
Vanadium	14000	**37.5**	**43.7**	**44.2**	**33.4**	**30.4**
Zinc	610000	**61.1**	**63.3**	**47.8**	**36.5**	**27**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-064 (0-2)	BH-065 (0-2)	BH-066 (0-2)	BH-067 (0-2)	BH-068 (0.5-1.5)
Laboratory Sample Identification		A7D57814	A7D57812	A7D57813	A7D57803	A7E12308
Date Collected		11/20/2007	11/20/2007	11/20/2007	11/20/2007	12/5/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway (A) Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<20.4	<19.5	<19.8	<20.4	<20.4
Arsenic	38	**5.8**	**6.5**	**4.8**	**4.2J**	**5.7**
Barium	140000	**236**	**119**	**164**	**133J**	**269**
Beryllium	4100	**1.1**	**0.91**	**0.89**	**0.98J**	**0.89**
Cadmium	1000	<0.27	<0.26	<0.26	<0.27	**0.83**
Chromium, Total	4000	**17.7**	**15.5**	**15**	**16.6**	**20.4**
Cobalt	NA	**11.8**	**11**	**10.3**	**8.8**	**6.2**
Lead	1000	**27.3**	**29.4**	**47.6**	**87.2J**	**45.4**
Magnesium	NA	**2220**	**1710**	**1720**	**1940**	**2610**
Manganese	95000	**756**	**287**	**556**	**481**	**260**
Mercury	20	<0.023	<0.024	<0.022	<0.022	<0.022
Nickel	41000	**17.6**	**15.5**	**13.9**	**14.3**	**17**
Potassium	NA	**1510**	**1900**	**1750**	**2250**	**1910**
Selenium	10000	<5.4	<5.2	<5.3	<5.4	<5.4
Silver	10000	<0.68	<0.65	<0.66	<0.68	<0.68
Vanadium	14000	**33.2**	**39.7**	**33.7**	**33.8**	**42**
Zinc	610000	**30.5**	**28.4**	**27.9**	**27.5**	**45.2**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-069 (0.5-1.5)	BH-070 (0.5-1.5)	BH-071 (0.5-1.5)	BH-071-50 (DUP of BH-071 (0.5-1.5))	BH-072 (0.5-1.5)
Laboratory Sample Identification		A7E121307	A7E12309	A7E12806	A7E12807	A7E12805
Date Collected		12/5/2007	12/5/2007	12/6/2007	12/6/2007	12/6/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.2	<19.2	<18.8	<17.1	<19
Arsenic	38	**5.6**	**7.3**	**7.4J**	**7**	**7.5**
Barium	140000	**235**	**252**	**212**	**160**	**330**
Beryllium	4100	**1.1**	**0.94**	**0.71**	**0.7**	**0.75**
Cadmium	1000	<0.26	**0.35**	**0.3**	**0.23**	**0.48**
Chromium, Total	4000	**21.9**	**25**	**12.9**	**14.1**	**20.6**
Cobalt	NA	**10.3**	**7.9**	**15.5J**	**10.3**	**7**
Lead	1000	**15.1**	**323**	**49J**	**1260**	**1140**
Magnesium	NA	**3830**	**3750**	**5690J**	**5370**	**4340**
Manganese	95000	**746**	**345**	**156J**	**714**	**301**
Mercury	20	<0.023	**0.098**	<0.02	<0.019	**0.048**
Nickel	41000	**22.7**	**19**	**19.1**	**14.2**	**15.4**
Potassium	NA	**2070**	**2010**	**1510**	**1570**	**1750**
Selenium	10000	<5.1	<5.1	<5	<4.6	<5.1
Silver	10000	<0.64	<0.64	<0.63	<0.57	<0.63
Vanadium	14000	**37.6**	**37.7**	**26.8**	**28.7**	**36.2**
Zinc	610000	**47.6**	**71.6**	**30.6**	**33.8**	**67.4**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-073 (0.5-1.5)	BH-074	BH-075	BH-076	BH-077 (0.5-1.5)
Laboratory Sample Identification		A7E12804	A7D65315	A7D65316	A7D65314	A7E12803
Date Collected		12/6/2007	11/26/2007	11/26/2007	11/26/2007	12/6/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<17.6	<16.9	<17.2	<17.3	<17.3
Arsenic	38	**7.3**	**3.2**	**2.7**	**2.7**	**4.8**
Barium	140000	**398**	**113**	**90.5**	**82.9**	**149**
Beryllium	4100	**0.7**	**0.38**	**0.26**	**0.3**	**0.66**
Cadmium	1000	**0.57**	<0.23	<0.23	<0.23	<0.23
Chromium, Total	4000	**20.3**	**10.4**	**6.8**	**7.7**	**12.7**
Cobalt	NA	**8.6**	**2.8**	**1.7**	**2.1**	**9.7**
Lead	1000	**1210**	**6.1**	**5.7**	**3.6**	**16.7**
Magnesium	NA	**4390**	**29700**	**24600**	**36400**	**1590**
Manganese	95000	**404**	**167**	**141**	**175**	**567**
Mercury	20	**0.087**	<0.02	<0.019	<0.02	<0.02
Nickel	41000	**14**	**10**	**5.5**	**6.8**	**11.2**
Potassium	NA	**1710**	**1490**	**928**	**1110**	**1440**
Selenium	10000	<4.7	<4.5	<4.6	<4.6	<4.6
Silver	10000	<0.59	<0.56	<0.57	<0.58	<0.58
Vanadium	14000	**33.8**	**9.7**	**6.9**	**7.4**	**27.5**
Zinc	610000	**57.7**	**15.8**	**8.2**	**9.3**	**29.8**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-078 (0.5-1.5)	BH-079 (0.5-1.5)	BH-080 (0.5-1.5)	BH-081 (0.5-1.5)	BH-082 (0.5-1.5)
Laboratory Sample Identification		A7E12802	A7E12801	A7E12812	A7E12811	A7E12813
Date Collected		12/6/2007	12/6/2007	12/6/2007	12/6/2007	12/6/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<18.2	<18.5	<15.5	<21.4	<19.9
Arsenic	38	**5.2**	**10.2**	**5.1**	**6.6**	**6**
Barium	140000	**135**	**297**	**177**	**111**	**313**
Beryllium	4100	**0.65**	**0.62**	**0.6**	**0.69**	**0.7**
Cadmium	1000	**0.34**	**1**	**0.45**	<0.29	**0.51**
Chromium, Total	4000	**14.5**	**19.1**	**16.6**	**14.4**	**17.5**
Cobalt	NA	**7.3**	**8.7**	**5.9**	**8.2**	**7.1**
Lead	1000	**467**	**2210**	**342**	**5840**	**495**
Magnesium	NA	**3740**	**3050**	**2360**	**1870**	**3280**
Manganese	95000	**301**	**800**	**254**	**258**	**261**
Mercury	20	**0.055**	**0.086**	**0.032**	<0.023	**0.05**
Nickel	41000	**13.5**	**14.9**	**12.3**	**11**	**14.4**
Potassium	NA	**1670**	**1470**	**1790**	**1470**	**1960**
Selenium	10000	<4.8	<4.9	<4.1	<5.7	<5.3
Silver	10000	<0.61	<0.62	<0.52	<0.71	<0.66
Vanadium	14000	**26.1**	**33.4**	**28.7**	**32.5**	**34.4**
Zinc	610000	**61.1**	**106**	**53.2**	**35.9**	**56.8**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-083 (0.5-1.5)	BH-084 (0.5-1.5)	BH-085 (0.5-1.5)	BH-086 (0.5-1.5)	BH-087 (0.5-1.5)
Laboratory Sample Identification		A7E12810	A7E12808	A7E12809	A7E29002	A7E29001
Date Collected		12/6/2007	12/6/2007	12/6/2007	12/10/2007	12/10/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<17.5	<18.4	<19.5	<20.2	<19.4
Arsenic	38	**6.1**	**5.5**	**6.8**	**7.3**	**5.8**
Barium	140000	**216**	**293**	**462**	**443**	**208**
Beryllium	4100	**0.63**	**0.93**	**0.86**	**0.84**	**0.88**
Cadmium	1000	**0.25**	<0.25	**0.33**	<0.27	<0.26
Chromium, Total	4000	**28.6**	**17.7**	**23.4**	**19.2**	**19.4**
Cobalt	NA	**7.8**	**7.3**	**8.1**	**8.2**	**9.6**
Lead	1000	**332**	**120**	**885**	**486**	**2130**
Magnesium	NA	**3760**	**3640**	**3880**	**3970**	**3020**
Manganese	95000	**305**	**348**	**349**	**338**	**372**
Mercury	20	**0.035**	**0.095**	**0.041**	**0.045**	**0.073**
Nickel	41000	**15.3**	**14.8**	**16.1**	**15.3**	**15.9**
Potassium	NA	**1380**	**1620**	**1720**	**1880**	**2110**
Selenium	10000	<4.7	<4.9	<5.2	<5.4	<5.2
Silver	10000	<0.58	<0.61	<0.65	<0.67	<0.65
Vanadium	14000	**28.5**	**33.4**	**37.2**	**38**	**35**
Zinc	610000	**64.5**	**44.9**	**65.9**	**60.3**	**62.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-088 (0.5-1.5)	BH-089 (0.5-1.5)	BH-090 (0.5-1.5)	BH-091 (0.5-1.5)	BH-092 (0.5-1.5)
Laboratory Sample Identification		A7E29003	A7E12818	A7E12817	A7E12819	A7E12816
Date Collected		12/10/2007	12/6/2007	12/6/2007	12/6/2007	12/6/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.9	<21.6	<18.8	<22.5	<18.2
Arsenic	38	**9.7J**	**4.7**	**6.1**	**5.6**	**5.5**
Barium	140000	**344**	**141**	**265**	**147**	**165**
Beryllium	4100	**1**	**0.72**	**0.81**	**0.77**	**0.88**
Cadmium	1000	<0.27	<0.29	**0.4**	<0.3	<0.24
Chromium, Total	4000	**20.7**	**14.5**	**17.6**	**15.4**	**17.5**
Cobalt	NA	**9.8**	**9**	**8.5**	**8**	**7.7**
Lead	1000	**305**	**18.6**	**565**	**115**	**97.7**
Magnesium	NA	**4310**	**1940**	**3210**	**2760**	**2670**
Manganese	95000	**412**	**334**	**465**	**262**	**351**
Mercury	20	**0.026**	<0.023	**0.16**	<0.024	<0.02
Nickel	41000	**24.8**	**11.3**	**14.7**	**13.7**	**15.3**
Potassium	NA	**2340**	**1670**	**1840**	**2030**	**1990**
Selenium	10000	<5.3	<5.8	<5	<6	<4.8
Silver	10000	<0.66	<0.72	<0.63	<0.75	<0.61
Vanadium	14000	**51.7**	**30.6**	**33.3**	**31.4**	**34.1**
Zinc	610000	**48.5**	**34.4**	**67.9**	**42**	**57.3**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-093 (0.5-1.5)	BH-094 (0.5-1.5)	BH-095 (0.5-1.5)	BH-095-50 (DUP of BH-095 (0.5-1.5))	BH-096 (0.5-1.5)
Laboratory Sample Identification		A7E12815	A7E12814	A7E12312	A7E12313	A7E12311
Date Collected		12/6/2007	12/6/2007	12/5/2007	12/5/2007	12/5/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<20.3	<20.8	<20.4	<21.5	<18.2
Arsenic	38	**4.6**	**10.9**	**6.5**	**7.5**	**6.6**
Barium	140000	**164**	**582**	**215**	**232**	**259**
Beryllium	4100	**0.81**	**0.88**	**1.1**	**1.2**	**0.97**
Cadmium	1000	<0.27	**0.52**	<0.27	<0.29	**0.32**
Chromium, Total	4000	**15.9**	**21**	**21.6**	**27.6**	**22.8**
Cobalt	NA	**6.7**	**8.6**	**9**	**9**	**8**
Lead	1000	**354**	**1490**	**18**	**20.2**	**143**
Magnesium	NA	**2550**	**5750**	**2410**	**2730**	**3270**
Manganese	95000	**116**	**346**	**373**	**241**	**339**
Mercury	20	**0.116**	**0.045**	**0.032J**	<0.021	**0.048**
Nickel	41000	**15.5**	**18.7**	**17.3**	**22.2**	**22.2**
Potassium	NA	**1710**	**1930**	**1960**	**2050**	**1940**
Selenium	10000	<5.4	<5.5	<5.4	<5.7	<4.9
Silver	10000	<0.68	<0.69	<0.68	<0.72	<0.61
Vanadium	14000	**32.5**	**40.3**	**41.4**	**44.6**	**39.7**
Zinc	610000	**56.5**	**77**	**44.2**	**50.3**	**61.4**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-097 (0.5-1.5)	BH-098 (0.5-1.5)	BH-099 (0.5-1.5)	BH-100 (0.5-1.5)	BH-101 (0.5-1.5)
Laboratory Sample Identification		A7E12310	A7E12305	A7E12306	A7E12304	A7E12301
Date Collected		12/5/2007	12/5/2007	12/5/2007	12/5/2007	12/5/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<20.8	<18	<20.7	<19.4	<20
Arsenic	38	**9.1**	**4.9**	**6.5**	**7.1**	**5.1**
Barium	140000	**216**	**229**	**240**	**437**	**144**
Beryllium	4100	**0.87**	**1**	**0.92**	**1.2**	**1.2**
Cadmium	1000	**0.43**	<0.24	<0.28	<0.26	<0.27
Chromium, Total	4000	**29.9**	**20.4**	**19.8**	**28.3**	**24.2**
Cobalt	NA	**8.4**	**8.2**	**9.1**	**7.7**	**8.6**
Lead	1000	**340**	**25.7**	**120**	**18.6**	**15.3**
Magnesium	NA	**2780**	**2620**	**2870**	**3540**	**3870**
Manganese	95000	**307**	**367**	**394**	**384**	**353**
Mercury	20	**0.17**	<0.023	<0.022	<0.025	<0.023
Nickel	41000	**21**	**17.4**	**16.6**	**23.8**	**23.7**
Potassium	NA	**1780**	**1690**	**2060**	**2140**	**2240**
Selenium	10000	<5.5	<4.8	<5.5	<5.2	<5.3
Silver	10000	<0.69	<0.6	<0.69	<0.65	<0.67
Vanadium	14000	**37**	**36.5**	**37.6**	**41.8**	**40.7**
Zinc	610000	**250**	**43.6**	**49.3**	**57**	**51.3**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-102 (0.5-1.5)	BH-103 (0.5-1.5)	BH-104 (0.5-1.5)	BH-105 (0.5-1.5)	BH-106 (0.5-1.5)
Laboratory Sample Identification		A7E12302	A7E12303	A7E12319	A7E12318	A7E12317
Date Collected		12/5/2007	12/5/2007	12/5/2007	12/5/2007	12/5/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.9	<18.5	<21	<19.4	<18
Arsenic	38	**5.5**	**6.4**	**6.7**	**6.2**	**6.3**
Barium	140000	**345**	**320**	**206**	**237**	**267**
Beryllium	4100	**1**	**1**	**0.97**	**1**	**0.87**
Cadmium	1000	<0.26	<0.25	<0.28	<0.26	**0.31**
Chromium, Total	4000	**19.4**	**18.9**	**20.4**	**19.9**	**24.7**
Cobalt	NA	**8.2**	**9**	**12.4**	**8.3**	**8.5**
Lead	1000	**15**	**15.8**	**35.7**	**16.2**	**62.7**
Magnesium	NA	**3320**	**3460**	**2950**	**2930**	**2590**
Manganese	95000	**355**	**302**	**620**	**309**	**744**
Mercury	20	<0.023	<0.02	<0.023	<0.021	<0.021
Nickel	41000	**18**	**17.4**	**19.6**	**17.2**	**16.5**
Potassium	NA	**1790**	**1790**	**2080**	**1850**	**1910**
Selenium	10000	<5.3	<4.9	<5.6	<5.2	<4.8
Silver	10000	<0.66	<0.62	<0.7	<0.65	<0.6
Vanadium	14000	**35.3**	**36.6**	**39**	**37.1**	**38**
Zinc	610000	**45.7**	**44**	**46.6**	**43.9**	**55.9**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-107 (0.5-1.5)	BH-108 (0.5-1.5)	BH-109 (0.5-1.5)	BH-110 (0.5-1.5)	BH-111 (0.5-1.5)
Laboratory Sample Identification		A7D95802	A7D95803	A7D95807	A7D95804	A7D95806
Date Collected		12/4/2007	12/4/2007	12/4/2007	12/4/2007	12/4/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<19.2	<20.3	<21.3	<20.4	<18.4
Arsenic	38	**5.8**	**6.6**	**8.1**	**7.6**	**7.1**
Barium	140000	**181**	**297J**	**350**	**161**	**138**
Beryllium	4100	**0.91**	**1.2J**	**1.4**	**0.98**	**1.2**
Cadmium	1000	<0.26	<0.27	<0.28	<0.27	<0.25
Chromium, Total	4000	**18.3**	**20J**	**26.1**	**18.5**	**21.1**
Cobalt	NA	**5.9**	**7.8J**	**7**	**9.1**	**8.9**
Lead	1000	**24.4**	**16.2J**	**21.3**	**25.5**	**27.8**
Magnesium	NA	**2180**	**3400J**	**3540**	**2110**	**2850**
Manganese	95000	**155**	**172J**	**332**	**122**	**306**
Mercury	20	<0.021	<0.022	**0.027**	<0.021	**0.026**
Nickel	41000	**13.5**	**18.5J**	**29.6**	**18.6**	**20.6**
Potassium	NA	**1850**	**2050**	**2360**	**1930**	**2270**
Selenium	10000	<5.1	<5.4	<5.7	<5.4	<4.9
Silver	10000	<0.64	<0.68	<0.71	<0.68	<0.61
Vanadium	14000	**35.6**	**39.7J**	**44.2**	**35**	**40**
Zinc	610000	**40.6**	**47.1J**	**54.1**	**37.9**	**44.5**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-112 (0.5-1.5)	BH-113 (0.5-1.5)	BH-114 (0.5-1.5)	BH-115 (0.5-1.5)	BH-116 (0.5-1.5)
Laboratory Sample Identification		A7D95805	A7E12314	A7E12316	A7E12315	A7D95810
Date Collected		12/4/2007	12/5/2007	12/5/2007	12/5/2007	12/4/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<17.1	<21	<20.9	<21.2	<17.5
Arsenic	38	**4.9**	**7.6**	**6.6**	**6.4**	**5.4**
Barium	140000	**136**	**171**	**191**	**286**	**221**
Beryllium	4100	**0.89**	**1**	**0.95**	**1.1**	**0.76**
Cadmium	1000	<0.23	<0.28	<0.28	<0.28	<0.23
Chromium, Total	4000	**15.5**	**20.6**	**17.8**	**20.8**	**19.7**
Cobalt	NA	**7.2**	**8.1**	**8.1**	**8.3**	**6**
Lead	1000	**52.6**	**17.1**	**38.6**	**18.2**	**24.8**
Magnesium	NA	**1940**	**2200**	**1810**	**2490**	**2470**
Manganese	95000	**230**	**439**	**322**	**256**	**101**
Mercury	20	**0.14**	<0.023	**0.043**	<0.023	**0.09**
Nickel	41000	**14.4**	**17.7**	**17.4**	**19.2**	**15.2**
Potassium	NA	**1680**	**1950**	**1720**	**1790**	**1800**
Selenium	10000	<4.6	<5.6	<5.6	<5.7	<4.7
Silver	10000	<0.57	<0.7	<0.7	<0.71	<0.58
Vanadium	14000	**30.9**	**39.2**	**38**	**41.7**	**36.7**
Zinc	610000	**33.1**	**39.7**	**37.2**	**43**	**64.3**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 24 of 83)

Location Identification and Sample Interval (Feet below ground surface)		BH-117 (0.5-1.5)	BH-118 (0.5-1.5)	BH-119 (0.5-1.5)	BH-120 (0.5-1.5)	BH-121 (0.5-1.5)
Laboratory Sample Identification		A7D95808	A7D95811	A7D95809	A7D95819	A7D95818
Date Collected		12/4/2007	12/4/2007	12/4/2007	12/4/2007	12/4/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.6	<18.2	<19.4	<18.8	<19.1
Arsenic	38	**6.2**	**5.6**	**6.2**	**5.7**	**5.8**
Barium	140000	**170**	**211**	**126**	**186**	**242**
Beryllium	4100	**0.89**	**1.1**	**0.5**	**0.9**	**0.91**
Cadmium	1000	<0.26	<0.24	<0.26	<0.25	<0.25
Chromium, Total	4000	**27.4**	**20.4**	**15.2**	**14.9**	**16.1**
Cobalt	NA	**10.6**	**7.8**	**5.1**	**10.3**	**10.6**
Lead	1000	**213**	**51.2**	**164**	**41.9**	**18**
Magnesium	NA	**2880**	**2870**	**5470**	**2000**	**2220**
Manganese	95000	**483**	**327**	**359**	**526**	**854**
Mercury	20	**0.088**	**0.044**	**0.087**	**0.038**	**0.031**
Nickel	41000	**21**	**19.2**	**13.1**	**17.2**	**18.8**
Potassium	NA	**1890**	**1970**	**1300**	**1520**	**1710**
Selenium	10000	<5.2	<4.9	<5.2	<5	<5.1
Silver	10000	<0.65	<0.61	<0.65	<0.63	<0.64
Vanadium	14000	**36.1**	**37.4**	**18.9**	**32.6**	**33.1**
Zinc	610000	**76.2**	**50**	**47.6**	**38.4**	**36.5**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-122 (0.5-1.5)	BH-123 (0.5-1.5)	BH-124 (0.5-1.5)	BH-125 (0.5-1.5)	BH-126 (0.5-1.5)
Laboratory Sample Identification		A7D95801	A7D95813	A7D95812	A7D95816	A7D95817
Date Collected		12/4/2007	12/4/2007	12/4/2007	12/4/2007	12/4/2007
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<20.3	<17.2	<16.1	<19.1	<19.2
Arsenic	38	**4.2**	**5.6**	**4.8**	**6.6**	**6**
Barium	140000	**140**	**175**	**111**	**187**	**226**
Beryllium	4100	**0.79**	**0.95**	**0.57**	**1.1**	**0.8**
Cadmium	1000	<0.27	<0.23	<0.21	<0.25	<0.26
Chromium, Total	4000	**14**	**14.9**	**10.2**	**18.7**	**16.3**
Cobalt	NA	**6.4**	**7.6**	**5**	**9.1**	**9**
Lead	1000	**12.7**	**13.7**	**15.8**	**16**	**46.7**
Magnesium	NA	**1860**	**2500**	**1370**	**3750**	**2070**
Manganese	95000	**255**	**359**	**238**	**390**	**136**
Mercury	20	**0.024**	<0.02	<0.019	<0.02	**0.028**
Nickel	41000	**12.8**	**15.2**	**9.4**	**18.4**	**13.6**
Potassium	NA	**1330**	**1640**	**1120**	**1770**	**1450**
Selenium	10000	<5.4	<4.6	<4.3	<5.1	<5.1
Silver	10000	<0.68	<0.57	<0.54	<0.64	<0.64
Vanadium	14000	**27.7**	**31.7**	**21.4**	**35.5**	**32.2**
Zinc	610000	**27.9**	**30.2**	**26.2**	**44.3**	**34.3**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-127 (0.5-1.5)	BH-128 (0.5-1.5)	BH-129 (0.5-1.5)	BH-130 (0.5-1.5)	BH-131 (0.5-1.5)
Laboratory Sample Identification		A7D95818	A7D95814	A7E54605	A7E54604	A7E54603
Date Collected		12/4/2007	12/4/2007	12/13/2007	12/13/2007	12/13/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<18.6	<19.9	<15.8	<18.7	<18.9
Arsenic	38	**7**	**9.4**	**14.4**	**5.9**	**10.8**
Barium	140000	**193**	**243**	**109**	**140**	**715**
Beryllium	4100	**0.98**	**0.95**	**0.46**	**0.69**	**0.47**
Cadmium	1000	<0.25	<0.27	**0.65**	<0.25	**0.39**
Chromium, Total	4000	**16.5**	**18.7**	**11.4**	**16.8**	**16.1**
Cobalt	NA	**7.8**	**9.6**	**9.1**	**10.1**	**3.8**
Lead	1000	**12.5**	**65.7**	**522**	**199**	**114**
Magnesium	NA	**2280**	**2990**	**1850**	**6840**	**4760**
Manganese	95000	**309**	**310**	**267**	**439**	**238**
Mercury	20	<0.018	**0.032**	**0.134**	**0.05**	**0.094**
Nickel	41000	**19.1**	**16.9**	**24.8**	**15.7**	**15.9**
Potassium	NA	**1640**	**1760**	**1070**	**1810**	**1320**
Selenium	10000	<5	<5.3	<4.2	<5	<5
Silver	10000	<0.62	<0.66	<0.53	<0.62	<0.63
Vanadium	14000	**31.7**	**45.5**	**20.6**	**32.2**	**22.4**
Zinc	610000	**32**	**42.4**	**108**	**58.5**	**101**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-132 (0.5-1.5)	BH-133 (0.5-1.5)	BH-134 (0.5-1.5)	BH-135 (0.5-1.5)	BH-135-50 (DUP of BH-135 (0.5-1.5))
Laboratory Sample Identification		A7E54602	A7E54601	A7E54606	A7E54615	A7E54616
Date Collected		12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<20.5	<19.5	<19.4	<19.1	<19
Arsenic	38	**14.2**	**4.7**	**5.9**	**20J**	**15.9**
Barium	140000	**132**	**126**	**109**	**151J**	**135**
Beryllium	4100	**0.54**	**0.86**	**0.68**	**0.7J**	**0.63**
Cadmium	1000	<0.27	<0.26	<0.26	<0.26	<0.25
Chromium, Total	4000	**30.3**	**14.2**	**33**	**35.1J**	**65.8**
Cobalt	NA	**10.4**	**7.5**	**7.5**	**6.2J**	**6.3**
Lead	1000	**678**	**24**	**52.2**	**118J**	**182**
Magnesium	NA	**1460**	**2160**	**1710**	**1900J**	**2260**
Manganese	95000	**3120**	**176**	**271**	**342**	**356**
Mercury	20	**2**	**0.024**	**0.116**	**0.094J**	**0.044**
Nickel	41000	**26**	**12.1**	**14.7**	**15.6**	**17.7**
Potassium	NA	**1280**	**1570**	**2090**	**5150J**	**4820**
Selenium	10000	<5.5	<5.2	<5.2	<5.1	<5.1
Silver	10000	<0.68	<0.65	<0.65	<0.64	<0.63
Vanadium	14000	**37.3**	**31.6**	**29.1**	**29.4**	**25.4**
Zinc	610000	**433**	**29.9**	**52.5**	**79.8J**	**108**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-136 (0.5-1.5)	BH-137 (0.5-1.5)	BH-138 (0.5-1.5)	BH-139 (0.5-1.5)	BH-140 (0.5-1.5)
Laboratory Sample Identification		A7E54618	A7E54617	A7E54607	A7E54610	A7E54611
Date Collected		12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<15.3	<14.9	<18.5	<18.3	<19.5
Arsenic	38	**3.1**	**3.8**	**4.2**	**6.4**	**6.6**
Barium	140000	**35.8**	**59.7**	**158**	**232**	**294**
Beryllium	4100	**0.39**	**0.33**	**0.89**	**0.78**	**1.1**
Cadmium	1000	<0.2	<0.2	<0.25	<0.24	<0.26
Chromium, Total	4000	**7.4**	**18.8**	**15.4**	**18.6**	**21.7**
Cobalt	NA	**1.6**	**2.7**	**7.6**	**5.3**	**6.9**
Lead	1000	**17.2**	**37.2**	**20.4**	**47.3**	**22.5**
Magnesium	NA	**18600**	**5530**	**2710**	**2760**	**2970**
Manganese	95000	**208**	**178**	**158**	**204**	**198**
Mercury	20	**0.041**	**0.129**	<0.018	**0.034**	**0.026**
Nickel	41000	**5.2**	**9.2**	**15.9**	**13.9**	**19**
Potassium	NA	**601**	**560**	**1990**	**1790**	**2360**
Selenium	10000	<4.1	<4	<4.9	<4.9	<5.2
Silver	10000	<0.51	<0.5	<0.62	<0.61	<0.65
Vanadium	14000	**9.4**	**19.9**	**30.2**	**34.1**	**44.7**
Zinc	610000	**16**	**24**	**31.1**	**35.2**	**45.6**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		BH-141 (0.5-1.5)	BH-142 (0.5-1.5)	BH-143 (0.5-1.5)	BH-144 (0.5-1.5)	BH-145 (0.5-1.5)
Laboratory Sample Identification		A7E54609	A7E54608	A8042205	A8042206	A8042207
Date Collected		12/13/2007	12/13/2007	1/10/2008	1/10/2008	1/10/2008
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<18.4	<18.4	<20.9	<19.5	<18.8
Arsenic	38	**4.7**	**5.7**	**5.6**	**5**	**5.8**
Barium	140000	**192**	**181**	**171**	**242**	**267**
Beryllium	4100	**0.67**	**0.42**	**1.2**	**0.98**	**1**
Cadmium	1000	**0.69**	<0.25	<0.28	<0.26	<0.25
Chromium, Total	4000	**20.1**	**16.2**	**22.6**	**20.4**	**21.1**
Cobalt	NA	**8.9**	**2.9**	**8.9**	**15.9**	**15.4**
Lead	1000	**344**	**490**	**17.5**	**16.9**	**19.5**
Magnesium	NA	**2770**	**1880**	**4690**	**3070**	**3170**
Manganese	95000	**272**	**84.8**	**433**	**1150**	**627**
Mercury	20	**0.816**	**0.195**	<0.022	**0.025**	<0.021
Nickel	41000	**18**	**11.4**	**23.4**	**27.9**	**20.6**
Potassium	NA	**1680**	**1810**	**1990**	**1810**	**1890**
Selenium	10000	<4.9	<4.9	<5.6	<5.2	<5
Silver	10000	<0.61	<0.61	<0.7	<0.65	<0.63
Vanadium	14000	**40.6**	**35.2**	**39.7**	**35.1**	**39.3**
Zinc	610000	**66.5**	**39.3**	**52**	**43.9**	**41.8**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		PSB-04 (3.75-5.75)	PSB-05 (2.8-4.8)	PSB-06 (3.75-5.75)	PSB-11 (4-6)	PSB-12 (2-4)
Laboratory Sample Identification		A8D70803	A8D70805	A8D81002	A8D85103	A8D85105
Date Collected		10/29/2008	10/29/2008	10/30/2008	10/31/2008	10/31/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<18	<18	<19.8	<20.3	<18.1
Arsenic	38	**4.8**	**4**	**7.9**	**32.5**	**3.3**
Barium	140000	**204**	**149**	**199**	**101**	**159**
Beryllium	4100	**0.74**	**0.73**	**1**	**0.63**	**0.8**
Cadmium	1000	**0.37**	**0.24**	**0.67**	<0.27	<0.24
Chromium, Total	4000	**14.9**	**12.6**	**24**	**23.4**	**15.5**
Cobalt	NA	**8.5**	**9.8**	**12.5**	**5**	**5.8**
Lead	1000	**11.6**	**12.9**	**15.2**	**5.6**	**11.9**
Magnesium	NA	**2380**	**2630**	**3030**	**2590**	**2900**
Manganese	95000	**459**	**926**	**464**	**152**	**346**
Mercury	20	<0.024	<0.022	<0.027	<0.025	**0.03**
Nickel	41000	**14.3**	**16**	**35.7**	**18.9**	**14**
Potassium	NA	**2450**	**1720**	**2110**	**1820**	**1540**
Selenium	10000	<4.8	<4.8	<5.3	<5.4	<4.8
Silver	10000	<0.6	<0.6	<0.66	<0.68	<0.6
Vanadium	14000	**27.9**	**25.7**	**36.4**	**28.1**	**21.6**
Zinc	610000	**46.6**	**38.4**	**48.8**	**50.7**	**42.6**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		PSB-13 (2.75-4.75)	PSB-15 (12.5-14.5)	PSB-16 (11.5-13.5)	PSB-17 (11-13)	PSB-18 (9-11)
Laboratory Sample Identification		A8D89102	A8D89105	A8D89107	A8D98902	A8D98904
Date Collected		11/3/2008	11/3/2008	11/3/2008	11/4/2008	11/4/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<17	<17.4	<17.6	<18	<19.7
Arsenic	38	**3.5**	**2.8**	**6**	**3.4**	<2.6
Barium	140000	**177**	**148**	**198**	**89.6**	**173**
Beryllium	4100	**0.82**	**0.67**	**0.92**	**0.79**	**0.93**
Cadmium	1000	**0.23**	<0.23	<0.23	<0.24	<0.26
Chromium, Total	4000	**15**	**12.2**	**16.4**	**14.4**	**18.4**
Cobalt	NA	**9.3**	**4.9**	**8.4**	**5.1**	**6.9**
Lead	1000	**12.7**	**8.7**	**14**	**10.1**	**11.4**
Magnesium	NA	**2900**	**2390**	**3570**	**2710**	**3380**
Manganese	95000	**562**	**181**	**478**	**271**	**301**
Mercury	20	<0.025	<0.025	<0.024	<0.023	<0.024
Nickel	41000	**14.2**	**12.2**	**16.2**	**14.1**	**15.3**
Potassium	NA	**2220**	**1200**	**1700**	**1470**	**1730**
Selenium	10000	<4.5	<4.6	<4.7	<4.8	<5.3
Silver	10000	<0.57	<0.58	<0.59	<0.6	<0.66
Vanadium	14000	**27.4**	**16**	**30.5**	**20.6**	**24.6**
Zinc	610000	**44.2**	**31.1**	**43.9**	**40.6**	**45**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		PSB-19 (11.75-13.75)	PSB-20 (7.5-9.5)	PSB-21 (2-4)	PSB-22 (2.25-4.25)	PSB-23 (2.5-4.5)
Laboratory Sample Identification		A8D98906	A8E20502	A8E20504	A8E20506	A8E25502
Date Collected		11/4/2008	11/6/2008	11/6/2008	11/6/2008	11/7/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<18.6	<17.6UJ	<17.8	<18	<18.4
Arsenic	38	**3.2**	**4.5J**	**7.7**	**4.3**	**3**
Barium	140000	**109**	**185**	**187**	**147**	**52.5**
Beryllium	4100	**0.51**	**0.98**	**0.76**	**0.83**	**0.41**
Cadmium	1000	<0.25	<0.23	**0.34**	<0.24	<0.24
Chromium, Total	4000	**11.6**	**16.9**	**13.9**	**14.2**	**15.1**
Cobalt	NA	**5**	**6.5J**	**16.9**	**8.1**	**9.1**
Lead	1000	**5.9**	**13.7J**	**15.8**	**14.8**	**8.1**
Magnesium	NA	**2480**	**3300**	**2460**	**2490**	**1650**
Manganese	95000	**174**	**357J**	**234**	**239**	**104**
Mercury	20	<0.023	<0.024	<0.027	**0.035**	<0.023
Nickel	41000	**10.7**	**14.3J**	**30.8**	**14.8**	**10.2**
Potassium	NA	**1220**	**1630**	**1500**	**1830**	**931**
Selenium	10000	<5	<4.7	<4.8	<4.8	<4.9
Silver	10000	<0.62	<0.59	<0.59	<0.6	<0.61
Vanadium	14000	**23.6**	**27.9J**	**34.4**	**25.7**	**21.3**
Zinc	610000	**24.8**	**53.1**	**102**	**33.5**	**23**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		PSB-24 (3.75-5.75)	PSB-26 (3.25-5.25)	PSB-27 (2-4)	PSB-27 (7.5-9.5)	PSB-28 (2-4)
Laboratory Sample Identification		A8E25504	A8E25507	A8E31802	A8E31803	A8E31805
Date Collected		11/7/2008	11/7/2008	11/10/2008	11/10/2008	11/10/2008
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<20.6	<18.6	<18.8R	<19.2	<19.5
Arsenic	38	**3.6**	**4.3**	**3.1J**	**4.5**	**4.8**
Barium	140000	**105**	**165**	**66.4J**	**116**	**98.8**
Beryllium	4100	**0.49**	**0.73**	**0.61J**	**0.63**	**0.78**
Cadmium	1000	**0.79**	<0.25	<0.25	<0.26	<0.26
Chromium, Total	4000	**12.1**	**15**	**10.6J**	**11.9**	**13.7**
Cobalt	NA	**10.3**	**6.6**	**6.4J**	**7.9**	**6.2**
Lead	1000	**11.7**	**13.5**	**11.4J**	**9.9**	**12**
Magnesium	NA	**1820**	**2810**	**2600J**	**2920**	**3020**
Manganese	95000	**3160**	**231**	**110J**	**160**	**181**
Mercury	20	<0.028	<0.027	<0.025	<0.026	<0.026
Nickel	41000	**21**	**13.9**	**13.8J**	**16.6**	**14.2**
Potassium	NA	**1120**	**1710**	**1920**	**1880**	**2240**
Selenium	10000	<5.5	<5	<5	<5.1	<5.2
Silver	10000	<0.69	<0.62	<0.63	<0.64	<0.65
Vanadium	14000	**22.6**	**25.8**	**20.2J**	**21.8**	**25.2**
Zinc	610000	**77.1**	**32**	**25.9J**	**31**	**30.8**

(mg/kg)	milligrams per kilogram
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Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		PSB-28 (10-12)	PSB-29 (2-3.5)	PSB-30 (2-4)	PSB-30 (5-7)	PSB-30 (7-8.5)
Laboratory Sample Identification		A8E31806	RSE0967-04	RSE1027-01	RSE1027-02	RSE1027-03
Date Collected		11/10/2008	5/27/2009	5/28/2009	5/28/2009	5/28/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.3	<18.8	<17.6	<19	<17.6
Arsenic	38	**6.5**	**4.5**	**5**	**4.5**	**3.9**
Barium	140000	**60.2**	**170B**	**128B**	**178B**	**174B**
Beryllium	4100	**0.45**	**0.889**	**0.657**	**0.792**	**0.789**
Cadmium	1000	<0.26	<0.251	<0.235	**0.148J**	<0.235
Chromium, Total	4000	**11.9**	**17.6**	**12.3**	**14.5**	**16.4**
Cobalt	NA	**5.4**	**7.54**	**7.11**	**7.15**	**6.68**
Lead	1000	**6.5**	**12.2B**	**10.1B**	**13.6B**	**11.5B**
Magnesium	NA	**3170**	**2580**	**1950**	**2810**	**3010**
Manganese	95000	**330**	**442**	**336**	**557**	**353**
Mercury	20	<0.026	<0.023	<0.0232	**0.0121J**	**0.0189J**
Nickel	41000	**17.4**	**14**	**11.8**	**13.7**	**14.5**
Potassium	NA	**1070**	**2200**	**2100**	**2390**	**1640**
Selenium	10000	<5.1	<5	<4.7	<5.1	<4.7
Silver	10000	<0.64	<0.627	<0.586	<0.633	<0.588
Vanadium	14000	**48.7**	**30.3**	**24.1**	**31.2**	**26.1**
Zinc	610000	**82.8**	**39.7B**	**31.5B**	**43.1B**	**42.2B**

(mg/kg)	milligrams per kilogram
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(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
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NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		PSB-31 (2-4)	PSB-32 (2-4)	PSB-33 (2-4)	PSB-34 (2-4)	PSB-35 (2-4)
Laboratory Sample Identification		RSE1027-04	RSE1027-05	RSE1059-01/RE	RSE1059-02/RE	RSE0911-01
Date Collected		5/28/2009	5/28/2009	5/29/2009	5/29/2009	5/26/2009
Analyte/Methods (Units)						
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)						
Antimony	820	<17.8	<17.9	<22.1	<19.6UJ	<17.6
Arsenic	38	**4.1**	**4**	**8.7B**	**3.7B**	**3.4**
Barium	140000	**106B**	**166B**	**203B**	**169B**	**96.1**
Beryllium	4100	**0.685**	**0.867**	**1.29B**	**0.86JB**	**0.617**
Cadmium	1000	<0.237	<0.238	**0.151J**	**0.114J**	**0.118J**
Chromium, Total	4000	**12.4**	**16.5**	**22**	**18.3**	**10.2**
Cobalt	NA	**7.92**	**7.37**	**6.9**	**5.75**	**5.47**
Lead	1000	**9.9B**	**12.6B**	**17.6B**	**11.1B**	**10.3**
Magnesium	NA	**2510**	**3350**	**4200**	**3170**	**2810**
Manganese	95000	**125**	**317**	**367**	**352J**	**93B**
Mercury	20	<0.0244	**0.013J**	**0.0152J**	<0.0248	<0.0247
Nickel	41000	**12.5**	**16.7**	**20.2**	**13.7**	**14.1**
Potassium	NA	**1840**	**2050**	**2550**	**1800**	**1530**
Selenium	10000	<4.7	<4.8	<5.9	<5.2	<4.7
Silver	10000	<0.593	<0.596	<0.788	<0.612	<0.586
Vanadium	14000	**31.4**	**26.8**	**92.7B**	**29B**	**22.5**
Zinc	610000	**34.9B**	**46.6B**	**128B**	**62.4B**	**31.7B**

(mg/kg)	milligrams per kilogram
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(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
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NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		PSB-36 (2-4)	PSB-36 (5-7)	PSB-36 (8-10)	RB-01	RB-02	RB-03
Laboratory Sample Identification		RSE0967-01	RSE0967-02	RSE0967-03	A7C51510	A7C51509	A7C51508
Date Collected		5/27/2009	5/27/2009	5/27/2009	10/29/2007	10/29/2007	10/29/2007
Analyte/Methods (Units)							
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario							
ICP Metals (mg/kg)							
Antimony	820	<18.1	<17.9	<17.9	<15.4	<17.9	<16.8
Arsenic	38	**3.4**	**3.8**	**3.5**	**8.7**	**9**	**10**
Barium	140000	**79.2B**	**93.2B**	**102B**	**137**	**205**	**188**
Beryllium	4100	**0.702**	**0.65**	**0.708**	**0.55**	**0.67**	**0.76**
Cadmium	1000	<0.241	<0.239	<0.239	**0.26**	**0.25**	<0.22
Chromium, Total	4000	**13.4**	**10.6**	**13.9**	**14.2**	**13**	**13.5**
Cobalt	NA	**5.98**	**5.54**	**4.57**	**7.7**	**7.3**	**9.2**
Lead	1000	**10B**	**12.7B**	**7.3B**	**9.9**	**20.8**	**18.6**
Magnesium	NA	**3190**	**2750**	**3310**	**2330**	**2790**	**2640**
Manganese	95000	**139**	**125**	**156**	**465**	**194**	**206**
Mercury	20	<0.0255	<0.0254	<0.0239	<0.02	<0.022	<0.022
Nickel	41000	**13.6**	**12.7**	**13.7**	**14.1**	**12**	**14.5**
Potassium	NA	**2490**	**2020**	**2490**	**1330**	**1480**	**1870**
Selenium	10000	<4.8	<4.8	<4.8	<4.1	<4.8	<4.5
Silver	10000	<0.602	<0.597	<0.597	<0.51	<0.6	<0.56
Vanadium	14000	**25.3**	**28.8**	**21.9**	**27**	**25.6**	**29.4**
Zinc	610000	**31.1B**	**35.9B**	**37.9B**	**25**	**32.4**	**30**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		**RB-04**	**RB-05**
Laboratory Sample Identification		**A7C51507**	**A7C51506**
Date Collected		**10/29/2007**	**10/29/2007**
Analyte/Methods (Units)			
	Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario		
ICP Metals (mg/kg)			
Antimony	820	<18.2	<18.1
Arsenic	38	**8.6**	**13.5**
Barium	140000	**171**	**201**
Beryllium	4100	**0.68**	**0.68**
Cadmium	1000	**0.29**	**0.28**
Chromium, Total	4000	**13.1**	**15.1**
Cobalt	NA	**6.6**	**8**
Lead	1000	**21**	**24**
Magnesium	NA	**2830**	**3110**
Manganese	95000	**344**	**343**
Mercury	20	<0.022	<0.023
Nickel	41000	**11.9**	**13.4**
Potassium	NA	**1560**	**1470**
Selenium	10000	<4.8	<4.8
Silver	10000	<0.61	<0.6
Vanadium	14000	**24.5**	**25**
Zinc	610000	**33.8**	**35**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
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(A)	Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-01 (0-2)	SB-02 (0-2)	SB-02 (8-9.5)	SB-03 (0-2)	SB-03 (6-8)	SB-04 (0-2)
Laboratory Sample Identification		A7D57807	A7565311	A7D65312	A7D54811	A7D57805	A7D65301
Date Collected		11/20/2007	11/26/2007	11/26/2007	11/20/2007	11/20/2007	11/26/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<18.4	<19	<17.7	<18	<16.3	<19.6
Arsenic	38	**5.5**	**6.1**	**3.3**	**5.3**	**5.1**	**5.7**
Barium	140000	**164**	**135**	**173**	**158**	**147**	**188**
Beryllium	4100	**1**	**0.8**	**0.81**	**0.95**	**0.8**	**0.86**
Cadmium	1000	<0.25	<0.25	<0.24	<0.24	<0.22	**0.39**
Chromium, Total	4000	**17**	**15.8**	**11.7**	**16.1**	**13.3**	**15.9**
Cobalt	NA	**10**	**9.1**	**8.6**	**8.1**	**16.1**	**8.8**
Lead	1000	**19.6**	**873**	**11**	**122**	**17.1**	**1260**
Magnesium	NA	**2410**	**2500**	**2750**	**2700**	**1420**	**3640**
Manganese	95000	**222**	**475**	**195**	**450**	**453**	**353**
Mercury	20	<0.021	**0.049**	<0.02	<0.02	<0.022	**0.041**
Nickel	41000	**17**	**13.6**	**17.7**	**14.9**	**16.2**	**16.2**
Potassium	NA	**1840**	**1810**	**1440**	**1870**	**1410**	**2020**
Selenium	10000	<4.9	<5.1	<4.7	<4.8	<4.3	<5.2
Silver	10000	<0.61	<0.63	<0.59	<0.6	<0.54	<0.65
Vanadium	14000	**35.7**	**29.2**	**16.8**	**34.3**	**28.7**	**29.5**
Zinc	610000	**36.8**	**57**	**28.4**	**28.2**	**24.5**	**75.5**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-04 (6-8)	SB-05 (0-2)	SB-05 (10-12)	SB-06 (0-2)	SB-06 (8-9.5)	SB-07 (0-2)
Laboratory Sample Identification		A7D65302	A7D54804	A7D54806	A7D65308	A7D65309	A7D65307
Date Collected		11/26/2007	11/20/2007	11/20/2007	11/26/2007	11/26/2007	11/26/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway (A) Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<18.9	<18	<20.1	<18.7	<17	<19.2
Arsenic	38	**4.7J**	**3**	<2.7	**7**	**2.4**	**5.9**
Barium	140000	**228J**	**116**	**88**	**184**	**82.9**	**140**
Beryllium	4100	**0.91**	**0.66**	**0.74**	**0.85**	**0.51**	**0.93**
Cadmium	1000	**0.47**	<0.24	<0.27	**0.35**	**0.27**	<0.26
Chromium, Total	4000	**15.9**	**10.8**	**10**	**19.6**	**7.6**	**19.2**
Cobalt	NA	**9**	**6.1**	**4.2**	**8.4**	**3.7**	**10.4**
Lead	1000	**13.3**	**1320**	**11**	**431**	**7.4**	**232**
Magnesium	NA	**2810J**	**1670**	**3170**	**2610**	**2570**	**2710**
Manganese	95000	**342**	**242**	**195**	**435**	**149**	**389**
Mercury	20	<0.02	<0.023	<0.023	**0.033**	<0.021	**0.061**
Nickel	41000	**15.4**	**8.7**	**8.5**	**15.4**	**8.8**	**14.2**
Potassium	NA	**1920**	**1840**	**1290**	**1830**	**1240**	**1820**
Selenium	10000	<5	<4.8	<5.3	<5	<4.5	<5.1
Silver	10000	<0.63	<0.6	<0.67	<0.62	<0.57	<0.64
Vanadium	14000	**26.2**	**19.4**	**22.2**	**33.6**	**7.7**	**34.6**
Zinc	610000	**39.9**	**29.3**	**38.4**	**52**	**28.7**	**47.8**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-08 (0-2)	SB-08 (6-8)	SB-09 (0-2)	SB-09 (2-4)	SB-10 (0-2)	SB-10 (8-10)
Laboratory Sample Identification		A7D65304	A7D65305	A7D72010	A7D72011	A7D72013	A7D72014
Date Collected		11/26/2007	11/26/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<19.3	<17.9	<17.7	<22.1	<20.1	<17.5
Arsenic	38	**5.9**	**6.8**	**4.8**	**4.7**	**4.2**	**2.5**
Barium	140000	**189**	**184**	**73.6**	**127**	**178**	**128**
Beryllium	4100	**0.95**	**0.93**	**0.31**	**0.68**	**0.83**	**0.62**
Cadmium	1000	<0.26	<0.24	**0.83**	<0.3	<0.27	<0.23
Chromium, Total	4000	**18.1**	**14.6**	**11.4**	**13**	**21.6**	**10.5**
Cobalt	NA	**7.3**	**12.2**	**2.8**	**8.8**	**6.7**	**6**
Lead	1000	**174**	**21.3**	**373**	**31.2**	**16.5**	**11.5**
Magnesium	NA	**3570**	**2420**	**6180**	**1750**	**2770**	**2590**
Manganese	95000	**300**	**410**	**240**	**412**	**124**	**306**
Mercury	20	**0.066**	<0.02	**0.28**	<0.023	<0.022	<0.02
Nickel	41000	**15.7**	**18.8**	**13.6**	**12.1**	**15.5**	**13.1**
Potassium	NA	**2320**	**1910**	**678**	**2080**	**2130**	**1660**
Selenium	10000	<5.1	<4.8	<4.7	<5.9	<5.4	<4.7
Silver	10000	<0.64	<0.6	<0.59	<0.74	<0.67	<0.58
Vanadium	14000	**33.2**	**32.1**	**13.6**	**29.6**	**31.1**	**20.9**
Zinc	610000	**89.4**	**31.4**	**194**	**34.3**	**38.8**	**26.2**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-11 (0-2)	SB-11 (6-8)	SB-12 (0-2)	SB-13 (0-2)	SB-14 (0-2)
Laboratory Sample Identification		A7D78401	A7D78402	A7D72202	A7D72016	A7D72205
Date Collected		11/28/2007	11/28/2007	11/27/2007	11/27/2007	11/27/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<17.5	<17.7	<16.1	<16.4	<19.5
Arsenic	38	<2.3	**12.3J**	**5.4**	**4.6**	**5.5J**
Barium	140000	**84.5**	**157J**	**42.4**	**173**	**271**
Beryllium	4100	**0.35**	**1J**	**0.4**	**0.75**	**0.91**
Cadmium	1000	**0.27**	<0.24	<0.21	**1.2**	<0.26
Chromium, Total	4000	**11.3**	**11.8J**	**11.7**	**28.6**	**20**
Cobalt	NA	**2.9**	**10.3J**	**3.5**	**5.8**	**17.1J**
Lead	1000	**108**	**26.3J**	**41.5**	**436**	**80.5J**
Magnesium	NA	**15900**	**2060J**	**2900**	**2680**	**5310J**
Manganese	95000	**166**	**489J**	**154**	**174**	**531**
Mercury	20	**0.024**	<0.02	<0.018	**1.3**	**0.033**
Nickel	41000	**7.9**	**12.5J**	**12.8**	**26.2**	**39.9J**
Potassium	NA	**1170**	**2140**	**866**	**1600**	**3040J**
Selenium	10000	<4.7	<4.7	<4.3	<4.4	<5.2
Silver	10000	<0.58	<0.59	<0.54	<0.55	<0.65
Vanadium	14000	**10.5**	**50.2J**	**15.5**	**40.1**	**29.4**
Zinc	610000	**21.5**	**34.2J**	**20.6**	**190**	**44.3**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-14-50 (DUP of SB-14 (0-2))	SB-14 (8-11)	SB-15 (0-2)	SB-16 (0-2)	SB-17 (0-2)
Laboratory Sample Identification		A7D72208	A7D72206	A7D72201	A7D72017	A7D72203
Date Collected		11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.2	<19.1	<17.3	<18.3	<18.6
Arsenic	38	**5.9**	**2.8**	**8.9**	**6.8**	**4.9J**
Barium	140000	**283**	**101**	**45.3**	**169**	**150**
Beryllium	4100	**0.95**	**0.85**	**0.38**	**0.72**	**0.64**
Cadmium	1000	<0.26	<0.25	**0.3**	**0.49**	**0.53**
Chromium, Total	4000	**20.4**	**12.5**	**12.9**	**87.6**	**19.1**
Cobalt	NA	**12.5**	**7.6**	**3.8**	**7.9**	**5.9J**
Lead	1000	**25.6**	**11.5**	**54.1**	**191**	**82.4J**
Magnesium	NA	**5080**	**3610**	**2980**	**5190**	**4210**
Manganese	95000	**326**	**236**	**185**	**299**	**212J**
Mercury	20	**0.029**	<0.019	**0.037**	**1.9**	**0.35**
Nickel	41000	**33.9**	**17.6**	**10.9**	**32.2**	**14.7J**
Potassium	NA	**2650**	**1790**	**792**	**1810**	**1580**
Selenium	10000	<5.1	<5.1	<4.6	<4.9	<5
Silver	10000	<0.64	<0.64	<0.58	<0.61	<0.62
Vanadium	14000	**33.2**	**21.5**	**15.8**	**63.8**	**27.1**
Zinc	610000	**37.3**	**32.9**	**34.8**	**251**	**65.2**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-18 (0-2)	SB-18 (2-4)	SB-19 (0-2)	SB-19 (2-4)	SB-20 (0-2)	SB-21 (0-2)
Laboratory Sample Identification		A7D85309	A7D85310	A7D85306	A7D85307	A7D78404	A7D78407
Date Collected		11/29/2007	11/29/2007	11/29/2007	11/29/2007	11/28/2007	11/28/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<17	<18.7	<19.1	<19.1	<15.9	<19.6
Arsenic	38	**3.2**	**5.2**	**4.6**	**5**	<2.1	**6.4**
Barium	140000	**37.8**	**126**	**98.8**	**163**	**69.6**	**210**
Beryllium	4100	**<0.23**	**0.64**	**0.57**	**0.84**	**0.3**	**0.99**
Cadmium	1000	**0.34**	**0.53**	<0.26	<0.25	<0.21	<0.26
Chromium, Total	4000	**7.3**	**12.5**	**12**	**15.9**	**7.9**	**19.5**
Cobalt	NA	**2.3**	**15.3**	**11.8**	**14.4**	**2.1**	**9.1**
Lead	1000	**50.2**	**27.8**	**30.3**	**15.1**	**3.6**	**153**
Magnesium	NA	**1740**	**1680**	**1520**	**2330**	**18700**	**2570**
Manganese	95000	**152**	**1670**	**617**	**283**	**164**	**1660**
Mercury	20	<0.02	<0.021	**0.405**	<0.022	<0.019	**0.106**
Nickel	41000	**8.2**	**12.9**	**11.5**	**15.9**	**6.7**	**16.5**
Potassium	NA	**483**	**1540**	**1550**	**1780**	**1140**	**2120**
Selenium	10000	<4.5	<5	<5.1	<5.1	<4.2	<5.2
Silver	10000	<0.57	<0.62	<0.64	<0.64	<0.53	<0.65
Vanadium	14000	**9.2**	**36.6**	**26.2**	**32.6**	**7.5**	**35.7**
Zinc	610000	**54.8**	**27.6**	**32.1**	**34.3**	**10.1**	**67**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-21 (2-4)	SB-22 (0-2)	SB-22 (2-4)	SB-23 (0-2)	SB-23 (8-10)	SB-24 (0-2)
Laboratory Sample Identification		A7D78408	A7D85312	A7D85313	A7D85303	A7D85304	A7D78406
Date Collected		11/28/2007	11/29/2007	11/29/2007	11/29/2007	11/29/2007	11/28/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<19.2	<17.3	<19.5	<19	<17.4	<19
Arsenic	38	**6.3**	**3.5**	**4.3**	**3.5J**	**2.8**	**4.7**
Barium	140000	**191**	**80.4**	**285**	**92.3J**	**162**	**108**
Beryllium	4100	**0.89**	**0.33**	**0.69**	**0.5J**	**0.72**	**0.76**
Cadmium	1000	**0.81**	**0.39**	**0.53**	<0.25	<0.23	<0.25
Chromium, Total	4000	**34.9**	**13.8**	**15.5**	**12.9J**	**11**	**82.8**
Cobalt	NA	**7.5**	**3.9**	**7.7**	**6.6J**	**7.5**	**7**
Lead	1000	**202**	**135**	**434**	**153J**	**10**	**53.6**
Magnesium	NA	**2900**	**4930**	**2740**	**2360J**	**2430**	**2750**
Manganese	95000	**163**	**152**	**235**	**295**	**345**	**205**
Mercury	20	**0.092**	**0.076**	**0.037**	**0.079**	<0.021	**0.08**
Nickel	41000	**19.3**	**11.1**	**16.5**	**11.9J**	**13.7**	**15.7**
Potassium	NA	**1800**	**787**	**1440**	**1520J**	**1340**	**1840**
Selenium	10000	<5.1	<4.6	<5.2	<5.1	<4.6	<5.1
Silver	10000	<0.64	<0.58	<0.65	<0.63	<0.58	<0.63
Vanadium	14000	**35.9**	**15.8**	**27.2**	**22.8J**	**17.8**	**33.5**
Zinc	610000	**127**	**73.9**	**112**	**48.4J**	**27.7**	**70.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		SB-25 (0-2)	SB-25 (4-6)	SB-26 (0-2)	SB-26 (5-8)	SB-27 (0-2)
Laboratory Sample Identification		A7D85315	A7D85316	A7D78409	A7D78410	A7D85301
Date Collected		11/29/2007	11/29/2007	11/28/2007	11/28/2007	11/29/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<16.5	<18.7	<18.6	<21.7	<20.8
Arsenic	38	**4.4**	**7.4**	**3.6**	**6.2**	**6.8**
Barium	140000	**136**	**243**	**147**	**241**	**119**
Beryllium	4100	**0.3**	**0.33**	**0.72**	**1.3**	**0.69**
Cadmium	1000	**0.62**	**0.72**	<0.25	<0.29	<0.28
Chromium, Total	4000	**17.3**	**12.6**	**14.4**	**21**	**13.4**
Cobalt	NA	**3.6**	**4.5**	**6.1**	**7.9**	**6.9**
Lead	1000	**312**	**28000**	**46.2**	**15.1**	**18.7**
Magnesium	NA	**6630**	**3200**	**3700**	**5030**	**1900**
Manganese	95000	**169**	**319**	**197**	**186**	**145**
Mercury	20	**0.122**	**0.294**	**0.772**	<0.022	**0.025**
Nickel	41000	**11.6**	**16.6**	**12.2**	**31**	**10.6**
Potassium	NA	**637**	**804**	**1590**	**1860**	**1450**
Selenium	10000	<4.4	<5	<5	<5.8	<5.6
Silver	10000	<0.55	<0.62	<0.62	<0.72	<0.69
Vanadium	14000	**13.9**	**16.2**	**23.2**	**37.7**	**29.6**
Zinc	610000	**107**	**225**	**106**	**38.9**	**33.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-27 (5-7)	SB-28 (0-2)	SB-29 (0-2)	SB-29 (6-8)	SB-30 (1-3)
Laboratory Sample Identification		A7D85302	A7D78411	A7D87501	A7D87502	A7D78413
Date Collected		11/29/2007	11/28/2007	11/30/2007	11/30/2007	11/28/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<17.6	<20.4	<16.2	<17.9	<15.7
Arsenic	38	**3.3**	**6.3**	**5.1**	**5.2**	<2.1
Barium	140000	**222**	**452**	**191**	**254**	**27.1**
Beryllium	4100	**0.78**	**1.1**	**0.34**	**0.92**	<0.21
Cadmium	1000	<0.24	<0.27	**0.33**	<0.24	<0.21
Chromium, Total	4000	**14.8**	**22.6**	**16.1**	**15.3**	**4.2**
Cobalt	NA	**10.5**	**7.6**	**3**	**10**	**1.6**
Lead	1000	**14.6**	**17.5**	**92.8**	**12.9**	**2.4**
Magnesium	NA	**2720**	**2520**	**12900**	**3250**	**385**
Manganese	95000	**380**	**231**	**241**	**116**	**36.3**
Mercury	20	<0.022	<0.022	**0.09**	<0.021	<0.017
Nickel	41000	**14.5**	**15.9**	**9.4**	**17.3**	**4.7**
Potassium	NA	**1520**	**2050**	**858**	**2010**	**293**
Selenium	10000	<4.7	<5.4	<4.3	<4.8	<4.2
Silver	10000	<0.59	<0.68	<0.54	<0.6	<0.52
Vanadium	14000	**27**	**39.8**	**14.4**	**30.5**	**4.8**
Zinc	610000	**31.5**	**41.8**	**62.1**	**32.7**	**53.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-30 (5-7)	SB-31 (0-2)	SB-32 (0-2)	SB-32 (4-6)	SB-33 (0-2)
Laboratory Sample Identification		A7D78414	A7D78412	A7D87504	A7D87505	A7D87509
Date Collected		11/28/2007	11/28/2007	11/30/2007	11/30/2007	11/30/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<16.5	<20.8	<18.6	<21.7	<19.1
Arsenic	38	<2.2	**17.1**	**6.2**	**7.1**	**7.8**
Barium	140000	**49**	**157**	**257**	**253**	**266**
Beryllium	4100	**0.27**	**0.59**	**1.1**	**1.2**	**1.2**
Cadmium	1000	<0.22	**3.4**	<0.25	<0.29	<0.26
Chromium, Total	4000	**13.3**	**115**	**18.7**	**27.9**	**20.7**
Cobalt	NA	**4.7**	**6.2**	**8.6**	**10.9**	**8.8**
Lead	1000	**22.3**	**85**	**14.7**	**15.3**	**13.9**
Magnesium	NA	**849**	**4730**	**2230**	**2960**	**2370**
Manganese	95000	**159**	**289**	**327**	**152**	**261**
Mercury	20	<0.019	**0.273**	**0.022**	**0.035**	**0.032**
Nickel	41000	**5.8**	**28.7**	**16.9**	**30.7**	**23.2**
Potassium	NA	**678**	**1610**	**1820**	**2300**	**1850**
Selenium	10000	<4.4	<5.5	<5	<5.8	<5.1
Silver	10000	<0.55	<0.69	<0.62	<0.72	<0.64
Vanadium	14000	**12.4**	**78.1**	**33.4**	**41.4**	**35.7**
Zinc	610000	**21.1**	**548**	**38.6**	**44.6**	**42.5**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-33 (2-4)	SB-34 (0-2)	SB-34 (4-6)	SB-35 (0-2)	SB-35-50 (DUP of SB-35 (0-2))	SB-35 (4-6)
Laboratory Sample Identification		A7D87510	A7D87512	A7D87511	A7D87506	A7D87508	A7D87507
Date Collected		11/30/2007	11/30/2007	11/30/2007	11/30/2007	11/30/2007	11/30/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<18.8	<18.3	<21.9	<19.4	<18.7	<19
Arsenic	38	**7.4**	**7.2**	**7.4**	**6**	**8.3**	**6.4**
Barium	140000	**311**	**228**	**251**	**285**	**214**	**217**
Beryllium	4100	**1.3**	**0.92**	**1.4**	**0.98**	**1.1**	**1**
Cadmium	1000	**0.3**	**0.25**	**0.4**	<0.26	<0.25	<0.25
Chromium, Total	4000	**22.5**	**14.5**	**25.4**	**15.5J**	**16**	**17.5**
Cobalt	NA	**11.8**	**9.5**	**11.8**	**8.4**	**8**	**8.3**
Lead	1000	**21.4**	**24.1**	**17.7**	**16.1**	**19.4**	**14.2**
Magnesium	NA	**2690**	**2010**	**2880**	**2790J**	**2500**	**2870**
Manganese	95000	**283**	**458**	**118**	**527**	**314**	**388**
Mercury	20	**0.027**	<0.02	**0.042**	<0.023	**0.035**	<0.021
Nickel	41000	**28.9**	**15.3**	**31.8**	**16.1J**	**16.3**	**18.3**
Potassium	NA	**2030**	**1610**	**2150**	**1940**	**1910**	**1850**
Selenium	10000	<5	<4.9	<5.8	<5.2	<5	<5.1
Silver	10000	<0.63	<0.61	<0.73	<0.65	<0.62	<0.63
Vanadium	14000	**37.3**	**29.7**	**40**	**32.9**	**36**	**32.3**
Zinc	610000	**48.5**	**33.6**	**48.9**	**33.3J**	**35.9**	**36**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-36 (0-2)	SB-37 (0-2)	SB-38 (0-2)	SB-39 (2-4)	SB-39 (4-6)	SB-39 (6-8)
Laboratory Sample Identification		A7D94304	A7D94302	A7D94301	RSA0324-01	RSA0324-02	RSA0324-03
Date Collected		12/3/2007	12/3/2007	12/3/2007	1/9/2009	1/9/2009	1/9/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<19.3	<19.6	<20.1	n/a	n/a	n/a
Arsenic	38	**3.9**	**8.6**	**12**	n/a	n/a	n/a
Barium	140000	**139**	**164**	**229**	n/a	n/a	n/a
Beryllium	4100	**0.71**	**0.58**	**0.79**	n/a	n/a	n/a
Cadmium	1000	**0.27**	**1.7**	**1.2**	n/a	n/a	n/a
Chromium, Total	4000	**53.4**	**422**	**703**	n/a	n/a	n/a
Cobalt	NA	**6.8**	**7.9**	**8.6**	n/a	n/a	n/a
Lead	1000	**48.1**	**319**	**894**	**1200J**	**22**	**19**
Magnesium	NA	**1750**	**2750**	**3610**	n/a	n/a	n/a
Manganese	95000	**418**	**601**	**342**	n/a	n/a	n/a
Mercury	20	**0.049**	**0.358**	**0.808**	n/a	n/a	n/a
Nickel	41000	**12.5**	**21.5**	**28.5**	n/a	n/a	n/a
Potassium	NA	**2640**	**4060**	**3640**	n/a	n/a	n/a
Selenium	10000	<5.1	<5.2	<5.4	n/a	n/a	n/a
Silver	10000	<0.64	<0.65	<0.67	n/a	n/a	n/a
Vanadium	14000	**26.2**	**44.6**	**48.3**	n/a	n/a	n/a
Zinc	610000	**85.3**	**330**	**415**	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-39 (8-10)	SB-39 (10-12)	SB-39 (12-14)	SB-39 (14-16)	SB-39 (16-18)	SB-39 (18-20)
Laboratory Sample Identification		RSA0324-04	RSA0324-05	RSA0324-06	RSA0324-07	RSA0324-08	RSA0324-09
Date Collected		1/9/2009	1/9/2009	1/9/2009	1/9/2009	1/9/2009	1/9/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	n/a	n/a	n/a	n/a	n/a	n/a
Arsenic	38	n/a	n/a	n/a	n/a	n/a	n/a
Barium	140000	n/a	n/a	n/a	n/a	n/a	n/a
Beryllium	4100	n/a	n/a	n/a	n/a	n/a	n/a
Cadmium	1000	n/a	n/a	n/a	n/a	n/a	n/a
Chromium, Total	4000	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	n/a	n/a	n/a	n/a	n/a	n/a
Lead	1000	**12**	**12**	**11**	**16**	**12**	**9.6**
Magnesium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Manganese	95000	n/a	n/a	n/a	n/a	n/a	n/a
Mercury	20	n/a	n/a	n/a	n/a	n/a	n/a
Nickel	41000	n/a	n/a	n/a	n/a	n/a	n/a
Potassium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Selenium	10000	n/a	n/a	n/a	n/a	n/a	n/a
Silver	10000	n/a	n/a	n/a	n/a	n/a	n/a
Vanadium	14000	n/a	n/a	n/a	n/a	n/a	n/a
Zinc	610000	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected	SB-40 (0-2) RSA0324-10 1/9/2009	SB-40 (2-4) RSA0324-11 1/9/2009	SB-40 (4-6) RSA0324-12 1/9/2009	SB-40 (6-8) RSA0324-13 1/9/2009	SB-40 (8-10) RSA0324-14 1/9/2009	SB-40 (10-12) RSA0324-15 1/9/2009
	Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario						
ICP Metals (mg/kg)							
Antimony	820	n/a	n/a	n/a	n/a	n/a	n/a
Arsenic	38	n/a	n/a	n/a	n/a	n/a	n/a
Barium	140000	n/a	n/a	n/a	n/a	n/a	n/a
Beryllium	4100	n/a	n/a	n/a	n/a	n/a	n/a
Cadmium	1000	n/a	n/a	n/a	n/a	n/a	n/a
Chromium, Total	4000	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	n/a	n/a	n/a	n/a	n/a	n/a
Lead	1000	**660**	**40**	**12**	**11**	**10**	**15**
Magnesium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Manganese	95000	n/a	n/a	n/a	n/a	n/a	n/a
Mercury	20	n/a	n/a	n/a	n/a	n/a	n/a
Nickel	41000	n/a	n/a	n/a	n/a	n/a	n/a
Potassium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Selenium	10000	n/a	n/a	n/a	n/a	n/a	n/a
Silver	10000	n/a	n/a	n/a	n/a	n/a	n/a
Vanadium	14000	n/a	n/a	n/a	n/a	n/a	n/a
Zinc	610000	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-40 (12-14)	SB-40 (14-16)	SB-40 (16-18)	SB-40 (18-20)	SB-41 (0-2)	SB-41 (2-4)
Laboratory Sample Identification		RSA0324-16	RSA0324-17	RSA0324-18	RSA0324-19	RSA0326-01	RSA0326-02
Date Collected		1/9/2009	1/9/2009	1/9/2009	1/9/2009	1/9/2009	1/9/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	n/a	n/a	n/a	n/a	n/a	n/a
Arsenic	38	n/a	n/a	n/a	n/a	n/a	n/a
Barium	140000	n/a	n/a	n/a	n/a	n/a	n/a
Beryllium	4100	n/a	n/a	n/a	n/a	n/a	n/a
Cadmium	1000	n/a	n/a	n/a	n/a	n/a	n/a
Chromium, Total	4000	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	n/a	n/a	n/a	n/a	n/a	n/a
Lead	1000	**14**	**8.7**	**8.8**	**21**	**54J**	**19**
Magnesium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Manganese	95000	n/a	n/a	n/a	n/a	n/a	n/a
Mercury	20	n/a	n/a	n/a	n/a	n/a	n/a
Nickel	41000	n/a	n/a	n/a	n/a	n/a	n/a
Potassium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Selenium	10000	n/a	n/a	n/a	n/a	n/a	n/a
Silver	10000	n/a	n/a	n/a	n/a	n/a	n/a
Vanadium	14000	n/a	n/a	n/a	n/a	n/a	n/a
Zinc	610000	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-41 (4-6)	SB-41 (6-8)	SB-41 (8-10)	SB-41 (10-12)	SB-41 (12-14)	SB-41 (14-16)
Laboratory Sample Identification		RSA0326-03	RSA0326-04	RSA0326-05	RSA0326-06	RSA0326-07	RSA0326-08
Date Collected		1/9/2009	1/9/2009	1/9/2009	1/9/2009	1/9/2009	1/9/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	n/a	n/a	n/a	n/a	n/a	n/a
Arsenic	38	n/a	n/a	n/a	n/a	n/a	n/a
Barium	140000	n/a	n/a	n/a	n/a	n/a	n/a
Beryllium	4100	n/a	n/a	n/a	n/a	n/a	n/a
Cadmium	1000	n/a	n/a	n/a	n/a	n/a	n/a
Chromium, Total	4000	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	n/a	n/a	n/a	n/a	n/a	n/a
Lead	1000	**8.9**	**9.2**	**7.3**	**9.1**	**10**	**9.8**
Magnesium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Manganese	95000	n/a	n/a	n/a	n/a	n/a	n/a
Mercury	20	n/a	n/a	n/a	n/a	n/a	n/a
Nickel	41000	n/a	n/a	n/a	n/a	n/a	n/a
Potassium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Selenium	10000	n/a	n/a	n/a	n/a	n/a	n/a
Silver	10000	n/a	n/a	n/a	n/a	n/a	n/a
Vanadium	14000	n/a	n/a	n/a	n/a	n/a	n/a
Zinc	610000	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-41 (16-18)	SB-41 (18-20)	SB-42 (0-2)	SB-42 (2-4)	SB-42 (4-6)	SB-42 (6-8)
Laboratory Sample Identification		RSA0326-09	RSA0326-10	RSA0246-09	RSA0246-10	RSA0246-11	RSA0246-12
Date Collected		1/9/2009	1/9/2009	1/8/2009	1/8/2009	1/8/2009	1/8/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	n/a	n/a	n/a	n/a	n/a	n/a
Arsenic	38	n/a	n/a	n/a	n/a	n/a	n/a
Barium	140000	n/a	n/a	n/a	n/a	n/a	n/a
Beryllium	4100	n/a	n/a	n/a	n/a	n/a	n/a
Cadmium	1000	n/a	n/a	n/a	n/a	n/a	n/a
Chromium, Total	4000	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	n/a	n/a	n/a	n/a	n/a	n/a
Lead	1000	**10**	**9**	**93**	**14**	**16**	**11**
Magnesium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Manganese	95000	n/a	n/a	n/a	n/a	n/a	n/a
Mercury	20	n/a	n/a	n/a	n/a	n/a	n/a
Nickel	41000	n/a	n/a	n/a	n/a	n/a	n/a
Potassium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Selenium	10000	n/a	n/a	n/a	n/a	n/a	n/a
Silver	10000	n/a	n/a	n/a	n/a	n/a	n/a
Vanadium	14000	n/a	n/a	n/a	n/a	n/a	n/a
Zinc	610000	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		SB-42 (8-10)	SB-42 (10-12)	SB-42 (12-14)	SB-42 (14-16)	SB-43 (0-2)	SB-43 (2-4)
Laboratory Sample Identification		RSA0246-13	RSA0246-14	RSA0246-15	RSA0246-16	RSA0244-10	RSA0244-11
Date Collected		1/8/2009	1/8/2009	1/8/2009	1/8/2009	1/8/2009	1/8/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	n/a	n/a	n/a	n/a	n/a	n/a
Arsenic	38	n/a	n/a	n/a	n/a	n/a	n/a
Barium	140000	n/a	n/a	n/a	n/a	n/a	n/a
Beryllium	4100	n/a	n/a	n/a	n/a	n/a	n/a
Cadmium	1000	n/a	n/a	n/a	n/a	n/a	n/a
Chromium, Total	4000	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	n/a	n/a	n/a	n/a	n/a	n/a
Lead	1000	**12**	**12**	**21**	**2.7**	**110**	**73**
Magnesium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Manganese	95000	n/a	n/a	n/a	n/a	n/a	n/a
Mercury	20	n/a	n/a	n/a	n/a	n/a	n/a
Nickel	41000	n/a	n/a	n/a	n/a	n/a	n/a
Potassium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Selenium	10000	n/a	n/a	n/a	n/a	n/a	n/a
Silver	10000	n/a	n/a	n/a	n/a	n/a	n/a
Vanadium	14000	n/a	n/a	n/a	n/a	n/a	n/a
Zinc	610000	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-43 (4-6)	SB-43 (6-8)	SB-43 (8-10)	SB-43 (10-12)	SB-43 (12-14)	SB-43 (14-16)
Laboratory Sample Identification		RSA0244-12	RSA0244-13	RSA0244-14	RSA0244-15	RSA0244-16	RSA0244-17
Date Collected		1/8/2009	1/8/2009	1/8/2009	1/8/2009	1/8/2009	1/8/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	n/a	n/a	n/a	n/a	n/a	n/a
Arsenic	38	n/a	n/a	n/a	n/a	n/a	n/a
Barium	140000	n/a	n/a	n/a	n/a	n/a	n/a
Beryllium	4100	n/a	n/a	n/a	n/a	n/a	n/a
Cadmium	1000	n/a	n/a	n/a	n/a	n/a	n/a
Chromium, Total	4000	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	n/a	n/a	n/a	n/a	n/a	n/a
Lead	1000	**890**	**28**	**21**	**26**	**16**	**14**
Magnesium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Manganese	95000	n/a	n/a	n/a	n/a	n/a	n/a
Mercury	20	n/a	n/a	n/a	n/a	n/a	n/a
Nickel	41000	n/a	n/a	n/a	n/a	n/a	n/a
Potassium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Selenium	10000	n/a	n/a	n/a	n/a	n/a	n/a
Silver	10000	n/a	n/a	n/a	n/a	n/a	n/a
Vanadium	14000	n/a	n/a	n/a	n/a	n/a	n/a
Zinc	610000	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		SB-44 (0-2)	SB-44 (2-4)	SB-44 (4-6)	SB-44 (6-8)	SB-44 (8-10)	SB-44 (10-12)
Laboratory Sample Identification		RSA0246-01	RSA0246-02	RSA0246-03	RSA0246-04	RSA0246-05	RSA0246-06
Date Collected		1/8/2009	1/8/2009	1/8/2009	1/8/2009	1/8/2009	1/8/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	n/a	n/a	n/a	n/a	n/a	n/a
Arsenic	38	n/a	n/a	n/a	n/a	n/a	n/a
Barium	140000	n/a	n/a	n/a	n/a	n/a	n/a
Beryllium	4100	n/a	n/a	n/a	n/a	n/a	n/a
Cadmium	1000	n/a	n/a	n/a	n/a	n/a	n/a
Chromium, Total	4000	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	n/a	n/a	n/a	n/a	n/a	n/a
Lead	1000	**260**	**460**	**15**	**11**	**12**	**11**
Magnesium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Manganese	95000	n/a	n/a	n/a	n/a	n/a	n/a
Mercury	20	n/a	n/a	n/a	n/a	n/a	n/a
Nickel	41000	n/a	n/a	n/a	n/a	n/a	n/a
Potassium	NA	n/a	n/a	n/a	n/a	n/a	n/a
Selenium	10000	n/a	n/a	n/a	n/a	n/a	n/a
Silver	10000	n/a	n/a	n/a	n/a	n/a	n/a
Vanadium	14000	n/a	n/a	n/a	n/a	n/a	n/a
Zinc	610000	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		SB-44 (12-14)	SB-44 (14-16)	STFPSB-02 (2-4)	STFPSB-02 (5-7)
Laboratory Sample Identification		RSA0246-07	RSA0246-08	A8E40001	A8E40002
Date Collected		1/8/2009	1/8/2009	11/11/2008	11/11/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**				
ICP Metals (mg/kg)					
Antimony	820	n/a	n/a	<26.5	<22.6
Arsenic	38	n/a	n/a	**243**	*<11.3*
Barium	140000	n/a	n/a	**15.9**	**23.8**
Beryllium	4100	n/a	n/a	<2.6	<2.3
Cadmium	1000	n/a	n/a	<1.3	<1.1
Chromium, Total	4000	n/a	n/a	**199**	**14.2**
Cobalt	NA	n/a	n/a	**18.8**	**4.6**
Lead	1000	**15**	**2.4**	**2020**	**20.6**
Magnesium	NA	n/a	n/a	**662**	**71800**
Manganese	95000	n/a	n/a	**1240**	**238**
Mercury	20	n/a	n/a	**0.251**	<0.023
Nickel	41000	n/a	n/a	**80.1**	**15.4**
Potassium	NA	n/a	n/a	<662	**1720**
Selenium	10000	n/a	n/a	<19.8	<17
Silver	10000	n/a	n/a	<4	<3.4
Vanadium	14000	n/a	n/a	<6.6	**13.9**
Zinc	610000	n/a	n/a	**645**	**19**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-01 (0-2)	TW-02 (0-2)	TW-02 (10-11)	TW-03 (0-2)	DUP-2 (DUP of TW-03 (0-2))
Laboratory Sample Identification		A7D17812	A7D32201	A7D32202	A7D57501	A7D57502
Date Collected		11/12/2007	11/14/2007	11/14/2007	11/20/2007	11/20/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<20.7	<18.5	<18.2	<19.9	<19.9
Arsenic	38	**5.8**	**6.3**	**5**	**5.9**	**6.2**
Barium	140000	**186**	**252**	**88.4**	**251**	**264**
Beryllium	4100	**1.2**	**1**	**0.97**	**1**	**1.1**
Cadmium	1000	<0.28	<0.25	<0.24	<0.27	<0.27
Chromium, Total	4000	**21.1**	**15.5**	**16.9**	**17.9**	**19.5**
Cobalt	NA	**8**	**10**	**7.7**	**9.4**	**8.1**
Lead	1000	**25.9**	**11.5**	**17.7**	**15.3**	**15.3**
Magnesium	NA	**3350**	**4580**	**2800**	**2700**	**3250**
Manganese	95000	**349**	**87.5**	**335**	**378**	**437**
Mercury	20	**0.03**	<0.021	**0.026**	<0.021	<0.022
Nickel	41000	**18.7**	**24.1**	**15.4**	**17.5**	**20.7**
Potassium	NA	**2350**	**2210**	**1750**	**2020**	**1860**
Selenium	10000	<5.5	<4.9	<4.8	<5.3	<5.3
Silver	10000	<0.69	<0.62	<0.61	<0.66	<0.66
Vanadium	14000	**40.7**	**22.4**	**32.1**	**38.5**	**41**
Zinc	610000	**57**	**26.3**	**34.6**	**38.7**	**43.3**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-03 (15-17)	TW-04 (0-2)	TW-04 (2-4)	TW-05 (0-2)	TW-05 (5-7)	TW-06 (0-2)
Laboratory Sample Identification		A7D57503	A7D23707	A7D23708	A7D50904	A7D50905	A7D23710
Date Collected		11/20/2007	11/13/2007	11/13/2007	11/19/2007	11/19/2007	11/13/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<22.1	<18	<18	<17.8	<19.4	<19.1
Arsenic	38	<2.9	**6.5**	**4.5**	**5.1**	**<2.6**	**5.1**
Barium	140000	**90.4J**	**232**	**112**	**269**	**47.4**	**161**
Beryllium	4100	**0.82J**	**1.2**	**0.52**	**1**	**0.7**	**0.94**
Cadmium	1000	<0.29	**0.35**	<0.24	<0.24	<0.26	**0.27**
Chromium, Total	4000	**13.7**	**22**	**10.3**	**17.6**	**30.9**	**16.6**
Cobalt	NA	**5.4J**	**7.9**	**2.6**	**15.2**	**9.4**	**12**
Lead	1000	**3.5**	**16**	**11.9**	**11.4**	**5.3**	**18.1**
Magnesium	NA	**24000**	**2330**	**3060**	**5520**	**52400**	**2160**
Manganese	95000	**145J**	**152**	**161**	**418**	**427**	**573**
Mercury	20	<0.023	<0.021	<0.019	<0.02	**0.16**	<0.021
Nickel	41000	**26.6J**	**20.1**	**9.8**	**40**	**24.7**	**16.3**
Potassium	NA	**3600J**	**1790**	**999**	**3280**	**4180**	**1780**
Selenium	10000	<5.9	<4.8	<4.8	<4.7	<5.2	<5.1
Silver	10000	<0.74	<0.6	<0.6	<0.59	<0.65	<0.64
Vanadium	14000	**10.4**	**37.8**	**15.8**	**24.4**	**29.7**	**35.2**
Zinc	610000	**22.6J**	**41.7**	**12.9**	**31.4**	**25.8**	**33.1**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-07 (0-2)	TW-07 (5-7)	TW-08 (0-2)	TW-08 (5-7)	TW-09 (0-2)	TW-10 (0-2)
Laboratory Sample Identification		A7D50902	A7D50903	A7D43401	A7D50901	A7D23709	A7D40708
Date Collected		11/19/2007	11/19/2007	11/16/2007	11/19/2007	11/13/2007	11/15/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<19.2	<21.7	<18.6	<18.4	<20.7	<20.3
Arsenic	38	**6.7**	**4J**	**4.1**	**8.4**	**6.7**	**5.3**
Barium	140000	**171**	**40.5J**	**268**	**73**	**269**	**170**
Beryllium	4100	**0.81**	**0.73J**	**1**	**0.75**	**1.3**	**0.88**
Cadmium	1000	<0.26	<0.29	<0.25	<0.25	<0.28	<0.27
Chromium, Total	4000	**14**	**17J**	**19.7**	**18.9**	**23**	**15.6**
Cobalt	NA	**8.9**	**8.1J**	**8.2**	**17.5**	**9.9**	**7.5**
Lead	1000	**4.7**	**6**	**13**	**24.6**	**16.9**	**16.5**
Magnesium	NA	**5750**	**49400**	**4700**	**7910**	**3000**	**3020**
Manganese	95000	**103**	**286**	**328**	**204**	**182**	**321**
Mercury	20	<0.02	<0.023	<0.022	<0.019	<0.2	<0.022
Nickel	41000	**31.5**	**28.8**	**20.5**	**63**	**24.6**	**14.6**
Potassium	NA	**3560**	**4120J**	**2320**	**4250**	**1980**	**1930**
Selenium	10000	<5.1	<5.8	<4.9	<4.9	<5.5	<5.4
Silver	10000	<0.64	<0.72	<0.62	<0.61	<0.69	<0.68
Vanadium	14000	**8.3**	**23J**	**29.5**	**12.4**	**38.4**	**31.1**
Zinc	610000	**22**	**30.2J**	**37.8**	**50.7**	**43.8**	**39.2**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-10 (7-8)	TW-11 (0-2)	TW-12 (0-2)	TW-12 (10-11.5)	TW-13 (0-2)	DUP-1 (DUP of TW-13 (0-2))
Laboratory Sample Identification		A7D40709	A7D23711	A7D40710	A7D40711	A7D43404	A7D43405
Date Collected		11/15/2007	11/13/2007	11/15/2007	11/15/2007	11/16/2007	11/16/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<13.7	<18.6	<18.4	<18.5	<19	<18.7
Arsenic	38	**2.7**	**7**	**4.3**	**5**	**5.2**	**4.7**
Barium	140000	**58**	**155**	**95.5**	**68**	**343**	**415**
Beryllium	4100	**0.38**	**0.88**	**0.72**	**0.56**	**1.1**	**1.1**
Cadmium	1000	<0.18	**0.5**	<0.24	<0.25	<0.25	<0.25
Chromium, Total	4000	**8.6**	**18**	**12.5**	**10.7**	**22.5**	**26**
Cobalt	NA	**2.4**	**8.5**	**7.8**	**3.9**	**8.1**	**8.8**
Lead	1000	**5.1**	**132**	**15.2**	**8.9**	**13.5**	**10.6**
Magnesium	NA	**39900**	**3920**	**1960**	**3570**	**5600**	**11500**
Manganese	95000	**301**	**350**	**285**	**222**	**413**	**536**
Mercury	20	<0.02	<0.022	<0.02	<0.02	<0.021	<0.02
Nickel	41000	**10.3**	**16.1**	**10.2**	**12.5**	**22.9**	**37.2**
Potassium	NA	**753**	**2170**	**1650**	**1270**	**2370**	**2650**
Selenium	10000	<3.6	<5	<4.9	<4.9	<5.1	<5
Silver	10000	<0.46	<0.62	<0.61	<0.62	<0.63	<0.62
Vanadium	14000	**11**	**32.2**	**25.8**	**18.9**	**35.8**	**32.5**
Zinc	610000	**11.8**	**75**	**28.8**	**19.8**	**41.5**	**46.1**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		TW-14 (0-2)	TW-15 (0-2)	TW-15 (5-7.5)	TW-16 (0-2)	TW-16 (10-12)	TW-17 (0-2)
Laboratory Sample Identification		A7D32203	A7D57504	A7D57505	A7D43402	A7D43403	A7D72001
Date Collected		11/14/2007	11/20/2007	11/20/2007	11/16/2007	11/16/2007	11/27/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<19	<19.6	<18.4	<17.2	<18.9	<18.9
Arsenic	38	**4.7**	**4.9**	**5.5**	**3.7**	**4.5J**	**5.6**
Barium	140000	**135**	**129**	**194**	**113**	**45.5**	**236**
Beryllium	4100	**1**	**0.78**	**0.86**	**0.62**	**0.49**	**0.94**
Cadmium	1000	<0.25	<0.26	<0.25	<0.23	<0.25	**0.63**
Chromium, Total	4000	**17**	**15.1**	**13.7**	**12.4**	**13.5**	**15.3**
Cobalt	NA	**7.7**	**7.2**	**13.9**	**7.1**	**3**	**34.2**
Lead	1000	**14.3**	**12**	**20.6**	**30.6**	**5.7**	**29**
Magnesium	NA	**3340**	**2530**	**2810**	**1760**	**5960J**	**2470**
Manganese	95000	**331**	**351**	**808**	**559**	**329**	**2430**
Mercury	20	<0.021	<0.021	<0.019	**0.021**	<0.023	<0.02
Nickel	41000	**15.5**	**15.4**	**17.9**	**11.8**	**11.2**	**39.8**
Potassium	NA	**1810**	**2840**	**2080**	**1880**	**1900**	**1970**
Selenium	10000	<5.1	<5.2	<4.9	<4.6	<5.1	<5
Silver	10000	<0.63	<0.65	<0.61	<0.57	<0.63	<0.63
Vanadium	14000	**34.5**	**27.3**	**37.4**	**25.6**	**21.1**	**35**
Zinc	610000	**38.9**	**33.4**	**34.7**	**35.6**	**10.5**	**33.9**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-17 (10-12)	TW-18 (0-2)	TW-19 (0-2)	TW-19 (5-6)	TW-20 (0-2)	TW-20 (10-12)
Laboratory Sample Identification		A7D72002	A7D51001	A7D32204	A7D40707	A7D65319	A7D65320
Date Collected		11/27/2007	11/19/2007	11/14/2007	11/15/2007	11/26/2007	11/26/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<21.2	<17	<19.2	<19.8	<17.5	<18.4
Arsenic	38	**5.2**	**4.2**	**4.6**	**2.8**	**4.9**	**4.7**
Barium	140000	**197**	**140**	**145**	**44.5**	**134**	**184**
Beryllium	4100	**1**	**0.73**	**0.9**	**0.44**	**0.89**	**0.86**
Cadmium	1000	<0.28	<0.23	<0.26	<0.26	<0.23	<0.25
Chromium, Total	4000	**16.7**	**14.2**	**14.9**	**8**	**16.7**	**14.3**
Cobalt	NA	**7.1**	**7.1**	**7.3**	**1.7**	**8.2**	**10**
Lead	1000	**14.7**	**15.5**	**22.7**	**7.9**	**16.5**	**13.6**
Magnesium	NA	**4320**	**1780**	**2300**	**3530**	**2190**	**3270**
Manganese	95000	**316**	**409**	**354**	**248**	**352**	**248**
Mercury	20	<0.025	<0.021	<0.023	<0.024	**0.027**	<0.02
Nickel	41000	**22.4**	**12.8**	**14.2**	**7.7**	**13.5**	**18.3**
Potassium	NA	**2630**	**1910**	**1920**	**760**	**2050**	**1830**
Selenium	10000	<5.7	<4.5	<5.1	<5.3	<4.7	<4.9
Silver	10000	<0.71	<0.57	<0.64	<0.66	<0.58	<0.61
Vanadium	14000	**39.3**	**28.9**	**30.1**	**12.3**	**30.1**	**27.9**
Zinc	610000	**58.7**	**34.2**	**64**	**6.3**	**41.7**	**31.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-21 (0-2)	TW-21 (10-12)	TW-22 (0-2)	TW-22 (10-12)	TW-23S (0-2)	TW-23S (10-11)
Laboratory Sample Identification		A7D65317	A7D65318	A7D57506	A7D57507	A7D72003	A7D72004
Date Collected		11/26/2007	11/26/2007	11/20/2007	11/20/2007	11/27/2007	11/27/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<18.7	<19.9	<19.4	<21.8	<17.4	<18.2
Arsenic	38	**5.1**	**4.8**	**5.6**	**8**	**3.7**	<2.4
Barium	140000	**423**	**131**	**126**	**115**	**81.2**	**28.5**
Beryllium	4100	**0.98**	**0.77**	**0.99**	**1.2**	**0.6**	**0.34**
Cadmium	1000	<0.25	**0.31**	<0.26	<0.29	<0.23	<0.24
Chromium, Total	4000	**17.3**	**17.3**	**18.5**	**21.4**	**13.3**	**6**
Cobalt	NA	**8.4**	**5.8**	**6.9**	**8.4**	**8.1**	**1.5**
Lead	1000	**15.4**	**8.7**	**29.8**	**15**	**13.1**	**1.6**
Magnesium	NA	**3060**	**3130**	**2400**	**4080**	**2060**	**2360**
Manganese	95000	**632**	**168**	**330**	**218**	**301**	**64.7**
Mercury	20	<0.02	<0.02	**0.044**	**0.035**	<0.021	<0.02
Nickel	41000	**18**	**16.8**	**14.4**	**35.5**	**9.1**	**5**
Potassium	NA	**2040**	**2120**	**2710**	**3160**	**1350**	**686**
Selenium	10000	<5	<5.3	<5.2	<5.8	<4.6	<4.9
Silver	10000	<0.62	<0.66	<0.65	<0.73	<0.58	<0.61
Vanadium	14000	**29.2**	**21.7**	**37.6**	**43**	**26**	**4.7**
Zinc	610000	**42**	**83.1**	**127**	**116**	**23.6**	**2.9**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-24S (0-2)	TW-24S (6-7.5)	TW-25S (0-2)	TW-25S (2-4)	TW-26 (0-2)
Laboratory Sample Identification		A7D72005	A7D72007	A7D72006	A7D72008	A7D78416
Date Collected		11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/28/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.5	<20.9	<18	<17.1	<18.7
Arsenic	38	**5**	**10.6**	**6**	**5.5**	<2.5
Barium	140000	**97.7**	**169**	**177**	**274**	**21.1**
Beryllium	4100	**0.77**	**1**	**1.1**	**0.98**	**0.44**
Cadmium	1000	<0.26	**0.7**	<0.24	<0.23	<0.25
Chromium, Total	4000	**16.4**	**20.6**	**20.7**	**19.3**	**15.3**
Cobalt	NA	**8**	**7**	**8.1**	**9.5**	**3.8**
Lead	1000	**16.2**	**15**	**16.6**	**15.2**	**4.6**
Magnesium	NA	**2150**	**5310**	**3110**	**4030**	**92300**
Manganese	95000	**308**	**377**	**339**	**527**	**338**
Mercury	20	<0.02	**0.034**	<0.021	**0.022**	<0.02
Nickel	41000	**11.9**	**29.9**	**17.2**	**19.2**	**12.5**
Potassium	NA	**1950**	**2370**	**2080**	**1990**	**2370**
Selenium	10000	<5.2	<5.6	<4.8	<4.5	<5
Silver	10000	<0.65	<0.7	<0.6	<0.57	<0.62
Vanadium	14000	**35.4**	**40.3**	**40.7**	**33.5**	**20.8**
Zinc	610000	**32.7**	**124**	**44**	**53.3**	**9.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-26 (12-12.5)	TW-27S (0-2)	TW-28 (0-2)	TW-28 (2-2.5)	TW-29 (0-2)
Laboratory Sample Identification		A7D78417	A7D72009	A7D96001	A7D96002	A7E12603
Date Collected		11/28/2007	11/27/2007	12/4/2007	12/4/2007	12/6/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	*<48*	<19.6	<19.2	<18.2	<19.1
Arsenic	38	**16.1**	**5.7**	**5.5**	**5.4**	**5.5**
Barium	140000	**76.8**	**248**	**74.3**	**288**	**85.1**
Beryllium	4100	**1.1**	**0.87**	**1.1**	**1.2**	**0.84**
Cadmium	1000	<0.64	<0.26	<0.26	<0.24	<0.25
Chromium, Total	4000	**30.9**	**23.9**	**18.4**	**21.8**	**16.1**
Cobalt	NA	**12**	**8.2**	**9**	**6.9**	**7.5**
Lead	1000	**19.5**	**14.1**	**14.9**	**14.2**	**17.1**
Magnesium	NA	**235000**	**8700**	**3780**	**3710**	**2310**
Manganese	95000	**603**	**449**	**479**	**268**	**203**
Mercury	20	<0.052	<0.021	<0.02	**0.022**	<0.021
Nickel	41000	**39.1**	**18.3**	**19**	**22.6**	**12**
Potassium	NA	**4950**	**1820**	**1890**	**1950**	**2550**
Selenium	10000	<12.8	<5.2	<5.1	<4.8	<5.1
Silver	10000	<1.6	<0.65	<0.64	<0.61	<0.64
Vanadium	14000	**35.5**	**31.8**	**35**	**35.4**	**33.7**
Zinc	610000	**32.6**	**39.2**	**47.3**	**49.7**	**34.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-29 (0-2)	DUP-3 (DUP of TW-29 (0-2))	TW-29 (6.5-8)	TW-30 (0-2)	TW-31S (0-2)	TW-31S (12-13)
Laboratory Sample Identification		A7E21703	A7E12605	A7E12604	A7D85317	A7E21704	A7E21705
Date Collected		12/7/2007	12/6/2007	12/6/2007	12/29/2007	12/7/2007	12/7/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<16.7	<17.7	<20.9	<16.3	<17.9	<20.3
Arsenic	38	**5.4**	**6.6**	**9.7**	**5.1**	**4.3**	**2.8**
Barium	140000	**163**	**150**	**136**	**143**	**294**	**53.2**
Beryllium	4100	**0.78**	**0.99**	**1.2**	**0.69**	**0.93**	**0.48**
Cadmium	1000	<0.22	<0.24	<0.28	**1.5**	<0.24	<0.27
Chromium, Total	4000	**16.5**	**18.4**	**27**	**104**	**20**	**13.1**
Cobalt	NA	**8.4**	**8.6**	**8**	**7.7**	**8.8**	**3.9**
Lead	1000	**78.5**	**21.1**	**17.2**	**158**	**13.6**	**6.1**
Magnesium	NA	**2510**	**3170**	**4930**	**3010**	**4210**	**63100**
Manganese	95000	**369**	**449**	**137**	**452**	**444**	**283**
Mercury	20	<0.021	<0.019	**0.025**	**0.93**	<0.024	<0.022
Nickel	41000	**14.8**	**19**	**32.5**	**19.5**	**20**	**13.9**
Potassium	NA	**1870**	**2880**	**2800**	**1800**	**2890**	**1750**
Selenium	10000	<4.4	<4.7	<5.6	<4.4	<4.8	<5.4
Silver	10000	<0.56	<0.59	<0.7	<0.54	<0.6	<0.68
Vanadium	14000	**33.5**	**37.9**	**45.6**	**24.7**	**33.3**	**18.3**
Zinc	610000	**38.4**	**42.1**	**62.6**	**244**	**35.6**	**43.9**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-32S (0-1)	TW-33 (0-2)	TW-33 (4-4.5)	TW-34 (0-2)	TW-35 (0-2)	TW-36 (0-2)
Laboratory Sample Identification		A7E12401	A7E12601	A7E12602	A7D96004	A7D94306	A7D85320
Date Collected		12/5/2007	12/6/2007	12/6/2007	12/4/2007	12/3/2007	11/29/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<19.2	<20.1	<24.7	<18	<19.9	<18.4
Arsenic	38	**5.5**	**4.7**	**8.1**	**5.7**	**4.9**	**5.4**
Barium	140000	**330**	**224**	**288**	**73.9**	**118**	**163**
Beryllium	4100	**1**	**0.89**	**1.2**	**0.43**	**1.1**	**0.9**
Cadmium	1000	<0.26	<0.27	<0.33	<0.24	<0.27	<0.25
Chromium, Total	4000	**18.7**	**16.3**	**23.7**	**11.3**	**19.2**	**18.2**
Cobalt	NA	**8.8**	**8.1**	**6.2**	**3.1**	**9.1**	**4.8**
Lead	1000	**14.9**	**14.4**	**16.7**	**10.4**	**13.7**	**13.2**
Magnesium	NA	**3540**	**2720**	**4760**	**3920**	**5010**	**2680**
Manganese	95000	**357**	**210**	**151**	**210**	**396**	**177**
Mercury	20	<0.022	<0.022	<0.028	<0.019	<0.022	<0.021
Nickel	41000	**19.3**	**14.5**	**25.3**	**11.4**	**19.1**	**15.1**
Potassium	NA	**1810**	**1580**	**2690**	**1410**	**1800**	**1860**
Selenium	10000	<5.1	<5.4	<6.6	<4.8	<5.3	<4.9
Silver	10000	<0.64	<0.67	<0.82	<0.6	<0.66	<0.61
Vanadium	14000	**35.6**	**33.7**	**38.9**	**15.8**	**33.1**	**36.3**
Zinc	610000	**43.9**	**33.6**	**53.1**	**43.1**	**39.3**	**37.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 70 of 83)

Location Identification and Sample Interval (Feet below ground surface)		TW-36 (14-15)	TW-37 (0-2)	TW-37 (2-4)	TW-38 (0-2)	TW-38 (10-12.5)	TW-40 (0-1)
Laboratory Sample Identification		A7D85321	A7E12403	A7E12404	A7D85318	A7D85319	A7E12402
Date Collected		11/29/2007	12/5/2007	12/5/2007	11/29/2007	11/29/2007	12/5/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway (A) Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<19.6	<18.2	<20.6	<17.1	<18.8	<19.4
Arsenic	38	**22.7**	**5.6J**	**10.1**	**3.8**	**2.7**	**8.9**
Barium	140000	**292**	**314J**	**434**	**31.4**	**37.8**	**494**
Beryllium	4100	**0.68**	**1J**	**1.3**	**0.33**	**0.88**	**0.82**
Cadmium	1000	**0.32**	<0.24	<0.27	<0.23	<0.25	**0.33**
Chromium, Total	4000	**15.3**	**18.5J**	**27.8**	**8.5**	**14.8**	**33.9**
Cobalt	NA	**8.6**	**11.1J**	**9.8**	**2.3**	**8.4**	**7.8**
Lead	1000	**12.5**	**18.1J**	**19.1**	**6.4**	**11.2**	**625**
Magnesium	NA	**4010**	**2950J**	**4310**	**2590**	**4180**	**4510**
Manganese	95000	**932**	**588J**	**195**	**134**	**259**	**334**
Mercury	20	<0.023	<0.022	**0.023**	<0.022	<0.023	**0.103**
Nickel	41000	**23.5**	**17.4J**	**39.8**	**8.2**	**18.4**	**19.7**
Potassium	NA	**1800**	**1880**	**2520**	**647**	**2270**	**1890**
Selenium	10000	<5.2	<4.9	<5.5	<4.6	<5	<5.2
Silver	10000	<0.65	<0.61	<0.69	<0.57	<0.63	<0.65
Vanadium	14000	**56.3**	**36.2J**	**45.1**	**11.4**	**17.5**	**37.4**
Zinc	610000	**32.5**	**40.8J**	**58.6**	**13.3**	**31.7**	**76.7**

(mg/kg)	milligrams per kilogram
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Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-41 (0.5-2.0)	TW-41-50 (DUP of TW-41 (0.5-2.0))	TW-42 (0-2)	TW-42 (7.5-10)	TW-43 (0-2)
Laboratory Sample Identification		A7E86701	A7E86702	A7E21701	A7E21702	A7D94305
Date Collected		12/20/2007	12/20/2007	12/7/2007	12/7/2007	12/3/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<22.7	<20.2	<18.5	<17.9	<19.6
Arsenic	38	**6.9**	**5.7**	**5.9**	**3.3**	**5.2**
Barium	140000	**766**	**186**	**174**	**280**	**147**
Beryllium	4100	**1.3**	**0.98**	**1**	**0.87**	**0.77**
Cadmium	1000	<0.3	<0.27	<0.25	<0.24	<0.26
Chromium, Total	4000	**23.2**	**17.7**	**21.7**	**22.7**	**13**
Cobalt	NA	**7.5J**	**7**	**9.9**	**7.5**	**10.3**
Lead	1000	**16.3J**	**12.7**	**59.8**	**12.5**	**28.3**
Magnesium	NA	**3230**	**2920**	**2820**	**2890**	**1860**
Manganese	95000	**293**	**315**	**390**	**393**	**813**
Mercury	20	**0.025**	**0.023**	**0.043J**	<0.023	<0.019
Nickel	41000	**22.4**	**16.2**	**17.9**	**18**	**11.7**
Potassium	NA	**2210**	**1860**	**2140**	**1810**	**1460**
Selenium	10000	<6.1	<5.4	<4.9	<4.8	<5.2
Silver	10000	<0.76	<0.67	<0.62	<0.6	<0.65
Vanadium	14000	**41.5**	**32.6**	**42.3**	**26.9**	**28**
Zinc	610000	**49.1J**	**39.9**	**48**	**36.6**	**29.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-45 (0.5-2.0)	TW-45 (6-8)	TW-46 (0-2)	TW-46 (2-4)	TW-47 (0.5-2.0)
Laboratory Sample Identification		A8080904	A8080905	A8086102	A8086103	A8080901
Date Collected		1/22/2008	1/22/2008	1/23/2008	1/23/2008	1/22/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<20.1	<17.6	<19.6	<20.1	<17.1
Arsenic	38	**4.7**	**5**	**5.4**	**6**	<2.3
Barium	140000	**202**	**121**	**188**	**246**	**112J**
Beryllium	4100	**0.82**	<0.23	**1.1**	**1.2**	**0.4J**
Cadmium	1000	**0.33**	<0.23	<0.26	<0.27	<0.23
Chromium, Total	4000	**17.1**	**9.6**	**19.8**	**21.1**	**6.9**
Cobalt	NA	**8.7**	**5.6**	**9.2**	**12**	**2J**
Lead	1000	**221**	**10.1**	**19.6**	**22.6**	**5.3J**
Magnesium	NA	**4840**	**3200**	**3610**	**3190**	**31200**
Manganese	95000	**532**	**187**	**196**	**256**	**178J**
Mercury	20	**0.046**	<0.02	<0.021	<0.021	<0.018
Nickel	41000	**16.6**	**16.1**	**18.7**	**24**	**6.4**
Potassium	NA	**1890**	**1160**	**2370**	**1860**	**810J**
Selenium	10000	<5.4	<4.7	<5.2	<5.4	<4.6
Silver	10000	<0.67	<0.59	<0.65	<0.67	<0.57
Vanadium	14000	**31.4**	**21.5**	**39.2**	**39.9**	**7.6**
Zinc	610000	**40.7**	**29.9**	**46.2**	**40.6**	**10.6**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-47-50 (DUP of TW-47 (0.5-2.0))	TW-47 (5-6)	TW-48 (0-2)	TW-49 (0-2)	TW-49 (6-8)
Laboratory Sample Identification		A8080903	A8080902	A7E44113	A8086104	A8086105
Date Collected		1/22/2008	1/22/2008	12/7/2007	1/23/2008	1/23/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<18.3	<20.4	<20.9	<21.1	<19.1
Arsenic	38	<2.4	**5.5**	**6.1**	**6**	**3.6**
Barium	140000	**139**	**248**	**209**	**177**	**305**
Beryllium	4100	**0.45**	**0.9**	**0.93**	**1.1**	**1.1**
Cadmium	1000	<0.24	<0.27	<0.28	<0.28	<0.25
Chromium, Total	4000	**8.2**	**14.3**	**17.9**	**20.5**	**17**
Cobalt	NA	**2.5**	**12**	**7.8**	**9.5**	**10.5**
Lead	1000	**50.1**	**15.4**	**22.5**	**174**	**12.9**
Magnesium	NA	**36100**	**4060**	**2560**	**2750**	**3450**
Manganese	95000	**188**	**1420**	**206**	**513**	**1790**
Mercury	20	<0.02	<0.02	<0.023	**0.028**	<0.023
Nickel	41000	**7.5**	**18.1**	**15.2**	**17.9**	**18.9**
Potassium	NA	**993**	**1680**	**1910**	**1950**	**1840**
Selenium	10000	<4.9	<5.4	<5.6	<5.6	<5.1
Silver	10000	<0.61	<0.68	<0.7	<0.7	<0.64
Vanadium	14000	**8.2**	**30.2**	**36.8**	**39.9**	**33.3**
Zinc	610000	**15.2**	**32**	**44.6**	**44.3**	**35.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-50 (0.5-2.0)	TW-50-50 (DUP of TW-50 (0.5-2.0))	TW-50 (8-10)	TW-51 (0-2)	TW-51-0-2-50 (DUP of TW-51 (0-2))
Laboratory Sample Identification		A8092904	A8092905	A8092906	A8089106	A8086107
Date Collected		1/25/2008	1/25/2008	1/25/2008	1/23/2008	1/23/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.9	<19.1	<18.3	<19.1	<19
Arsenic	38	**9.4**	**12.6**	**5**	**3.3**	**5.9**
Barium	140000	**644**	**993**	**241**	**90.1J**	**301**
Beryllium	4100	**0.69J**	**0.84**	**0.77**	**0.29**	**1.2**
Cadmium	1000	**0.3**	**0.35**	<0.24	<0.25	<0.25
Chromium, Total	4000	**23.5**	**23.8**	**15**	**7.8**	**20.9**
Cobalt	NA	**8.3**	**9.1**	**9.8**	**3.3**	**9.1**
Lead	1000	**1090**	**1730**	**94.4**	**95.3J**	**15.1**
Magnesium	NA	**8810J**	**6910**	**3140**	**965J**	**3410**
Manganese	95000	**467**	**391**	**206**	**156J**	**107**
Mercury	20	**0.107**	**0.059**	<0.019	**0.026**	<0.023
Nickel	41000	**18.2**	**19.4**	**17.8**	**9.5**	**19.2**
Potassium	NA	**1770**	**1620**	**1770**	**726J**	**2050**
Selenium	10000	<5.3	<5.1	<4.9	<5.1	<5.1
Silver	10000	<0.66	<0.64	<0.61	<0.64	<0.63
Vanadium	14000	**42.4**	**49.6**	**30.4**	**14.8J**	**38.5**
Zinc	610000	**79**	**82.2**	**31**	**22.7**	**37.6**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-51 (8-10)	TW-52 (0.5-2.0)	TW-52 (10-12)	TW-53 (0.5-2.0)	TW-53 (12-13.4)
Laboratory Sample Identification		A8086108	A8088801	A8088802	A8088803	A8088804
Date Collected		1/23/2008	1/24/2008	1/24/2008	1/24/2008	1/24/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.5	<18.5	<20.5	<18.5	<24
Arsenic	38	**5.5**	**7.1**	**5.9**	**5.3**	**6.1**
Barium	140000	**140**	**362**	**179**	**119**	**191**
Beryllium	4100	**1.1**	**0.96**	**1.3**	**0.88**	**1.5**
Cadmium	1000	<0.26	<0.25	**0.56**	<0.25	**0.54**
Chromium, Total	4000	**18.1**	**17.3**	**25.2**	**14.8**	**30.3**
Cobalt	NA	**6.9**	**9**	**8**	**11.1**	**8.3**
Lead	1000	**20.1**	**502**	**16.5**	**12.8**	**17.5**
Magnesium	NA	**4290**	**4370**	**5400**	**2070**	**5380**
Manganese	95000	**127**	**313**	**896**	**295**	**577**
Mercury	20	<0.022	**0.031**	**0.041**	<0.021	**0.032**
Nickel	41000	**17.7**	**14.9**	**37.7**	**13.1**	**35.6**
Potassium	NA	**1880**	**1820**	**3040**	**2230**	**3650**
Selenium	10000	<5.2	<4.9	<5.5	<4.9	<6.4
Silver	10000	<0.65	<0.62	<0.68	<0.62	<0.8
Vanadium	14000	**25.2**	**34.1**	**37.5**	**32.4**	**39.8**
Zinc	610000	**35.8**	**55**	**172**	**34.3**	**186**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-54 (0.5-2.0)	TW-54-50 (DUP of TW-5 (0.5-2.0))	TW-55 (0.5-2.0)	TW-55 (4-6)	TW-56 (0-2)
Laboratory Sample Identification		A8088805	A8088806	A8088807	A8088808	A7E44114
Date Collected		1/24/2008	1/24/2008	1/24/2008	1/24/2008	12/7/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<21	<19.4	<19.6	<20	<17.7
Arsenic	38	**5.4J**	**5.8**	**7**	**5.1**	**5.1**
Barium	140000	**222J**	**219**	**267**	**235**	**201**
Beryllium	4100	**1.3**	**1.3**	**1.1**	**1.2**	**1.1**
Cadmium	1000	<0.28	<0.26	<0.26	<0.27	<0.24
Chromium, Total	4000	**22.5J**	**24.9**	**20.7**	**23.2**	**21.1**
Cobalt	NA	**9.8J**	**9**	**9.8**	**8.2**	**7.7**
Lead	1000	**20J**	**19.9**	**86.3**	**25.5**	**13.7**
Magnesium	NA	**2580J**	**2690**	**2890**	**3170**	**3300**
Manganese	95000	**233**	**310**	**345**	**139**	**257**
Mercury	20	<0.021	<0.021	**0.026**	<0.022	**0.035**
Nickel	41000	**38.8J**	**26.5**	**17.2**	**19.9**	**21.5**
Potassium	NA	**1960**	**2090**	**2250**	**2410**	**1770**
Selenium	10000	<5.6	<5.2	<5.2	<5.3	<4.7
Silver	10000	<0.7	<0.65	<0.65	<0.67	<0.59
Vanadium	14000	**53.3J**	**49.1**	**40.6**	**39.7**	**35.9**
Zinc	610000	**44.2J**	**45.3**	**44**	**45.3**	**47.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-57 (0.5-2.0)	TW-58 (0-2)	TW-59 (0.5-2.0)	TW-59-50 (DUP of TW-59 (0.5-2.0))	TW-60 (0.5-2.0)
Laboratory Sample Identification		A8106001	A7E54614	A8105701	A8105702	A7E80003
Date Collected		1/30/2008	12/13/2007	1/29/2008	1/29/2008	12/19/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<19.2	<20.3	<18.9	<17.2	<17.7
Arsenic	38	**6.7**	**6.8**	**7**	**6.3**	**5.9**
Barium	140000	**366**	**406**	**232**	**279**	**186**
Beryllium	4100	**1.1**	**1.1**	**0.98J**	**0.96**	**1.1**
Cadmium	1000	**0.36**	<0.27	<0.25	<0.23	<0.24
Chromium, Total	4000	**18.8**	**20.8**	**17.6**	**18.2**	**21.9**
Cobalt	NA	**8.3**	**8.7**	**9.7**	**8.4**	**7.9**
Lead	1000	**16.3**	**14.7**	**15.8**	**15.4**	**14.3**
Magnesium	NA	**3570**	**3100**	**2860**	**2690**	**2360**
Manganese	95000	**129**	**302**	**378**	**370**	**262**
Mercury	20	<0.023	<0.02	<0.021	<0.019	**0.033**
Nickel	41000	**19.1**	**21.4**	**21.2**	**21**	**15.8**
Potassium	NA	**1820**	**2130**	**1800**	**1720**	**1770**
Selenium	10000	<5.1	<5.4	<5	<4.6	<4.7
Silver	10000	<0.64	<0.68	<0.63	<0.57	<0.59
Vanadium	14000	**37**	**37.3**	**31.4**	**29.4**	**35.5**
Zinc	610000	**44.7**	**42.4**	**40.2**	**38.1**	**37.5**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		TW-61 (0.5-2.0)	TW-62 (0.5-1.5)	TW-63 (0.5-2.0)	TW-64 (0.5-2.0)
Laboratory Sample Identification		A8106007	A7E57003	A7E80004	A7E80001
Date Collected		1/30/2008	12/14/2007	12/19/2007	12/19/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**				
ICP Metals (mg/kg)					
Antimony	820	<19.2	<19.9	<21	<18.6
Arsenic	38	**4.2**	**6.4J**	**5.5**	**6.5J**
Barium	140000	**213**	**241**	**173**	**211**
Beryllium	4100	**0.54**	**1.2J**	**0.88**	**1**
Cadmium	1000	**0.51**	<0.26	<0.28	<0.25
Chromium, Total	4000	**14.4**	**19.3**	**23.3**	**16.1J**
Cobalt	NA	**4.7**	**7.2J**	**6.8**	**9.6J**
Lead	1000	**174**	**16.3**	**181**	**25.6J**
Magnesium	NA	**4630**	**2480**	**2950**	**2640J**
Manganese	95000	**218**	**266**	**243**	**90J**
Mercury	20	**0.857**	<0.021	**1.5**	<0.02
Nickel	41000	**14.4**	**15.9**	**18**	**16.8**
Potassium	NA	**1050**	**2170**	**2290**	**1860**
Selenium	10000	<5.1	<5.3	<5.6	<5
Silver	10000	<0.64	<0.66	<0.7	<0.62
Vanadium	14000	**24.8**	**37.6**	**36.9**	**32.3**
Zinc	610000	**60.4**	**39.4J**	**64.7**	**38.1J**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-64-50 (DUP of TW-64 (0.5-2.0))	TW-65 (2.0-3.0)	TW-66 (0.7-2.0)	TW-67 (0.5-2.0)	TW-68 (0.5-2.0)
Laboratory Sample Identification		A7E80002	A7E71701	A7E64402	A8106006	A8106004
Date Collected		12/19/2007	12/18/2007	12/17/2007	1/30/2008	1/30/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<18.2	<21	<19.3	<16.3	<19.4
Arsenic	38	**4.5**	**6.3**	**6.7**	<2.2	**6.1**
Barium	140000	**182**	**245**	**225**	**25**	**141**
Beryllium	4100	**1**	**1.2**	**1**	<0.22	**0.81**
Cadmium	1000	<0.24	**0.31**	**0.31**	<0.22	**0.52**
Chromium, Total	4000	**16.6**	**19.9**	**15.9**	**2.6**	**15.3**
Cobalt	NA	**7.9**	**7.5**	**6.1**	**1.7**	**8.9**
Lead	1000	**22.9**	**19**	**16.6**	**15.6**	**42.5**
Magnesium	NA	**2820**	**2350**	**2030**	**394**	**7480**
Manganese	95000	**110**	**163**	**306**	**34.5**	**823**
Mercury	20	<0.021	<0.024	<0.02	<0.018	**0.049**
Nickel	41000	**15.2**	**21.4**	**13.4**	**3.1**	**16.3**
Potassium	NA	**1890**	**1900**	**1800**	**286**	**1870**
Selenium	10000	<4.8	<5.6	<5.1	<4.3	<5.2
Silver	10000	<0.61	<0.7	<0.64	<0.54	<0.65
Vanadium	14000	**33.6**	**38.9**	**36.6**	**7**	**26.3**
Zinc	610000	**38.9**	**39.1**	**30.9**	**8.5**	**64**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-68 (4-6)	TW-69 (0.5-2.0)	TW-70 (0.5-2.0)	TW-71 (0.5-2.0)	TW-72 (0-2)
Laboratory Sample Identification		A8106005	A7E64401	A8106002	A8106003	A7D51002
Date Collected		1/30/2008	12/17/2007	1/30/2008	1/30/2008	11/19/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<17.7	<18.1	<16.5	<18.5	<18
Arsenic	38	**4.8**	**5.8**	**5.5**	**6.1**	**3.6**
Barium	140000	**140**	**229**	**82.9**	**234**	**123**
Beryllium	4100	**0.8**	**1.1**	**0.47**	**0.91**	**0.7**
Cadmium	1000	**0.35**	**0.35**	**0.51**	**0.35J**	<0.24
Chromium, Total	4000	**15.2**	**19.9**	**8.9**	**14.4**	**14.5**
Cobalt	NA	**7.8**	**9.4**	**4.7**	**7.8**	**10.4**
Lead	1000	**23.1**	**15.6**	**38.4**	**14.5J**	**15.1**
Magnesium	NA	**11000**	**2160**	**1650**	**2670J**	**1720**
Manganese	95000	**225**	**503**	**157**	**341**	**441**
Mercury	20	**0.027**	<0.023	<0.018	<0.02	<0.021
Nickel	41000	**17.6**	**15.7**	**9.5**	**16**	**12.6**
Potassium	NA	**2340**	**2090**	**976**	**1790**	**2020**
Selenium	10000	<4.7	<4.8	<4.4	<4.9	<4.8
Silver	10000	<0.59	<0.6	<0.55	<0.62	<0.6
Vanadium	14000	**26.7**	**38.6**	**18.5**	**32.5**	**29.3**
Zinc	610000	**32.9**	**37.8**	**63.4**	**33.1**	**32.6**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-72 (11-12.5)	TW-73 (0-2)	TW-74 (0-2)	TW-79 (0.5-2.0)	TW-80 (0.5-2.0)
Laboratory Sample Identification		A7D51003	A7D51004	A7E21501	A8092903	A8092901
Date Collected		11/19/2007	11/19/2007	12/7/2007	1/25/2008	1/25/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	<20.3	<18.2	<16.6	<18.9	<20.5
Arsenic	38	**10.5**	**4**	**4.1**	**5**	**5.4**
Barium	140000	**385**	**127**	**49.8**	**145**	**232**
Beryllium	4100	**1**	**0.78**	**0.22**	**0.69**	**0.75**
Cadmium	1000	**0.56**	<0.24	**0.45**	<0.25	<0.27
Chromium, Total	4000	**20.1**	**15.1**	**8.8**	**15.4**	**17.4**
Cobalt	NA	**33.6**	**6.3**	**4**	**11**	**8.4**
Lead	1000	**29.7**	**12**	**55.2**	**15.9**	**15.9**
Magnesium	NA	**3330**	**1980**	**4160**	**2040**	**2580**
Manganese	95000	**3410**	**316**	**186**	**504**	**317**
Mercury	20	<0.021	<0.022	<0.019	<0.022	<0.021
Nickel	41000	**33.6**	**12.4**	**10.8**	**12.6**	**14.2**
Potassium	NA	**2260**	**2100**	**754**	**1680**	**2330**
Selenium	10000	<5.4	<4.9	<4.4	<5.1	<5.5
Silver	10000	<0.68	<0.61	<0.55	<0.63	<0.68
Vanadium	14000	**49.6**	**31**	**20.1**	**34.5**	**36.5**
Zinc	610000	**60.1**	**32.8**	**67.1**	**30.5**	**37.6**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-80 (10-12.6)	TW-123 (0-2)	TW-123 (2-4)	TW-123 (4-6)	TW-123 (6-8)
Laboratory Sample Identification		A8092902	RSA0244-02	RSA0244-03	RSA0244-04	RSA0244-05
Date Collected		1/25/2008	1/8/2009	1/8/2009	1/8/2009	1/8/2009
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**					
ICP Metals (mg/kg)						
Antimony	820	*<164*	n/a	n/a	n/a	n/a
Arsenic	38	<2.2	n/a	n/a	n/a	n/a
Barium	140000	**8.3**	n/a	n/a	n/a	n/a
Beryllium	4100	**0.28**	n/a	n/a	n/a	n/a
Cadmium	1000	<0.22	n/a	n/a	n/a	n/a
Chromium, Total	4000	**2.9**	n/a	n/a	n/a	n/a
Cobalt	NA	<0.55	n/a	n/a	n/a	n/a
Lead	1000	**1.8**	**130J**	**40**	**11**	**12**
Magnesium	NA	**2670**	n/a	n/a	n/a	n/a
Manganese	95000	**143**	n/a	n/a	n/a	n/a
Mercury	20	<0.017	n/a	n/a	n/a	n/a
Nickel	41000	**1.4**	n/a	n/a	n/a	n/a
Potassium	NA	**207**	n/a	n/a	n/a	n/a
Selenium	10000	<4.4	n/a	n/a	n/a	n/a
Silver	10000	<0.55	n/a	n/a	n/a	n/a
Vanadium	14000	**2.5**	n/a	n/a	n/a	n/a
Zinc	610000	<21.9	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7d

Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Location Identification and Sample Interval (Feet below ground surface)		TW-123 (8-10)	TW-123 (10-12)	TW-123 (12-14)	TW-123 (14-16)
Laboratory Sample Identification		RSA0244-06	RSA0244-07	RSA0244-08	RSA0244-09
Date Collected		1/8/2009	1/8/2009	1/8/2009	1/8/2009
Analyte/Methods (Units)					
Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario					
ICP Metals (mg/kg)					
Antimony	820	n/a	n/a	n/a	n/a
Arsenic	38	n/a	n/a	n/a	n/a
Barium	140000	n/a	n/a	n/a	n/a
Beryllium	4100	n/a	n/a	n/a	n/a
Cadmium	1000	n/a	n/a	n/a	n/a
Chromium, Total	4000	n/a	n/a	n/a	n/a
Cobalt	NA	n/a	n/a	n/a	n/a
Lead	1000	**16**	**38**	**23**	**6.1**
Magnesium	NA	n/a	n/a	n/a	n/a
Manganese	95000	n/a	n/a	n/a	n/a
Mercury	20	n/a	n/a	n/a	n/a
Nickel	41000	n/a	n/a	n/a	n/a
Potassium	NA	n/a	n/a	n/a	n/a
Selenium	10000	n/a	n/a	n/a	n/a
Silver	10000	n/a	n/a	n/a	n/a
Vanadium	14000	n/a	n/a	n/a	n/a
Zinc	610000	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
n/a	Not analyzed
DUP	Duplicate sample

Table 7e

Soil Sample TCLP Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 2)

Location Identification and Sample Interval (Feet below ground surface)		SB-22 (2-4)	SB-25 (4-6)	TW-02 (0-2)	TW-09 (0-2)	TW-10 (7-8)
Laboratory Sample Identification		A7D85313	A7D85316	A7D32201	A7D24307	A7D40709
Date Collected		11/29/2007	11/29/2007	11/14/2007	11/13/2007	11/15/2007
Analyte/Methods (Units)	**Regulatory Level [(A)]**					
Volatile Organic Compounds (µg/l)						
1,1-Dichloroethene	700	<10	<10	<10	<10	<10
1,2-Dichloroethane	500	<10	<10	<10	<10	<10
Benzene	500	**180**	**190**	<10	**12**	<10
Carbon tetrachloride	500	<10	<10	<10	<10	<10
Chlorobenzene	100,000	<10	<10	<10	<10	<10
Chloroform	6,000	**7.4J**	<10	<10	<10	<10
Methyl ethyl ketone (2-butanone)	200,000	<50	<50	<50	<50	<50
Tetrachloroethene	700	<10	<10	<10	<10	<10
Trichloroethene	500	<10	<10	<10	<10	<10
Vinyl chloride	200	<10	<10	<10	<10	<10

(µg/l)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
J	The analyte was positively identified, the quantitation is an estimation.

Table 7e

Soil Sample TCLP Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 2)

Location Identification and Sample Interval (Feet below ground surface)		TW-24 (6-7.5)	TW-28 (25-27.5)	TW-29 (6.5-8)	TW-77 (18-20)
Laboratory Sample Identification		A7D72007	A7D96003	A7E12604	A7E21505
Date Collected		11/27/2007	12/4/2007	12/6/2007	12/7/2007
Analyte/Methods (Units)	**Regulatory Level [(A)]**				
Volatile Organic Compounds (µg/l)					
1,1-Dichloroethene	700	<10	<10	<10	<10
1,2-Dichloroethane	500	<10	<10	<10	<10
Benzene	500	<10	**980**	<10	<10
Carbon tetrachloride	500	<10	<10	<10	<10
Chlorobenzene	100,000	<10	<10	<10	<10
Chloroform	6,000	<10	<10	<10	<10
Methyl ethyl ketone (2-butanone)	200,000	<50	<50	<50	<50
Tetrachloroethene	700	<10	<10	<10	**6.2J**
Trichloroethene	500	<10	<10	<10	<10
Vinyl chloride	200	<10	<10	<10	<10

(µg/l)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
J	The analyte was positively identified, the quantitation is an estimation.

Table 7f

Soil Sample TCLP Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 2)

Location Identification and Sample Interval (Feet below ground surface)		SB-22 (2-4)	SB-25 (4-6)	TW-02 (0-2)	TW-09 (0-2)	TW-10 (7-8)	TW-24 (6-7.5)
Laboratory Sample Identification		A7D85313	A7D85316	A7D32201	A7D23709	A7D40709	A7D72007
Date Collected		11/29/2007	11/29/2007	11/14/2007	11/13/2007	11/15/2007	11/27/2007
Analyte/Methods (Units)	**Regulatory Level[(A)]**						
Semivolatile Organic Compounds (mg/l)							
1,4-Dichlorobenzene	7.5	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
2,4,5-Trichlorophenol	400	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
2,4,6-Trichlorophenol	2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
2,4-Dinitrotoluene	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
2-Methylphenol (o-cresol)	200	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
3-Methylphenol (m-cresol)	200	<0.04	**0.0024J**	<0.04	<0.04	<0.04	<0.04
4-Methylphenol (p-cresol)	200	<0.02	**0.0024J**	<0.02	<0.02	<0.02	<0.02
Hexachlorobenzene	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Hexachlorobutadiene	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Hexachloroethane	3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nitrobenzene	2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Pentachlorophenol	100	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Pyridine	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

(mg/l)	milligrams per kilograms
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics (40 CFR Part 261.24 Table 1).
J	The analyte was positively identified, the quantitation is an estimation.

Table 7f

Soil Sample TCLP Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 2)

Location Identification and Sample Interval (Feet below ground surface)		TW-28 (25-27.5)	TW-29 (6.5-8)	TW-77 (18-20)
Laboratory Sample Identification		A7D96003	A7E12604	A7E21505
Date Collected		12/4/2007	12/6/2007	12/7/2007
Analyte/Methods (Units)	**Regulatory Level[(A)]**			
Semivolatile Organic Compounds (mg/l)				
1,4-Dichlorobenzene	7.5	<0.04	<0.04	<0.04
2,4,5-Trichlorophenol	400	<0.02	<0.02	<0.02
2,4,6-Trichlorophenol	2	<0.02	<0.02	<0.02
2,4-Dinitrotoluene	0.13	<0.02	<0.02	<0.02
2-Methylphenol (o-cresol)	200	<0.02	<0.02	<0.02
3-Methylphenol (m-cresol)	200	<0.04	<0.04	<0.04
4-Methylphenol (p-cresol)	200	<0.02	<0.02	<0.02
Hexachlorobenzene	0.13	<0.02	<0.02	<0.02
Hexachlorobutadiene	0.5	<0.02	<0.02	<0.02
Hexachloroethane	3	<0.02	<0.02	<0.02
Nitrobenzene	2	<0.02	<0.02	<0.02
Pentachlorophenol	100	<0.04	<0.04	<0.04
Pyridine	5	<0.1	<0.1	<0.1

(mg/l)	milligrams per kilograms
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics (40 CFR Part 261.24 Table 1).
J	The analyte was positively identified, the quantitation is an estimation.

Table 7g

Soil Sample TCLP Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 2)

Location Identification and Sample Interval (Feet below ground surface)		SB-22 (2-4)	SB-25 (4-6)	TW-02 (0-2)	TW-09 (0-2)	TW-10 (7-8)
Laboratory Sample Identification		A7D85313	A7D85316	A7D32201	A7D23709	A7D40709
Date Collected		11/29/2007	11/29/2007	11/14/2007	11/13/2007	11/15/2007
Analyte/Methods (Units)	**Regulatory Level (A)**					
TCLP Metals (ug/L)						
Arsenic	5000	<10	<10	<10	<10	<10
Barium	100000	**2310B**	**2170B**	**1220**	**1760B**	**1590**
Cadmium	1000	**1.4**	**2.3**	<1	<1	**1**
Chromium, Total	5000	<4	<4	**11.2**	**8.8**	<4
Lead	5000	**105**	**4980**	**7.8B**	**23B**	<5
Mercury	200	<0.2	<0.2	<0.2	<0.2	<0.2
Selenium	1000	<15	<15	<15	<15	<15
Silver	5000	<3	<3	<3	<3	<3

(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
B	The analyte was found in an associated blank, as well as in the sample.

Table 7g

Soil Sample TCLP Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 2)

Analyte/Methods (Units)	Regulatory Level [(A)]	TW-24 (6-7.5)	TW-28 (25-27.5)	TW-29 (6.5-8)
Location Identification and Sample Interval (Feet below ground surface)		**TW-24 (6-7.5)**	**TW-28 (25-27.5)**	**TW-29 (6.5-8)**
Laboratory Sample Identification		**A7D72007**	**A7D96003**	**A7E12604**
Date Collected		**11/27/2007**	**12/4/2007**	**12/6/2007**
TCLP Metals (ug/L)				
Arsenic	5000	<10	<10	**21.9**
Barium	100000	**2050B**	**484B**	**1480**
Cadmium	1000	**2.8**	<1	<1
Chromium, Total	5000	**6.9**	<4	**65.7**
Lead	5000	<5	**8.8B**	**29.8B**
Mercury	200	<0.2	<0.2	<0.2
Selenium	1000	<15	<15	<15
Silver	5000	<3	<3	<3

(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the regulatory level.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
B	The analyte was found in an associated blank, as well as in the sample.

Table 8

Background Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 2)

Location Identification and Sample Interval (Feet below ground surface)		BG-01 (0.5-1.5)	BG-02 (0.5-1.5)	BG-03 (0.5-1.5)	BG-04 (0.5-1)	BG-05 (0.5-1.0)	BG-06 (0.5-1)	BG-07 (0.5-1.0)	BG-08 (0.5-1.0)
Laboratory Sample Identification		A7D50917	A7D50916	A7D50913	A7D50909	A7D50912	A7D50907	A7D50914	A8086101
Date Collected		11/19/2007	11/19/2007	11/19/2007	11/19/2007	11/17/2007	11/17/2007	11/17/2007	1/11/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**								
ICP Metals (mg/kg)									
Antimony	820	<20.5	<17.8	<18.8	<18.6	<18.7	<18.9	<19.3	<18.7
Arsenic	38	**5.5**	**4.9**	**6**	**4.9**	**4.9**	**5.4**	**4.9**	**5.3**
Barium	140000	**298**	**141**	**257**	**135**	**116**	**124**	**117**	**129**
Beryllium	4100	**1.1**	**0.91**	**1.2**	**0.86**	**0.79**	**0.83**	**0.85**	**0.87**
Cadmium	1000	<0.27	<0.24	<0.25	<0.25	<0.25	<0.25	<0.26	**0.3**
Chromium, Total	4000	**20.8**	**17.3**	**25.3**	**18.3**	**17**	**18.3**	**16.5**	**16.1**
Cobalt	NA	**8.6**	**8.8**	**8.5**	**6**	**6.4**	**6.9**	**6.7**	**9.4**
Lead	1000	**16.7**	**15.4**	**16.2**	**15**	**16.2**	**15.4**	**12.9**	**17**
Magnesium	NA	**3680**	**1910**	**2970**	**1730**	**1810**	**1940**	**1670**	**1930**
Manganese	95000	**327**	**391**	**378**	**316**	**368**	**401**	**352**	**505**
Mercury	20	<0.023	<0.022	<0.022	<0.022	<0.023	<0.021	<0.021	<0.022
Nickel	41000	**20.4**	**15**	**23.9**	**16.5**	**15.2**	**15.6**	**13.9**	**15.3**
Potassium	NA	**2020**	**1840**	**2160**	**2180**	**2100**	**2260**	**1910**	**1890**
Selenium	10000	<5.5	<4.8	<5	<5	<5	<5	<5.2	<5
Silver	10000	<0.68	<0.59	<0.63	<0.62	<0.62	<0.63	<0.64	<0.62
Vanadium	14000	**39.2**	**36.2**	**45.9**	**36.2**	**32.9**	**36**	**33.5**	**32.4**
Zinc	610000	**42.6**	**35.4**	**53**	**38.2**	**39.4**	**39**	**33.7**	**38.5**

(mg/kg) milligrams per kilogram
Bold Bolded result indicates positively identified compound.
Shaded Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
(A) Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
NA Not applicable

Table 8

Background Soil Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 2)

Location Identification and Sample Interval (Feet below ground surface)		BG-09 (0.5-1.5)	BG-10 (0.5-1.5)	BG-11 (0.5-1.5)	BG-12 (0.5-1.5)	BG-13 (0.5-1.5)	BG-14 (0.5-1.5)	BG-15 (0.5-1.5)
Laboratory Sample Identification		A7D50918	A7D50915	A7D50906	A7D50910	A7D50911	A7D50919	A7D50908
Date Collected		11/17/2007	11/17/2007	11/17/2007	11/19/2007	11/19/2007	11/19/2007	11/19/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards Soil Pathway [(A)] Non-Residental Scenario**							
ICP Metals (mg/kg)								
Antimony	820	<20	<19.4	<18.7	<19.6	<19.4	<18.3	<19.6
Arsenic	38	**4.7**	**4.7**	**5**	**5.8**	**5.5**	**5.1**	**5**
Barium	140000	**169**	**151**	**147**	**174**	**214**	**133**	**146**
Beryllium	4100	**0.92**	**0.9**	**0.84**	**1**	**1.1**	**0.86**	**0.85**
Cadmium	1000	<0.27	<0.26	<0.25	<0.26	<0.26	<0.24	<0.26
Chromium, Total	4000	**17.5**	**17.2**	**16**	**20.1**	**23.2**	**17**	**16.7**
Cobalt	NA	**10.5**	**8.9**	**7.4**	**7.9**	**8.3**	**15.2**	**8.1**
Lead	1000	**19.9**	**14.6**	**16.2**	**15.4**	**16.1**	**14.4**	**13.6**
Magnesium	NA	**2190**	**1870**	**1940**	**2630**	**3320**	**2100**	**2020**
Manganese	95000	**658**	**418**	**393**	**300**	**362**	**300**	**300**
Mercury	20	<0.022	<0.02	<0.022	<0.021	<0.021	<0.022	<0.021
Nickel	41000	**17.3**	**15.7**	**15.3**	**16.7**	**18.8**	**12.6**	**12.9**
Potassium	NA	**1950**	**1970**	**1820**	**2550**	**2670**	**1860**	**2020**
Selenium	10000	<5.3	<5.2	<5	<5.2	<5.2	<4.9	<5.2
Silver	10000	<0.67	<0.65	<0.62	<0.65	<0.65	<0.61	<0.65
Vanadium	14000	**35.4**	**34.9**	**32.8**	**40.3**	**42.6**	**35.5**	**35**
Zinc	610000	**50.1**	**33.7**	**34.2**	**42.9**	**49**	**31.1**	**33.8**

(mg/kg) milligrams per kilogram
Bold Bolded result indicates positively identified compound.
Shaded Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
(A) Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
NA Not applicable

Table 9a

AHA Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 7)

	Location Identification and Sample Interval (Feet below ground surface)		TR-01 (2-4)	TR-01 (4-6)	TR-02 (0-2)	TR-02-50 (DUP of TR-2 (0-2))	TR-03 (0-2)	TR-03 (4-6)
	Laboratory Sample Identification		A7E44201	A7E44202	A7E44203	A7E44206	A7E57002	A7E57001
Analyte/Methods (Units)	Date Collected		12/12/2007	12/12/2007	12/12/2007	12/14/2007	12/14/2007	12/14/2007
	Kansas Tier II Risk-Based Standards							
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**						
	Non-Residental Scenario	**Non-Residental Scenario**						
Volatile Organic Compounds (µg/kg)								
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a	n/a	<45
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a	n/a	<45
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a	n/a	*<45*
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a	n/a	<45
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a	n/a	*<45*
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a	n/a	<230
Benzene	17,000	80	*<98*	*<80*	<60	<65	**30J**	**82**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a	n/a	<45
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a	n/a	<45
Chloroform	6,000	960	n/a	n/a	n/a	n/a	n/a	<45
Ethylbenzene	650,000	55,000	<98	<80	<60	<65	**53**	**270**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a	n/a	<45
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a	n/a	<45
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a	n/a	<45
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a	n/a	<45
Toluene	1,000,000	40,000	<98	<80	<60	<65	**28J**	**270**
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a	n/a	<45
Xylenes, total	700,000	700,000	**160**	<80	<60	<65	**180**	**1300**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 9a

AHA Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 7)

	Location Identification and Sample Interval (Feet below ground surface)		**TR-04 (2-4)**	**TR-04 (4-6)**	**TR-05 (2-4)**	**TR-05 (6-8)**	**TR-06 (2-4)**	**TR-06 (4-6)**	**TR-07 (2-4)**
	Laboratory Sample Identification		**A7E44204**	**A7E44205**	**A7E54703**	**A7E54704**	**A7E54705**	**A7E54706**	**A7E54707**
Analyte/Methods (Units)	**Date Collected**		**12/12/2007**	**12/12/2007**	**12/13/2007**	**12/13/2007**	**12/13/2007**	**12/13/2007**	**12/13/2007**
	Kansas Tier II Risk-Based Standards								
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**							
	Non-Residental Scenario	**Non-Residental Scenario**							
Volatile Organic Compounds (µg/kg)									
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	<54	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	<54	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	*<54*	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	<54	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	*<54*	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	<270	n/a	n/a	n/a	n/a
Benzene	17,000	80	<66	<70	<54	<59	<54	<63	<51
Carbon disulfide	950,000	450	n/a	n/a	<54	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	<54	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	<54	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<66	<70	**60**	<59	<54	<63	<51
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	<54	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	<54	n/a	n/a	n/a	n/a
Styrene	2,400,000	16,000	n/a	n/a	<54	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	<54	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<66	<70	<54	<59	<54	<63	<51
Trichloroethene	98,000	200	n/a	n/a	<54	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<66	<70	**200**	<59	<54	<63	<51

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 9a

AHA Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 7)

	Location Identification and Sample Interval (Feet below ground surface)		TR-07 (4-6)	TR-08 (2-4)	TR-08 (4-6)	TR-09 (2-4)	TR-09 (4-6)	TR-10 (2-3)	TR-11 (4-5)
	Laboratory Sample Identification		A7E54708	A7E54709	A7E54710	A7E54701	A7E54702	A8F40204	A8F40203DL
Analyte/Methods (Units)	Date Collected		12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/3/2008	12/3/2008
	Kansas Tier II Risk-Based Standards								
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**							
	Non-Residental Scenario	**Non-Residental Scenario**							
Volatile Organic Compounds (µg/kg)									
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzene	17,000	80	<59	<57	<65	<55	<53	**6**	**1100DJ**
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<59	<57	<65	<55	<53	**2J**	**4300D**
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	n/a	n/a	n/a	n/a	n/a	<5	*<240*
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<59	<57	<65	<55	<53	<5	**12000D**
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<59	<57	<65	<55	<53	**6**	**21000D**

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 9a

AHA Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 7)

	Location Identification and Sample Interval (Feet below ground surface)		**TR-12 (3-4)**	**TR-13 (3-4)**	**TR-14 (3-4)**	**TR-15 (2-3)**	**TR-16 (2-3)**	**TR-17 (4-5)**	**TR-18 (3-4)**
	Laboratory Sample Identification		**A8F40202**	**A8F40201**	**A8F47201**	**A8F40205**	**A8F40206**	**A8F54602**	**A8F54601**
Analyte/Methods (Units)	**Date Collected**		**12/3/2008**	**12/3/2008**	**12/4/2008**	**12/3/2008**	**12/3/2008**	**12/5/2008**	**12/5/2008**
	Kansas Tier II Risk-Based Standards								
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**							
	Non-Residental Scenario	**Non-Residental Scenario**							
Volatile Organic Compounds (µg/kg)									
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzene	17,000	80	**3J**	**9**	<5	**9**	<8	<58	<67
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<5	**5J**	<5	**8**	<8	<58	<67
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<5	<6	<5	<6	<8	<58	<67
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	**1J**	**1J**	<5	**31**	<8	<58	<67
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	**<5**	**16**	<5	**72**	<8	<58	<67

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 9a

AHA Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 5 of 7)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-19 (4-5)	TR-20 (4-5)	TR-21 (2-3)	TR-22 (2-3)	TR-23 (3-4)	TR-24 (3-4)	TR-25 (2-3)
Location Identification and Sample Interval (Feet below ground surface)			TR-19 (4-5)	TR-20 (4-5)	TR-21 (2-3)	TR-22 (2-3)	TR-23 (3-4)	TR-24 (3-4)	TR-25 (2-3)
Laboratory Sample Identification			A8F47206	A8F47205	A8F47202	A8F47203	A8F59101	A8F54603	A8F59102
Date Collected			12/4/2008	12/4/2008	12/4/2008	12/4/2008	12/8/2008	12/5/2008	12/8/2008
Volatile Organic Compounds (µg/kg)									
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzene	17,000	80	<7	<6	<6	<4	<53	<62	<54
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<7	<6	<6	<4	<53	<62	<54
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<7	<6	<6	<4	<53	<62	<54
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<7	<6	<6	<4	<53	<62	<54
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<7	<6	<6	<4	<53	<62	<54

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 9a

AHA Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TR-26 (3-4)	TR-27 (3-4)	TR-28 (2-3)	TR-29 (4-5)	TR-30 (2-3)	TR-31 (2-3)	TR-32 (4-5)
	Laboratory Sample Identification		A8F47204	A8F59104	A8F59103	A8F59105	A8F59106	A8F59107	A8F70601
Analyte/Methods (Units)	Date Collected		12/4/2008	12/8/2008	12/8/2008	12/8/2008	12/8/2008	12/8/2008	12/10/2008
	Kansas Tier II Risk-Based Standards								
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**							
	Non-Residental Scenario	**Non-Residental Scenario**							
Volatile Organic Compounds (µg/kg)									
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzene	17,000	80	<5	<54	<44	<50	<55	<56	<57
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<5	<54	<44	<50	<55	<56	<57
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<5	<54	<44	<50	<55	<56	<57
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<5	<54	<44	<50	<55	<56	<57
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<5	<54	<44	<50	<55	<56	<57

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 9a

AHA Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 7 of 7)

	Location Identification and Sample Interval (Feet below ground surface)		TR-75 DUP of TR-32 (4-5)	TR-33 (2-3)	TR-34 (2-3)	TR-35 (2-3)	TR-36 (3-4)
	Laboratory Sample Identification		A8F70602	A8F70603	A8F70604	A8F70605	A8F40606
Analyte/Methods (Units)	Date Collected		12/10/2008	12/10/2008	12/10/2008	12/10/2008	12/10/2008
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)]	**Soil to GW Pathway[(A)]**					
	Non-Residental Scenario	**Non-Residental Scenario**					
Volatile Organic Compounds (µg/kg)							
1,1,1-Trichloroethane	1,800,000	5,500	n/a	n/a	n/a	n/a	n/a
1,1-Dichloroethane	2,100,000	13,000	n/a	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	200	0.6	n/a	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	990,000	77,000	n/a	n/a	n/a	n/a	n/a
1,2-Dichloroethane	7,300	40	n/a	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	1,700,000	1,100	n/a	n/a	n/a	n/a	n/a
Benzene	17,000	80	<62	<75	<64	<58	<54
Carbon disulfide	950,000	450	n/a	n/a	n/a	n/a	n/a
Chlorobenzene	240,000	4,800	n/a	n/a	n/a	n/a	n/a
Chloroform	6,000	960	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650,000	55,000	<62	<75	<64	<58	<54
Methyl ethyl ketone (2-Butanone)	21,000,000	12,000	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15,000,000	90	<62	<75	<64	<58	<54
Styrene	2,400,000	16,000	n/a	n/a	n/a	n/a	n/a
Tetrachloroethene	140,000	180	n/a	n/a	n/a	n/a	n/a
Toluene	1,000,000	40,000	<62	<75	<64	<58	<54
Trichloroethene	98,000	200	n/a	n/a	n/a	n/a	n/a
Xylenes, total	700,000	700,000	<62	<75	<64	<58	<54

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
D	Compound detected at the secondary dilution factor.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
DUP	Duplicate sample
n/a	Not analyzed

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 14)

Location Identification and Sample Interval (Feet below ground surface)			TR-01 (4-6)	TR-03 (0-2)	TR-03 (4-6)	TR-04 (4-6)	TR-05 (2-4)	TR-05 (6-8)
Laboratory Sample Identification			A7E44202RE	A7E57002	A7E57001	A7E44205RE	A7E54703	A7E54704
Date Collected			12/12/2007	12/14/2007	12/14/2007	12/12/2007	12/12/2007	12/13/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**							
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**						
Semivolatile Organic Compounds (µg/kg)								
1,2-Dichlorobenzene	990,000	77,000	<2200	<3800	<3500	<1000	<4000	<4300
1,3-Dichlorobenzene	NA	NA	<2200	<3800	<3500	<1000	<4000	<4300
1,4-Dichlorobenzene	92,000	9,500	<2200	<3800	<3500	<1000	<4000	<4300
2,4-Dimethylphenol	14,000,000	81,000	<1300	<2300	**1700J**	<620	<2400	<2600
2,4-Dinitrophenol	1,200,000	2,100	<1300	*<2300*	*<2200*	<620	**12000**	*<2600*
2-Methylphenol (o-cresol)	6,500,000	29,000	<1300	<2300	**660J**	<620	<2400	<2600
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<1300	<2300	<2200	<620	<2400	<2600
4-Nitrophenol	NA	NA	<1300	<2300	<2200	<620	<2400	<2600
Acenaphthene	300,000	300,000	<1300	**620J**	**1000J**	<620	**930J**	**990J**
Anthracene	13,000	13,000	**180J**	**1200J**	**3600**	<620	**1900J**	**2200J**
Benzo(a)anthracene	26,000	35,000	**2500**	**11000B**	**37000B**	**110J**	**18000B**	**21000B**
Benzo(a)pyrene	2,600	16,000	**2100**	**6200**	**18000**	**100J**	**9100**	**10000**
Benzo(b)fluoranthene	19,000	19,000	**1200J**	**4900**	**13000**	**64J**	**6700**	**7200**
Benzo(k)fluoranthene	10,000	10,000	**270J**	**2600**	**7000**	<620	**2900**	**3900**
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<1300	<2300	<2200	<620	<2400	<2600
Chrysene	6,400	6,400	**4800**	**21000B**	**57000B**	**240J**	**30000B**	**35000B**
Dibenzo(a,h)anthracene	2,600	11,000	**540J**	**1200J**	**3500**	<620	**1500J**	**1600J**
Diethyl phthalate	3,200,000	3,200,000	<1300	<2300	<2200	<620	<2400	<2600
Dimethyl phthalate	6,812,563,000	11,456,000	<1300	<2300	<2200	<620	<2400	<2600
Di-n-butylphthalate	3,798,000	3,798,000	<1300	<2300	<2200	<620	<2400	<2600
Fluoranthene	220,000	220,000	**480J**	**3500**	**16000**	<620	**3500**	**3700**
Fluorene	270,000	270,000	<1300	**810J**	**1700J**	<620	**1400J**	**1400J**
Indeno(1,2,3-cd)pyrene	5,100	5,100	**320J**	**690J**	**1700J**	<620	**940J**	**930J**

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 14)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-01 (4-6)	TR-03 (0-2)	TR-03 (4-6)	TR-04 (4-6)	TR-05 (2-4)	TR-05 (6-8)
Location Identification and Sample Interval (Feet below ground surface)			**TR-01 (4-6)**	**TR-03 (0-2)**	**TR-03 (4-6)**	**TR-04 (4-6)**	**TR-05 (2-4)**	**TR-05 (6-8)**
Laboratory Sample Identification			**A7E44202RE**	**A7E57002**	**A7E57001**	**A7E44205RE**	**A7E54703**	**A7E54704**
Date Collected			**12/12/2007**	**12/14/2007**	**12/14/2007**	**12/12/2007**	**12/12/2007**	**12/13/2007**
Semivolatile Organic Compounds (µg/kg)								
Naphthalene	325,000	3,520	<1300	**670J**	**1600J**	<620	**540J**	**610J**
Phenanthrene	NA	NA	**1500**	**7400**	**21000**	<620	**11000**	**13000**
Phenol	32,000,000	560,000	<1300	<2300	<2200	<620	<2400	<2600
Pyrene	140,000	140,000	**3200**	**17000**	**54000**	**130J**	**16000**	**18000**
Pyridine	150,000	50	*<1300*	*<2300*	*<2200*	*<620*	*<2400*	*<2600*
Quinoline	NA	NA	<1300	<2300	<2200	<620	<2400	<2600

(µg/kg) micrograms per kilogram
Bold Bolded result indicates positively identified compound.
Italics Italicized result indicates the reporting limit is greater than the standard.
Shaded Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA Not applicaple
J The analyte was positively identified, the quantitation is an estimation.
(A) Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B) Risk-Based Standards for 4-methylphenol used for m&p-cresols.
B The analyte was found in an associated blank, as well as in the sample.
DUP Duplicate sample

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 14)

Location Identification and Sample Interval (Feet below ground surface)			TR-06 (2-4)	TR-06 (4-6)	TR-07 (2-4)	TR-07 (4-6)	TR-08 (2-4)	TR-08 (4-6)
Laboratory Sample Identification			A7E54705	A7E54706	A7E54707	A7E54708	A7E54709	A7E54710
Date Collected			12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**							
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**						
Semivolatile Organic Compounds (µg/kg)								
1,2-Dichlorobenzene	990,000	77,000	<3900	<1000	<3900	<1000	<1000	<4100
1,3-Dichlorobenzene	NA	NA	<3900	<1000	<3900	<1000	<1000	<4100
1,4-Dichlorobenzene	92,000	9,500	<3900	<1000	<3900	<1000	<1000	<4100
2,4-Dimethylphenol	14,000,000	81,000	<2400	<620	<2400	<640	<610	<2500
2,4-Dinitrophenol	1,200,000	2,100	*<2400*	<620	*<2400*	<640	<610	*<2500*
2-Methylphenol (o-cresol)	6,500,000	29,000	<2400	<620	<2400	<640	<610	<2500
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<2400	<620	<2400	<640	<610	<2500
4-Nitrophenol	NA	NA	<2400	<620	<2400	<640	<610	<2500
Acenaphthene	300,000	300,000	<2400	<620	<2400	<640	<610	<2500
Anthracene	13,000	13,000	**230J**	<620	**200J**	<640	**58J**	<2500
Benzo(a)anthracene	26,000	35,000	**2500B**	<620	**3400B**	**290JB**	**500JB**	**1100JB**
Benzo(a)pyrene	2,600	16,000	**3700**	**240J**	**4800**	**360J**	**1000**	**2500**
Benzo(b)fluoranthene	19,000	19,000	**2700**	**180J**	**3600**	**180J**	**860**	**1100J**
Benzo(k)fluoranthene	10,000	10,000	**1600J**	**160J**	**1800J**	**220J**	**470J**	<2500
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<2400	<620	<2400	<640	<610	<2500
Chrysene	6,400	6,400	**5400B**	<620	**7400B**	**480JB**	**970B**	**1500JB**
Dibenzo(a,h)anthracene	2,600	11,000	**840J**	**67J**	**1300J**	**130J**	**350J**	**1200J**
Diethyl phthalate	3,200,000	3,200,000	<2400	<620	<2400	<640	<610	<2500
Dimethyl phthalate	6,812,563,000	11,456,000	<2400	<620	<2400	<640	<610	<2500
Di-n-butylphthalate	3,798,000	3,798,000	<2400	<620	<2400	<640	<610	<2500
Fluoranthene	220,000	220,000	**430J**	<620	**390J**	<640	**330J**	**220J**
Fluorene	270,000	270,000	<2400	<620	<2400	<640	<610	<2500
Indeno(1,2,3-cd)pyrene	5,100	5,100	**740J**	**50J**	**960J**	**110J**	**230J**	**920J**

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-06 (2-4)	TR-06 (4-6)	TR-07 (2-4)	TR-07 (4-6)	TR-08 (2-4)	TR-08 (4-6)
Location Identification and Sample Interval (Feet below ground surface)			**TR-06 (2-4)**	**TR-06 (4-6)**	**TR-07 (2-4)**	**TR-07 (4-6)**	**TR-08 (2-4)**	**TR-08 (4-6)**
Laboratory Sample Identification			**A7E54705**	**A7E54706**	**A7E54707**	**A7E54708**	**A7E54709**	**A7E54710**
Date Collected			**12/13/2007**	**12/13/2007**	**12/13/2007**	**12/13/2007**	**12/13/2007**	**12/13/2007**
Semivolatile Organic Compounds (µg/kg)								
Naphthalene	325,000	3,520	<2400	<620	<2400	<640	<610	<2500
Phenanthrene	NA	NA	**900J**	<620	**580J**	**52J**	**180J**	<2500
Phenol	32,000,000	560,000	<2400	<620	<2400	<640	<610	<2500
Pyrene	140,000	140,000	**3500**	**190J**	**3200**	**150J**	**420J**	**300J**
Pyridine	150,000	50	*<2400*	*<620*	*<2400*	*<640*	*<610*	*<2500*
Quinoline	NA	NA	<2400	<620	<2400	<640	<610	<2500

(µg/kg) micrograms per kilogram
Bold Bolded result indicates positively identified compound.
Italics Italicized result indicates the reporting limit is greater than the standard.
Shaded Shaded result indicates result greater than or equal to the most conservative Kansas T
Non-Residential Scenario.
NA Not applicaple
J The analyte was positively identified, the quantitation is an estimation.
(A) Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 20
and 2003, 2004, and 2007 revisions).
(B) Risk-Based Standards for 4-methylphenol used for m&p-cresols.
B The analyte was found in an associated blank, as well as in the sample.
DUP Duplicate sample

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-09 (2-4)	TR-09 (4-6)	TR-10 (2-3)	TR-11 (4-5)	TR-12 (3-4)	TR-13 (3-4)
Location Identification and Sample Interval (Feet below ground surface)								
Laboratory Sample Identification			A7E54701	A7E54702	A8F40204	A8F40203	A8F40202	A8F40201
Date Collected			12/13/2007	12/13/2007	12/3/2008	12/3/2008	12/3/2008	12/3/2008
Semivolatile Organic Compounds (µg/kg)								
1,2-Dichlorobenzene	990,000	77,000	<210	<210	<42000	*<210000*	<20000	<20000
1,3-Dichlorobenzene	NA	NA	<210	<210	<42000	<210000	<20000	<20000
1,4-Dichlorobenzene	92,000	9,500	<210	<210	*<42000*	*<210000*	*<20000*	*<20000*
2,4-Dimethylphenol	14,000,000	81,000	<120	<120	<25000	*<130000*	<12000	<12000
2,4-Dinitrophenol	1,200,000	2,100	<120	<120	*<25000*	*<130000*	*<12000*	*<12000*
2-Methylphenol (o-cresol)	6,500,000	29,000	<120	<120	<25000	*<130000*	<12000	<12000
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<120	<120	*<25000*	*<130000*	*<12000*	*<12000*
4-Nitrophenol	NA	NA	<120	<120	<25000	<130000	<12000	<12000
Acenaphthene	300,000	300,000	<120	<120	<25000	<130000	<12000	<12000
Anthracene	13,000	13,000	<120	**10J**	**3600J**	**9500J**	<12000	<12000
Benzo(a)anthracene	26,000	35,000	**51JB**	**52BJ**	**39000**	**44000J**	**6800J**	**4700J**
Benzo(a)pyrene	2,600	16,000	**46J**	**46J**	**34000**	**35000J**	**9600J**	**2600J**
Benzo(b)fluoranthene	19,000	19,000	**36J**	**44J**	**16000J**	**23000J**	**4500J**	**3600J**
Benzo(k)fluoranthene	10,000	10,000	**19J**	**18J**	**2900J**	**9100J**	**1000J**	**1100J**
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<120	<120	<25000	<130000	<12000	<12000
Chrysene	6,400	6,400	**88JB**	**94BJ**	**81000**	**77000J**	**17000**	**12000**
Dibenzo(a,h)anthracene	2,600	11,000	**17J**	**10J**	**8500J**	*<130000*	**2400J**	*<12000*
Diethyl phthalate	3,200,000	3,200,000	<120	<120	<25000	<130000	<12000	<12000
Dimethyl phthalate	6,812,563,000	11,456,000	<120	<120	<25000	<130000	<12000	<12000
Di-n-butylphthalate	3,798,000	3,798,000	<120	<120	<25000	<130000	<12000	<12000
Fluoranthene	220,000	220,000	**14J**	**12J**	**8600J**	**13000J**	**1400J**	**940J**
Fluorene	270,000	270,000	<120	<120	<25000	<130000	<12000	<12000
Indeno(1,2,3-cd)pyrene	5,100	5,100	<120	**8J**	*<25000*	*<130000*	*<12000*	**1800J**

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 6 of 14)

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-09 (2-4)	TR-09 (4-6)	TR-10 (2-3)	TR-11 (4-5)	TR-12 (3-4)	TR-13 (3-4)
	Laboratory Sample Identification			A7E54701	A7E54702	A8F40204	A8F40203	A8F40202	A8F40201
	Date Collected			12/13/2007	12/13/2007	12/3/2008	12/3/2008	12/3/2008	12/3/2008
Semivolatile Organic Compounds (µg/kg)									
Naphthalene		325,000	3,520	**15J**	<120	*<25000*	**10000J**	*<12000*	*<12000*
Phenanthrene		NA	NA	**21J**	**42J**	**18000J**	**59000J**	**1900J**	**1400J**
Phenol		32,000,000	560,000	<120	<120	<25000	<130000	<12000	<12000
Pyrene		140,000	140,000	**46J**	**58J**	**58000**	**72000J**	**11000J**	**8200J**
Pyridine		150,000	50	*<120*	*<120*	*<25000*	*<130000*	*<12000*	*<12000*
Quinoline		NA	NA	<120	<120	<25000	<130000	<12000	<12000

(µg/kg) micrograms per kilogram
Bold Bolded result indicates positively identified compound.
Italics Italicized result indicates the reporting limit is greater than the standard.
Shaded Shaded result indicates result greater than or equal to the most conservative Kansas T
Non-Residential Scenario.
NA Not applicaple
J The analyte was positively identified, the quantitation is an estimation.
(A) Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 20
and 2003, 2004, and 2007 revisions).
(B) Risk-Based Standards for 4-methylphenol used for m&p-cresols.
B The analyte was found in an associated blank, as well as in the sample.
DUP Duplicate sample

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 7 of 14)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-14 (3-4)	TR-15 (2-3)	TR-16 (2-3)	TR-17 (4-5)	TR-18 (3-4)	TR-19 (4-5)
Location Identification and Sample Interval (Feet below ground surface)			TR-14 (3-4)	TR-15 (2-3)	TR-16 (2-3)	TR-17 (4-5)	TR-18 (3-4)	TR-19 (4-5)
Laboratory Sample Identification			A8F47201	A8F40205	A8F40206	A8F54602	A8F54601	A8F47206
Date Collected			12/3/2008	12/3/2008	12/3/2008	12/5/2008	12/5/2008	12/4/2008
Semivolatile Organic Compounds (µg/kg)								
1,2-Dichlorobenzene	990,000	77,000	<10000	<21000	<2400	<20000	<8800	<20000
1,3-Dichlorobenzene	NA	NA	<10000	<21000	<2400	<20000	<8800	<20000
1,4-Dichlorobenzene	92,000	9,500	*<10000*	*<21000*	<2400	*<20000*	<8800	*<20000*
2,4-Dimethylphenol	14,000,000	81,000	<6400	<13000	<1400	<12000	<5400	<12000
2,4-Dinitrophenol	1,200,000	2,100	*<6400*	*<13000*	<1400	*<12000*	*<5400*	*<12000*
2-Methylphenol (o-cresol)	6,500,000	29,000	<6400	<13000	<1400	<12000	<5400	<12000
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<6400	*<13000*	<1400	*<12000*	<5400	*<12000*
4-Nitrophenol	NA	NA	<6400	<13000	<1400	<12000	<5400	<12000
Acenaphthene	300,000	300,000	<6400	<13000	<1400	<12000	<5400	<12000
Anthracene	13,000	13,000	<6400	*<13000*	<1400	<12000	<5400	<12000
Benzo(a)anthracene	26,000	35,000	**1400J**	**7100J**	**350J**	**2000J**	**610J**	**3200J**
Benzo(a)pyrene	2,600	16,000	**3200J**	**6600J**	<1400	**4700J**	*<5400*	**6800J**
Benzo(b)fluoranthene	19,000	19,000	**1400J**	**3700J**	**110J**	**1600J**	<5400	**2500J**
Benzo(k)fluoranthene	10,000	10,000	**430J**	**1600J**	**110J**	**860J**	<5400	*<12000*
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<6400	<13000	<1400	<12000	<5400	<12000
Chrysene	6,400	6,400	**3400J**	**18000**	**230J**	**4900J**	<5400	**6800J**
Dibenzo(a,h)anthracene	2,600	11,000	**1200J**	*<13000*	<1400	*<12000*	*<5400*	**1400J**
Diethyl phthalate	3,200,000	3,200,000	<6400	<13000	<1400	<12000	<5400	<12000
Dimethyl phthalate	6,812,563,000	11,456,000	<6400	<13000	<1400	<12000	<5400	<12000
Di-n-butylphthalate	3,798,000	3,798,000	<6400	<13000	<1400	<12000	<5400	<12000
Fluoranthene	220,000	220,000	**480J**	**2000J**	**100J**	<12000	<5400	<12000
Fluorene	270,000	270,000	<6400	<13000	<1400	<12000	<5400	<12000
Indeno(1,2,3-cd)pyrene	5,100	5,100	**1000J**	*<13000*	<1400	**1500J**	*<5400*	**1800J**

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 8 of 14)

	Location Identification and Sample Interval (Feet below ground surface)		**TR-14 (3-4)**	**TR-15 (2-3)**	**TR-16 (2-3)**	**TR-17 (4-5)**	**TR-18 (3-4)**	**TR-19 (4-5)**
	Laboratory Sample Identification		**A8F47201**	**A8F40205**	**A8F40206**	**A8F54602**	**A8F54601**	**A8F47206**
	Date Collected		**12/3/2008**	**12/3/2008**	**12/3/2008**	**12/5/2008**	**12/5/2008**	**12/4/2008**
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standards**							
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to GW Pathway[(A)] Non-Residental Scenario**						
Semivolatile Organic Compounds (µg/kg)								
Naphthalene	325,000	3,520	*<6400*	*<13000*	<1400	*<12000*	*<5400*	*<12000*
Phenanthrene	NA	NA	**720J**	**5200J**	**310J**	<12000	<5400	**1300J**
Phenol	32,000,000	560,000	<6400	<13000	<1400	<12000	<5400	<12000
Pyrene	140,000	140,000	**1700J**	**10000J**	**290J**	**2900J**	<5400	**6500J**
Pyridine	150,000	50	*<6400*	*<13000*	*<1400*	*<12000*	*<5400*	*<12000*
Quinoline	NA	NA	<6400	<13000	<1400	<12000	<5400	<12000

(µg/kg) micrograms per kilogram
Bold Bolded result indicates positively identified compound.
Italics Italicized result indicates the reporting limit is greater than the standard.
Shaded Shaded result indicates result greater than or equal to the most conservative Kansas T
Non-Residential Scenario.
NA Not applicaple
J The analyte was positively identified, the quantitation is an estimation.
(A) Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 20
and 2003, 2004, and 2007 revisions).
(B) Risk-Based Standards for 4-methylphenol used for m&p-cresols.
B The analyte was found in an associated blank, as well as in the sample.
DUP Duplicate sample

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 9 of 14)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-20 (4-5)	TR-21 (2-3)	TR-22 (2-3)	TR-23 (3-4)	TR-24 (3-4)	TR-25 (2-3)
Location Identification and Sample Interval (Feet below ground surface)			**TR-20 (4-5)**	**TR-21 (2-3)**	**TR-22 (2-3)**	**TR-23 (3-4)**	**TR-24 (3-4)**	**TR-25 (2-3)**
Laboratory Sample Identification			**A8F47205**	**A8F47202**	**A8F47203**	**A8F59101**	**A8F54603**	**A8F59102**
Date Collected			**12/4/2008**	**12/4/2008**	**12/4/2008**	**12/8/2008**	**12/5/2008**	**12/8/2008**
Semivolatile Organic Compounds (µg/kg)								
1,2-Dichlorobenzene	990,000	77,000	<8200	<10000	<19000	<2000	<19000	<2200
1,3-Dichlorobenzene	NA	NA	<8200	<10000	<19000	<2000	<19000	<2200
1,4-Dichlorobenzene	92,000	9,500	<8200	*<10000*	*<19000*	<2000	*<19000*	<2200
2,4-Dimethylphenol	14,000,000	81,000	<5000	<6200	<12000	<1200	<11000	<1300
2,4-Dinitrophenol	1,200,000	2,100	*<5000*	*<6200*	*<12000*	<1200	*<11000*	<1300
2-Methylphenol (o-cresol)	6,500,000	29,000	<5000	<6200	<12000	<1200	<11000	<1300
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<5000	<6200	*<12000*	<1200	*<11000*	<1300
4-Nitrophenol	NA	NA	<5000	<6200	<12000	<1200	<11000	<1300
Acenaphthene	300,000	300,000	<5000	<6200	<12000	<1200	<11000	<1300
Anthracene	13,000	13,000	<5000	<6200	<12000	<1200	<11000	<1300
Benzo(a)anthracene	26,000	35,000	**2600J**	<6200	**1500J**	**430J**	**4100J**	**250J**
Benzo(a)pyrene	2,600	16,000	**4300J**	**1700J**	**2600J**	**800J**	**8500J**	**520J**
Benzo(b)fluoranthene	19,000	19,000	**1900J**	<6200	**1300J**	**400J**	<11000	**230J**
Benzo(k)fluoranthene	10,000	10,000	**940J**	<6200	*<12000*	<1200	*<11000*	<1300
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<5000	<6200	<12000	<1200	<11000	<1300
Chrysene	6,400	6,400	**4800J**	**1400J**	**3500J**	**1200**	**6800J**	**360J**
Dibenzo(a,h)anthracene	2,600	11,000	**880J**	*<6200*	*<12000*	**280J**	**2200J**	**180J**
Diethyl phthalate	3,200,000	3,200,000	<5000	<6200	<12000	<1200	<11000	<1300
Dimethyl phthalate	6,812,563,000	11,456,000	<5000	<6200	<12000	<1200	<11000	<1300
Di-n-butylphthalate	3,798,000	3,798,000	<5000	<6200	<12000	<1200	<11000	<1300
Fluoranthene	220,000	220,000	**400J**	<6200	<12000	**140J**	<11000	**200J**
Fluorene	270,000	270,000	<5000	<6200	<12000	<1200	<11000	<1300
Indeno(1,2,3-cd)pyrene	5,100	5,100	<5000	**840J**	**1300J**	**230J**	*<11000*	**200J**

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 10 of 14)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-20 (4-5)	TR-21 (2-3)	TR-22 (2-3)	TR-23 (3-4)	TR-24 (3-4)	TR-25 (2-3)
Location Identification and Sample Interval (Feet below ground surface)			**TR-20 (4-5)**	**TR-21 (2-3)**	**TR-22 (2-3)**	**TR-23 (3-4)**	**TR-24 (3-4)**	**TR-25 (2-3)**
Laboratory Sample Identification			**A8F47205**	**A8F47202**	**A8F47203**	**A8F59101**	**A8F54603**	**A8F59102**
Date Collected			**12/4/2008**	**12/4/2008**	**12/4/2008**	**12/8/2008**	**12/5/2008**	**12/8/2008**
Semivolatile Organic Compounds (µg/kg)								
Naphthalene	325,000	3,520	*<5000*	*<6200*	*<12000*	<1200	*<11000*	<1300
Phenanthrene	NA	NA	**560J**	<6200	<12000	**160J**	**820J**	**280J**
Phenol	32,000,000	560,000	<5000	<6200	<12000	<1200	<11000	<1300
Pyrene	140,000	140,000	**4000J**	**740J**	**2200J**	**730J**	**7200J**	**470J**
Pyridine	150,000	50	*<5000*	*<6200*	*<12000*	*<1200*	*<11000*	*<1300*
Quinoline	NA	NA	<5000	<6200	<12000	<1200	<11000	<1300

(µg/kg)	micrograms per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas T Non-Residential Scenario.
NA	Not applicaple
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 20 and 2003, 2004, and 2007 revisions).
(B)	Risk-Based Standards for 4-methylphenol used for m&p-cresols.
B	The analyte was found in an associated blank, as well as in the sample.
DUP	Duplicate sample

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 11 of 14)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-26 (3-4)	TR-27 (3-4)	TR-28 (2-3)	TR-29 (4-5)	TR-30 (2-3)	TR-31 (2-3)
Location Identification and Sample Interval (Feet below ground surface)			TR-26 (3-4)	TR-27 (3-4)	TR-28 (2-3)	TR-29 (4-5)	TR-30 (2-3)	TR-31 (2-3)
Laboratory Sample Identification			A8F47204	A8F59104	A8F59103	A8F59105	A8F59106	A8F59107
Date Collected			12/4/2008	12/8/2008	12/8/2008	12/8/2008	12/8/2008	12/8/2008
Semivolatile Organic Compounds (µg/kg)								
1,2-Dichlorobenzene	990,000	77,000	<20000	<7200	<1900	<3800	<4000	<4000
1,3-Dichlorobenzene	NA	NA	<20000	<7200	<1900	<3800	<4000	<4000
1,4-Dichlorobenzene	92,000	9,500	*<20000*	<7200	<1900	<3800	<4000	<4000
2,4-Dimethylphenol	14,000,000	81,000	<12000	<4400	<1200	<2300	<2400	<2400
2,4-Dinitrophenol	1,200,000	2,100	*<12000*	*<4400*	<1200	*<2300*	*<2400*	*<2400*
2-Methylphenol (o-cresol)	6,500,000	29,000	<12000	<4400	<1200	<2300	<2400	<2400
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	*<12000*	<4400	<1200	<2300	<2400	<2400
4-Nitrophenol	NA	NA	<12000	<4400	<1200	<2300	<2400	<2400
Acenaphthene	300,000	300,000	<12000	<4400	<1200	<2300	<2400	<2400
Anthracene	13,000	13,000	<12000	<4400	**110J**	<2300	<2400	**180J**
Benzo(a)anthracene	26,000	35,000	**1600J**	**2400J**	**400J**	**1500J**	**1100J**	**1200J**
Benzo(a)pyrene	2,600	16,000	**2500J**	**5300**	**860J**	**2500**	**3100**	**2400**
Benzo(b)fluoranthene	19,000	19,000	**1500J**	**2000J**	**420J**	**1000J**	**1200J**	**1000J**
Benzo(k)fluoranthene	10,000	10,000	*<12000*	**470J**	<1200	**210J**	<2400	<2400
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<12000	<4400	<1200	<2300	<2400	<2400
Chrysene	6,400	6,400	**2000J**	**6700**	**800J**	**3400**	**2500**	**3500**
Dibenzo(a,h)anthracene	2,600	11,000	*<12000*	**1400J**	**300J**	<2300	**1000J**	**700J**
Diethyl phthalate	3,200,000	3,200,000	<12000	<4400	<1200	<2300	<2400	<2400
Dimethyl phthalate	6,812,563,000	11,456,000	<12000	<4400	<1200	<2300	<2400	<2400
Di-n-butylphthalate	3,798,000	3,798,000	<12000	<4400	<1200	<2300	<2400	<2400
Fluoranthene	220,000	220,000	<12000	**420J**	**260J**	**320J**	<2400	**610J**
Fluorene	270,000	270,000	<12000	<4400	<1200	<2300	<2400	<2400
Indeno(1,2,3-cd)pyrene	5,100	5,100	*<12000*	**1700J**	**360J**	<2300	<2400	**440J**

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 12 of 14)

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-26 (3-4)	TR-27 (3-4)	TR-28 (2-3)	TR-29 (4-5)	TR-30 (2-3)	TR-31 (2-3)
	Laboratory Sample Identification			A8F47204	A8F59104	A8F59103	A8F59105	A8F59106	A8F59107
	Date Collected			12/4/2008	12/8/2008	12/8/2008	12/8/2008	12/8/2008	12/8/2008
Semivolatile Organic Compounds (µg/kg)									
Naphthalene		325,000	3,520	*<12000*	*<4400*	<1200	<2300	<2400	<2400
Phenanthrene		NA	NA	<12000	**920J**	**150J**	**350J**	<2400	**480J**
Phenol		32,000,000	560,000	<12000	<4400	<1200	<2300	<2400	<2400
Pyrene		140,000	140,000	**1200J**	**4400**	**650J**	**3100**	**790J**	**3000**
Pyridine		150,000	50	*<12000*	*<4400*	*<1200*	*<2300*	*<2400*	*<2400*
Quinoline		NA	NA	<12000	<4400	<1200	<2300	<2400	<2400

(µg/kg) micrograms per kilogram
Bold Bolded result indicates positively identified compound.
Italics Italicized result indicates the reporting limit is greater than the standard.
Shaded Shaded result indicates result greater than or equal to the most conservative Kansas T
Non-Residential Scenario.
NA Not applicaple
J The analyte was positively identified, the quantitation is an estimation.
(A) Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 20
and 2003, 2004, and 2007 revisions).
(B) Risk-Based Standards for 4-methylphenol used for m&p-cresols.
B The analyte was found in an associated blank, as well as in the sample.
DUP Duplicate sample

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 13 of 14)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-32 (4-5)	TR-75 DUP of TR-32 (4-5)	TR-33 (2-3)	TR-34 (2-3)	TR-35 (2-3)	TR-36 (3-4)
Laboratory Sample Identification			A8F70601	A8F70602	A8F70603	A8F70604	A8F70605	A8F40606
Date Collected			12/10/2008	12/10/2008	12/10/2008	12/10/2008	12/10/2008	12/10/2008
Semivolatile Organic Compounds (µg/kg)								
1,2-Dichlorobenzene	990,000	77,000	<8000	<20000	<21000	<20000	<7700	<18000
1,3-Dichlorobenzene	NA	NA	<8000	<20000	<21000	<20000	<7700	<18000
1,4-Dichlorobenzene	92,000	9,500	<8000	*<20000*	*<21000*	*<20000*	<7700	*<18000*
2,4-Dimethylphenol	14,000,000	81,000	<4900	<12000	<12000	<12000	<4700	<11000
2,4-Dinitrophenol	1,200,000	2,100	*<4900R*	*<12000*	*<12000*	*<12000*	*<4700*	*<11000*
2-Methylphenol (o-cresol)	6,500,000	29,000	<4900	<12000	<12000	<12000	<4700	<11000
3+4-Methylphenol (m&p-cresols)[(B)]	3,400,000	6,500	<4900	*<12000*	*<12000*	*<12000*	<4700	*<11000*
4-Nitrophenol	NA	NA	<4900UJ	<12000	<12000	<12000	<4700	<11000
Acenaphthene	300,000	300,000	<4900	<12000	<12000	<12000	<4700	<11000
Anthracene	13,000	13,000	*<4900*	<12000	<12000	<12000	<4700	<11000
Benzo(a)anthracene	26,000	35,000	**1400J**	**2300J**	**3400J**	**9400J**	**1600J**	**4400J**
Benzo(a)pyrene	2,600	16,000	**3200J**	**7000J**	**9100J**	**13000**	**2500J**	**16000**
Benzo(b)fluoranthene	19,000	19,000	**1700J**	**2600J**	**3100J**	**5200J**	**1200J**	**6800J**
Benzo(k)fluoranthene	10,000	10,000	<4900	*<12000*	*<12000*	**1400J**	**390J**	**1500J**
Bis(2-ethylhexyl)phthalate	1,400,000	18,000,000	<4900	<12000	<12000	<12000	<4700	<11000
Chrysene	6,400	6,400	**4000J**	**7500J**	**8000J**	**20000**	**4000J**	**20000**
Dibenzo(a,h)anthracene	2,600	11,000	*<4900*	*<12000*	**3600J**	*<12000*	**600J**	**5100J**
Diethyl phthalate	3,200,000	3,200,000	<4900UJ	<12000	<12000	<12000	<4700	<11000
Dimethyl phthalate	6,812,563,000	11,456,000	<4900UJ	<12000	<12000	<12000	<4700	<11000
Di-n-butylphthalate	3,798,000	3,798,000	<4900	<12000	<12000	<12000	<4700	<11000
Fluoranthene	220,000	220,000	<4900	<12000	<12000	**1900J**	<4700	<11000
Fluorene	270,000	270,000	<4900	<12000	<12000	<12000	<4700	<11000
Indeno(1,2,3-cd)pyrene	5,100	5,100	**890J**	*<12000*	*<12000*	**2800J**	**570J**	*<11000*

Table 9b

AHA Sample Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to GW Pathway[(A)] Non-Residental Scenario	TR-32 (4-5)	TR-75 DUP of TR-32 (4-5)	TR-33 (2-3)	TR-34 (2-3)	TR-35 (2-3)	TR-36 (3-4)
Location Identification and Sample Interval (Feet below ground surface)								
Laboratory Sample Identification			A8F70601	A8F70602	A8F70603	A8F70604	A8F70605	A8F40606
Date Collected			12/10/2008	12/10/2008	12/10/2008	12/10/2008	12/10/2008	12/10/2008
Semivolatile Organic Compounds (µg/kg)								
Naphthalene	325,000	3,520	*<4900*	*<12000*	*<12000*	*<12000*	*<4700*	*<11000*
Phenanthrene	NA	NA	<4900	<12000	<12000	**2400J**	<4700	<11000
Phenol	32,000,000	560,000	<4900	<12000	<12000	<12000	<4700	<11000
Pyrene	140,000	140,000	**2000J**	**3400J**	**3400J**	**16000**	**2300J**	**22000**
Pyridine	150,000	50	*<4900*	*<12000*	*<12000*	*<12000*	*<4700*	*<11000*
Quinoline	NA	NA	<4900	<12000	<12000	<12000	<4700	<11000

(µg/kg) micrograms per kilogram
Bold Bolded result indicates positively identified compound.
Italics Italicized result indicates the reporting limit is greater than the standard.
Shaded Shaded result indicates result greater than or equal to the most conservative Kansas T
Non-Residential Scenario.
NA Not applicaple
J The analyte was positively identified, the quantitation is an estimation.
(A) Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 20
and 2003, 2004, and 2007 revisions).
(B) Risk-Based Standards for 4-methylphenol used for m&p-cresols.
B The analyte was found in an associated blank, as well as in the sample.
DUP Duplicate sample

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-01 (2-4)	TR-01 (4-6)	TR-02 (0-2)	TR-02-50 (DUP of TR-2 (0-2))	TR-03 (0-2)
Location Identification and Sample Interval (Feet below ground surface)			TR-01 (2-4)	TR-01 (4-6)	TR-02 (0-2)	TR-02-50 (DUP of TR-2 (0-2))	TR-03 (0-2)
Laboratory Sample Identification			A7E44201	A7E44202	A7E44203	A7E44206	A7E57002
Date Collected			12/12/2007	12/12/2007	12/12/2007	12/12/2007	12/14/2007
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**1900J**	**390J**	<3.3	**13**	**1600**
Gasoline Range Organics	450	150	**6.8**	**1.3J**	<5	<5	**3.7J**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-01 (2-4)	TR-01 (4-6)	TR-02 (0-2)	TR-02-50 (DUP of TR-2 (0-2))	TR-03 (0-2)
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A7E44201	A7E44202	A7E44203	A7E44206	A7E57002
Date Collected			12/12/2007	12/12/2007	12/12/2007	12/12/2007	12/14/2007
MADEPVPH (mg/kg)							
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15000	0.09	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample
n/a	Not analyzed

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-03 (4-6)	TR-04 (2-4)	TR-04 (4-6)	TR-05 (2-4)	TR-05 (6-8)
Location Identification and Sample Interval (Feet below ground surface)			TR-03 (4-6)	TR-04 (2-4)	TR-04 (4-6)	TR-05 (2-4)	TR-05 (6-8)
Laboratory Sample Identification			A7E57001/360-14139-1	A7E44204	A7E44205	A7E54703/360-14120-1	A7E54704
Date Collected			12/14/2007	12/12/2007	12/12/2007	12/13/2007	12/13/2007
Petroleum Hydrocarbons (mg/kg)							
Diesel Range Organics	20,000	15,000	**17000**	**180**	**15**	**1900**	**1200**
Gasoline Range Organics	450	150	**20**	<5	<5	**14**	**3.8J**
MADEPEPH (mg/kg)							
2-Methylnaphthalene	1461	45	<18	n/a	n/a	<21	n/a
Acenaphthene	300	300	<18	n/a	n/a	<21	n/a
Acenaphthylene	NA	NA	<18	n/a	n/a	<21	n/a
Anthracene	13	13	*<18*	n/a	n/a	*<21*	n/a
Benzo(a)anthracene	26	35	22	n/a	n/a	<21	n/a
Benzo(a)pyrene	2.6	16	**27**	n/a	n/a	*<21*	n/a
Benzo(b)fluoranthene	19	19	<18	n/a	n/a	*<21*	n/a
Benzo(g,h,i)perylene	NA	NA	<18	n/a	n/a	<21	n/a
Benzo(k)fluoranthene	10	10	*<18*	n/a	n/a	*<21*	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**23000**	n/a	n/a	**5400**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**23000**	n/a	n/a	**5400**	n/a
C19-C36 Aliphatics	NA	NA	**4900**	n/a	n/a	**1800**	n/a
C9-C18 Aliphatics	NA	NA	**310**	n/a	n/a	**210**	n/a
Chrysene	6.4	6.4	**83**	n/a	n/a	*<21*	n/a
Dibenz(a,h)anthracene	2.6	11	*<18*	n/a	n/a	*<21*	n/a
Fluoranthene	220	220	<18	n/a	n/a	<21	n/a
Fluorene	270	270	<18	n/a	n/a	<21	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	*<18*	n/a	n/a	*<21*	n/a
Naphthalene	325	3.52	*<18*	n/a	n/a	*<21*	n/a
Phenanthrene	NA	NA	<18	n/a	n/a	<21	n/a
Pyrene	140	140	**230**	n/a	n/a	<21	n/a
Total EPH	NA	NA	**28000**	n/a	n/a	**7500**	n/a

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TR-03 (4-6)	TR-04 (2-4)	TR-04 (4-6)	TR-05 (2-4)	TR-05 (6-8)
			A7E57001/360-14139-1	A7E44204	A7E44205	A7E54703/360-14120-1	A7E54704
			12/14/2007	12/12/2007	12/12/2007	12/13/2007	12/13/2007
	Kansas Tier II Risk-Based Standards						
	Soil Pathway[(A)] Non-Residental Scenario	**Soil to Groundwater Pathway[(A)] Non-Residental Scenario**					
MADEPVPH (mg/kg)							
Benzene	17	0.08	*<5.8*	n/a	n/a	*<2.9*	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	<120	n/a	n/a	<59	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	<120	n/a	n/a	<59	n/a
C9-C10 Aromatics	NA	NA	<120	n/a	n/a	<59	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<120	n/a	n/a	<59	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	<120	n/a	n/a	<59	n/a
Ethylbenzene	650	55	<5.8	n/a	n/a	<2.9	n/a
m+p-Xylenes	700	700	<1.2	n/a	n/a	<0.59	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15000	0.09	*<12*	n/a	n/a	*<5.9*	n/a
Napthalene	325	3.52	*<12*	n/a	n/a	*<5.9*	n/a
o-Xylenes	NA	NA	<5.8	n/a	n/a	<2.9	n/a
Toluene	1000	40	<5.8	n/a	n/a	<2.9	n/a
Total VPH	NA	NA	<120	n/a	n/a	<59	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample
n/a	Not analyzed

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-06 (2-4)	TR-06 (4-6)	TR-07 (2-4)	TR-07 (4-6)	TR-08 (2-4)	TR-08 (4-6)	TR-09 (2-4)
Location Identification and Sample Interval (Feet below ground surface)			TR-06 (2-4)	TR-06 (4-6)	TR-07 (2-4)	TR-07 (4-6)	TR-08 (2-4)	TR-08 (4-6)	TR-09 (2-4)
Laboratory Sample Identification			A7E54705	A7E54706	A7E54707	A7E54708	A7E54709	A7E54710	A7E54701
Date Collected			12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007
Petroleum Hydrocarbons (mg/kg)									
Diesel Range Organics	20,000	15,000	**460**	**22**	**350**	**22**	**24**	**78**	**15**
Gasoline Range Organics	450	150	**1J**	<5	**3.8J**	<5	<5	<5	<5
MADEPEPH (mg/kg)									
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-06 (2-4)	TR-06 (4-6)	TR-07 (2-4)	TR-07 (4-6)	TR-08 (2-4)	TR-08 (4-6)	TR-09 (2-4)
Location Identification and Sample Interval (Feet below ground surface)									
Laboratory Sample Identification			A7E54705	A7E54706	A7E54707	A7E54708	A7E54709	A7E54710	A7E54701
Date Collected			12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007
MADEPVPH (mg/kg)									
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15000	0.09	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample
n/a	Not analyzed

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-09 (4-6)	TR-10 (2-3)	TR-11 (4-5)	TR-12 (3-4)	TR-13 (3-4)	TR-14 (3-4)	TR-15 (2-3)
Location Identification and Sample Interval (Feet below ground surface)									
Laboratory Sample Identification			A7E54702	A8F40204	A8F40203	A8F40202	A8F40201	A8F47201	A8F40205
Date Collected			12/13/2007	12/3/2008	12/3/2008	12/3/2008	12/4/2008	12/3/2008	12/3/2008
Petroleum Hydrocarbons (mg/kg)									
Diesel Range Organics	20,000	15,000	**31J**	**1400**	**1500**	**1000**	**930**	**230**	**1700**
Gasoline Range Organics	450	150	**0.84J**	**6.9**	**220**	**5**	**3.4J**	**1.2J**	**21**
MADEPEPH (mg/kg)									
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-09 (4-6)	TR-10 (2-3)	TR-11 (4-5)	TR-12 (3-4)	TR-13 (3-4)	TR-14 (3-4)	TR-15 (2-3)
Location Identification and Sample Interval (Feet below ground surface)									
Laboratory Sample Identification			A7E54702	A8F40204	A8F40203	A8F40202	A8F40201	A8F47201	A8F40205
Date Collected			12/13/2007	12/3/2008	12/3/2008	12/3/2008	12/4/2008	12/3/2008	12/3/2008
MADEPVPH (mg/kg)									
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15000	0.09	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample
n/a	Not analyzed

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 9 of 16)

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-16 (2-3)	TR-17 (4-5)	TR-18 (3-4)	TR-19 (4-5)	TR-20 (4-5)	TR-21 (2-3)
Location Identification and Sample Interval (Feet below ground surface)			TR-16 (2-3)	TR-17 (4-5)	TR-18 (3-4)	TR-19 (4-5)	TR-20 (4-5)	TR-21 (2-3)
Laboratory Sample Identification			A8F40206	A8F54602	A8F54601	A8F47206	A8F47205	A8F47202
Date Collected			12/3/2008	12/5/2008	12/5/2008	12/4/2008	12/4/2008	12/4/2008
Petroleum Hydrocarbons (mg/kg)								
Diesel Range Organics	20,000	15,000	**65**	**250**	**35**	**350**	**220**	**94**
Gasoline Range Organics	450	150	**1.3J**	<5	<5	**2.7J**	**3.6J**	<5
MADEPEPH (mg/kg)								
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-16 (2-3)	TR-17 (4-5)	TR-18 (3-4)	TR-19 (4-5)	TR-20 (4-5)	TR-21 (2-3)
Location Identification and Sample Interval (Feet below ground surface)			TR-16 (2-3)	TR-17 (4-5)	TR-18 (3-4)	TR-19 (4-5)	TR-20 (4-5)	TR-21 (2-3)
Laboratory Sample Identification			A8F40206	A8F54602	A8F54601	A8F47206	A8F47205	A8F47202
Date Collected			12/3/2008	12/5/2008	12/5/2008	12/4/2008	12/4/2008	12/4/2008
MADEPVPH (mg/kg)								
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15000	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample
n/a	Not analyzed

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-22 (2-3)	TR-23 (3-4)	TR-24 (3-4)	TR-25 (2-3)	TR-26 (3-4)	TR-27 (3-4)
Location Identification and Sample Interval (Feet below ground surface)			TR-22 (2-3)	TR-23 (3-4)	TR-24 (3-4)	TR-25 (2-3)	TR-26 (3-4)	TR-27 (3-4)
Laboratory Sample Identification			A8F47203	A8F59101	A8F54603	A8F59102	A8F47204	A8F59104
Date Collected			12/4/2008	12/8/2008	12/5/2008	12/8/2008	12/4/2008	12/8/2008
Petroleum Hydrocarbons (mg/kg)								
Diesel Range Organics	20,000	15,000	**32**	**120**	**330**	**54**	**140**	**870**
Gasoline Range Organics	450	150	<5	<5	<5	<5	<5	**2.4J**
MADEPEPH (mg/kg)								
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-22 (2-3)	TR-23 (3-4)	TR-24 (3-4)	TR-25 (2-3)	TR-26 (3-4)	TR-27 (3-4)
Location Identification and Sample Interval (Feet below ground surface)			TR-22 (2-3)	TR-23 (3-4)	TR-24 (3-4)	TR-25 (2-3)	TR-26 (3-4)	TR-27 (3-4)
Laboratory Sample Identification			A8F47203	A8F59101	A8F54603	A8F59102	A8F47204	A8F59104
Date Collected			12/4/2008	12/8/2008	12/5/2008	12/8/2008	12/4/2008	12/8/2008
MADEPVPH (mg/kg)								
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15000	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample
n/a	Not analyzed

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-28 (2-3)	TR-29 (4-5)	TR-30 (2-3)	TR-31 (2-3)	TR-32 (4-5)	TR-75 DUP of TR-32 (4-5)
Location Identification and Sample Interval (Feet below ground surface)			TR-28 (2-3)	TR-29 (4-5)	TR-30 (2-3)	TR-31 (2-3)	TR-32 (4-5)	TR-75 DUP of TR-32 (4-5)
Laboratory Sample Identification			A8F59103	A8F59105	A8F59106	A8F59107	A8F70601	A8F70602
Date Collected			12/8/2008	12/8/2008	12/8/2008	12/8/2008	12/10/2008	12/10/2008
Petroleum Hydrocarbons (mg/kg)								
Diesel Range Organics	20,000	15,000	**110**	**420**	**180**	**410**	**150J**	**160J**
Gasoline Range Organics	450	150	**3.6J**	<5	<5	<5	<5	<5
MADEPEPH (mg/kg)								
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TR-28 (2-3)	TR-29 (4-5)	TR-30 (2-3)	TR-31 (2-3)	TR-32 (4-5)	TR-75 DUP of TR-32 (4-5)
			A8F59103	A8F59105	A8F59106	A8F59107	A8F70601	A8F70602
			12/8/2008	12/8/2008	12/8/2008	12/8/2008	12/10/2008	12/10/2008
	Kansas Tier II Risk-Based Standards							
	Soil Pathway[(A)] Non-Residental Scenario	Soil to Groundwater Pathway[(A)] Non-Residental Scenario						
MADEPVPH (mg/kg)								
Benzene	17	0.08	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15000	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample
n/a	Not analyzed

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Analyte/Methods (Units)	Kansas Tier II Risk-Based Standards: Soil Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards: Soil to Groundwater Pathway[(A)] Non-Residental Scenario	TR-33 (2-3)	TR-34 (2-3)	TR-35 (2-3)	TR-36 (3-4)
Location Identification and Sample Interval (Feet below ground surface)			**TR-33 (2-3)**	**TR-34 (2-3)**	**TR-35 (2-3)**	**TR-36 (3-4)**
Laboratory Sample Identification			**A8F70603**	**A8F70604**	**A8F70605**	**A8F40606**
Date Collected			**12/10/2008**	**12/10/2008**	**12/10/2008**	**12/10/2008**
Petroleum Hydrocarbons (mg/kg)						
Diesel Range Organics	20,000	15,000	**76J**	**100J**	**320J**	**470J**
Gasoline Range Organics	450	150	<5	**12**	**0.88J**	<5
MADEPEPH (mg/kg)						
2-Methylnaphthalene	1461	45	n/a	n/a	n/a	n/a
Acenaphthene	300	300	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a
Anthracene	13	13	n/a	n/a	n/a	n/a
Benzo(a)anthracene	26	35	n/a	n/a	n/a	n/a
Benzo(a)pyrene	2.6	16	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	19	19	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	10	10	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a
Chrysene	6.4	6.4	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	2.6	11	n/a	n/a	n/a	n/a
Fluoranthene	220	220	n/a	n/a	n/a	n/a
Fluorene	270	270	n/a	n/a	n/a	n/a
Indeno(1,2,3-cd)pyrene	0.76	0.76	n/a	n/a	n/a	n/a
Naphthalene	325	3.52	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a
Pyrene	140	140	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a

Table 9c

AHA Sample Analytical Data Summary - TPH
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface)		TR-33 (2-3)	TR-34 (2-3)	TR-35 (2-3)	TR-36 (3-4)
	Laboratory Sample Identification		A8F70603	A8F70604	A8F70605	A8F40606
	Date Collected		12/10/2008	12/10/2008	12/10/2008	12/10/2008
	Kansas Tier II Risk-Based Standards					
	Soil Pathway[(A)] Non-Residental Scenario	Soil to Groundwater Pathway[(A)] Non-Residental Scenario				
MADEPVPH (mg/kg)						
Benzene	17	0.08	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a
Ethylbenzene	650	55	n/a	n/a	n/a	n/a
m+p-Xylenes	700	700	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	15000	0.09	n/a	n/a	n/a	n/a
Napthalene	325	3.52	n/a	n/a	n/a	n/a
o-Xylenes	NA	NA	n/a	n/a	n/a	n/a
Toluene	1000	40	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Italics	Italicized result indicates the reporting limit is greater than the standard.
Shaded	Shaded result indicates result greater than or equal to the most conservative Kansas Tier II RBSL Non-Residential Scenario.
NA	Not applicable
J	The analyte was positively identified, the quantitation is an estimation.
(A)	Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions.
DUP	Duplicate sample
n/a	Not analyzed

Table 9d

AHA Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 7)

Location Identification and Sample Interval (Feet below ground surface)		TR-01 (2-4)	TR-01 (4-6)	TR-02 (0-2)	TR-02-50 (DUP of TR-2 (0-2))	TR-03 (0-2)	TR-04 (2-4)	TR-04 (4-6)
Laboratory Sample Identification		A7E44201	A7E44202	A7E44203	A7E44206	A7E54002	A7E44204	A7E44205
Date Collected		12/12/2007	12/12/2007	12/12/2007	12/12/2007	12/12/2007	12/12/2007	12/12/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standard Soil Pathway [(A)] Non-Residental Scenario**							
ICP Metals (mg/kg)								
Antimony	820	<20.4	<21.9	<18.6	<19.4	<17.2	<19.6	<18.2
Arsenic	38	**6.3**	**5.9**	**6**	**7.1**	**11.1**	**6.6**	**6.1**
Barium	140000	**142**	**322**	**176**	**216**	**106**	**179**	**214**
Beryllium	4100	**0.81**	**1.2**	**0.96J**	**1.1**	**0.61**	**0.86**	**1.1**
Cadmium	1000	**2**	<0.29	<0.25	<0.26	**0.36**	**1.1**	<0.24
Chromium, Total	4000	**19.2**	**22.6**	**20.1**	**21.3**	**34.3**	**25.9**	**20**
Cobalt	NA	**7.5**	**7.4**	**7.8J**	**15.4**	**20.2**	**8.3**	**10.2**
Lead	1000	**87.3**	**23.4**	**39.1J**	**23.2**	**40.7**	**165**	**16.7**
Magnesium	NA	**3160**	**3720**	**2820**	**3040**	**3260**	**2570**	**2660**
Manganese	95000	**393**	**374**	**329**	**669**	**267**	**525**	**344**
Mercury	20	**0.084**	<0.023	<0.021	<0.02	**0.434**	**0.063**	<0.019
Nickel	41000	**21.3**	**19.4**	**16.2**	**20.8**	**24.9**	**20**	**18**
Potassium	NA	**5310**	**2430**	**2030**	**2090**	**1360**	**2550**	**1830**
Selenium	10000	<5.4	<5.8	<5	<5.2	<4.6	<5.2	<4.9
Silver	10000	<0.68	<0.73	<0.62	<0.65	<0.57	<0.65	<0.61
Vanadium	14000	**53.6**	**43.5**	**38.1**	**42.4**	**77.8**	**44.6**	**38.9**
Zinc	610000	**95**	**57.8**	**60.3J**	**51.2**	**67.2**	**72.1**	**43.4**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
DUP	Duplicate sample

Table 9d

AHA Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 7)

Location Identification and Sample Interval (Feet below ground surface)		TR-05 (6-8)	TR-06 (2-4)	TR-06 (4-6)	TR-07 (2-4)	TR-07 (4-6)	TR-08 (2-4)
Laboratory Sample Identification		A7E54704	A7E54705	A7E54706	A7E54707	A7E54708	A7E54709
Date Collected		12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007	12/13/2007
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standard Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<19.5	<18.8	<19	<17.4	<19.9	<18.5
Arsenic	38	**5.9**	**7.4**	**6.4**	**5.6**	**5.5**	**5.4**
Barium	140000	**163**	**181**	**171**	**157**	**297**	**129**
Beryllium	4100	**0.88**	**0.79**	**1.1**	**0.75**	**1.2**	**0.92**
Cadmium	1000	<0.26	**1.4**	<0.25	**1.7**	**0.29**	<0.25
Chromium, Total	4000	**33.9**	**30.7**	**22**	**22**	**21.1**	**18.7**
Cobalt	NA	**6.5**	**7.2**	**8.6**	**6.4**	**8.5**	**8.5**
Lead	1000	**86.2**	**141**	**23.7**	**246**	**40.7**	**31.2**
Magnesium	NA	**2620**	**2890**	**2280**	**3490**	**2780**	**2470**
Manganese	95000	**129**	**414**	**392**	**364**	**313**	**374**
Mercury	20	**0.059**	**0.066**	<0.023	**0.084**	<0.02	**0.034**
Nickel	41000	**16.7**	**32.7**	**20.9**	**15.9**	**17.8**	**16.5**
Potassium	NA	**1830**	**3610**	**2210**	**2590**	**2070**	**2180**
Selenium	10000	<5.2	<5	<5.1	<4.6	<5.3	<4.9
Silver	10000	<0.65	**0.68**	<0.63	<0.58	<0.66	<0.62
Vanadium	14000	**39.8**	**75.6**	**41.4**	**37.6**	**38.7**	**36.6**
Zinc	610000	**70.1**	**91.1**	**44.3**	**69.3**	**46.7**	**47.5**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
DUP	Duplicate sample

Table 9d

AHA Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 7)

Location Identification and Sample Interval (Feet below ground surface)		TR-08 (4-6)	TR-09 (2-4)	TR-09 (4-6)	TR-10 (2-3)	TR-11 (4-5)	TR-12 (3-4)
Laboratory Sample Identification		A7E54710	A7E54701	A7E54702	A8F40204	A8F40203	A8F40202
Date Collected		12/13/2007	12/13/2007	12/13/2007	12/3/2008	12/3/2008	12/3/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standard Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<18	<18.8	<18.3	**27.1**	<20.9	<18.6
Arsenic	38	**5.9**	**5.3**	**5.8**	**16.8**	**7.7**	**6.4**
Barium	140000	**163**	**154**	**301**	**185**	**102**	**116**
Beryllium	4100	**0.89**	**0.85**	**1.1**	**0.64**	**0.58**	**0.66**
Cadmium	1000	<0.24	<0.25	<0.24	**0.51**	**1.1**	**0.74**
Chromium, Total	4000	**26.9**	**15**	**18.9**	**20.1**	**16.6**	**18.8**
Cobalt	NA	**7.3**	**7.9**	**8.4**	**7.7**	**4.9**	**5.9**
Lead	1000	**48.7**	**24.5**	**18**	**6370**	**135**	**105**
Magnesium	NA	**3320**	**1900**	**3120**	**2370**	**2660**	**3120**
Manganese	95000	**333**	**230**	**333**	**269**	**283**	**309**
Mercury	20	**0.096**	**0.03**	<0.02	**0.066**	**0.051**	**0.119**
Nickel	41000	**16.6**	**14.2**	**17.5**	**42.3**	**24.2**	**18.8**
Potassium	NA	**1940**	**2630**	**2040**	**1620**	**3160**	**2260**
Selenium	10000	<4.8	<5	<4.9	<5	<5.6	<5
Silver	10000	<0.6	<0.63	<0.61	<0.62	<0.7	<0.62
Vanadium	14000	**33.6**	**33.2**	**36.8**	**91.5**	**67.8**	**43.2**
Zinc	610000	**65.7**	**41.2**	**43**	**63.9**	**72.5**	**74.7**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
DUP	Duplicate sample

Table 9d

AHA Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 4 of 7)

Location Identification and Sample Interval (Feet below ground surface)		TR-13 (3-4)	TR-14 (3-4)	TR-15 (2-3)	TR-16 (2-3)	TR-17 (4-5)	TR-18 (3-4)
Laboratory Sample Identification		A8F40201	A8F47201	A8F40205	A8F40206	A8F54602	A8F54601
Date Collected		12/3/2008	12/3/2008	12/3/2008	12/3/2008	12/5/2008	12/5/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standard Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<19.2	<17.9	<18.9	<22.2	<17.7	<21.3
Arsenic	38	**6.4**	**16.9**	**7.6**	**10.9**	**8.6**	**3.5**
Barium	140000	**116**	**120**	**119**	**3250**	**154**	**123**
Beryllium	4100	**0.54**	**0.73**	**0.68**	**2.1**	**0.8**	**0.81**
Cadmium	1000	**0.95**	**0.99**	**0.55**	**4**	**0.83**	<0.28
Chromium, Total	4000	**19.6**	**30.7**	**22.9**	**41.8**	**61.6**	**14.1**
Cobalt	NA	**4.8**	**5.8**	**5.5**	**12.9**	**7.8**	**6.3**
Lead	1000	**68.1**	**53.5**	**69.4**	**42.2**	**121**	**20**
Magnesium	NA	**6600**	**3820**	**3920**	**15000**	**3990**	**1760**
Manganese	95000	**344**	**317**	**346**	**138**	**347**	**226**
Mercury	20	**0.066**	**0.06**	**0.103**	**0.032**	**0.169**	**0.029**
Nickel	41000	**16.6**	**32.4**	**21**	**31.2**	**23.9**	**11.5**
Potassium	NA	**2000**	**2780**	**2960**	**4830**	**2360**	**1990**
Selenium	10000	<5.1	<4.8	<5	**7**	<4.7	<5.7
Silver	10000	<0.64	<0.6	<0.63	<0.74	<0.59	<0.71
Vanadium	14000	**34.3**	**37.2**	**43.9**	**126**	**51.2**	**27.9**
Zinc	610000	**136**	**80.2**	**64.8**	**95.6**	**87.8**	**33.8**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
DUP	Duplicate sample

Table 9d

AHA Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
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Location Identification and Sample Interval (Feet below ground surface)		TR-19 (4-5)	TR-20 (4-5)	TR-21 (2-3)	TR-22 (2-3)	TR-23 (3-4)	TR-24 (3-4)
Laboratory Sample Identification		A8F47206	A8F47205	A8F47202	A8F47203	A8F59101	A8F54603
Date Collected		12/4/2008	12/4/2008	12/4/2008	12/4/2008	12/8/2008	12/5/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standard Soil Pathway (A) Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<20.3	<20.5	<17.8	<16.8	<17	<16.1
Arsenic	38	**6.6**	**6.6**	**7.3**	**6.4**	**8**	**8.1**
Barium	140000	**175**	**149**	**170**	**196**	**122**	**147**
Beryllium	4100	**0.8**	**0.87**	**0.72**	**0.83**	**0.68**	**0.69**
Cadmium	1000	**2.6**	**0.59**	**2**	**0.56**	**0.68**	**1**
Chromium, Total	4000	**25.9**	**20**	**28**	**21.6**	**19.4**	**60.4**
Cobalt	NA	**7.5**	**7.3**	**5.8**	**13.8**	**6**	**6.7**
Lead	1000	**189**	**106**	**173**	**130**	**54.8**	**332**
Magnesium	NA	**2850**	**2680**	**4310**	**3150**	**4160**	**3250**
Manganese	95000	**357**	**318**	**321**	**985**	**394**	**354**
Mercury	20	**0.08**	**0.061**	**0.114**	**0.077**	**0.052**	**0.21**
Nickel	41000	**21.1**	**16.9**	**21.5**	**25.7**	**21.9**	**19.8**
Potassium	NA	**3110**	**2230**	**3360**	**2230**	**2320**	**2160**
Selenium	10000	<5.4	<5.5	<4.8	<4.5	<4.5	<4.3
Silver	10000	<0.68	<0.68	<0.59	<0.56	<0.57	<0.54
Vanadium	14000	**57.1**	**39.8**	**53.9**	**44.8**	**51.1**	**37.3**
Zinc	610000	**173**	**71**	**123**	**64.7**	**56.6**	**107**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
DUP	Duplicate sample

Table 9d

AHA Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 6 of 7)

Location Identification and Sample Interval (Feet below ground surface)		TR-25 (2-3)	TR-26 (3-4)	TR-27 (3-4)	TR-28 (2-3)	TR-29 (4-5)	TR-30 (2-3)
Laboratory Sample Identification		A8F59102	A8F47204	A8F59104	A8F59103	A8F59105	A8F59106
Date Collected		12/8/2008	12/4/2008	12/8/2008	12/8/2008	12/8/2008	12/8/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standard Soil Pathway [(A)] Non-Residental Scenario**						
ICP Metals (mg/kg)							
Antimony	820	<22.1	<19.2	<17.9	*<82.6*	<16.2	<19.2
Arsenic	38	**6.7**	**7.9**	**9**	**8.2**	**4.9**	**8.1**
Barium	140000	**174**	**120**	**154**	**119**	**118**	**159**
Beryllium	4100	**0.89**	**0.67**	**0.67**	**0.56**	**0.63**	**0.71**
Cadmium	1000	**0.3**	**0.78**	**0.77**	**0.7**	**0.67**	**1**
Chromium, Total	4000	**20.2**	**36**	**67.1**	**32.9**	**24.3**	**37.1**
Cobalt	NA	**8.7**	**5.7**	**7**	**4.9**	**5.9**	**9**
Lead	1000	**41.8**	**121**	**176**	**97.7**	**84.1**	**387**
Magnesium	NA	**2500**	**3980**	**3480**	**5750**	**3720**	**3150**
Manganese	95000	**323**	**318**	**266**	**283**	**264**	**421**
Mercury	20	**0.111**	**0.152**	**0.496**	**0.357**	**1**	**0.232**
Nickel	41000	**17.8**	**18.4**	**38.2**	**25**	**17.9**	**43.5**
Potassium	NA	**3060**	**2050**	**2220**	**2000**	**2070**	**3170**
Selenium	10000	<5.9	<5.1	<4.8	<22	<4.3	<5.1
Silver	10000	<0.74	<0.64	<0.6	<0.55	<0.54	<0.64
Vanadium	14000	**40.8**	**33**	**92.1**	**40.8**	**38.4**	**121**
Zinc	610000	**53.4**	**94.1**	**115**	**89**	**62.3**	**90.5**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
DUP	Duplicate sample

Table 9d

AHA Sample Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 7 of 7)

Location Identification and Sample Interval (Feet below ground surface)		TR-31 (2-3)	TR-32 (4-5)	TR-75 DUP of TR-32 (4-5)	TR-33 (2-3)	TR-34 (2-3)	TR-35 (2-3)	TR-36 (3-4)
Laboratory Sample Identification		A8F59107	A8F70601	A8F70602	A8F70603	A8F70604	A8F70605	A8F40606
Date Collected		12/8/2008	12/10/2008	12/10/2008	12/10/2008	12/10/2008	12/10/2008	12/10/2008
Analyte/Methods (Units)	**Kansas Tier II Risk-Based Standard Soil Pathway [(A)] Non-Residental Scenario**							
ICP Metals (mg/kg)								
Antimony	820	<18.6	<18.1	<20.1	<19.4	<19.5	<17.4	<16
Arsenic	38	**7.3**	**5.5J**	**5.7**	**5.8**	**5.9**	**4.7**	**5.4**
Barium	140000	**165**	**153**	**147**	**188**	**174**	**118**	**159**
Beryllium	4100	**0.8**	**0.79**	**0.82**	**0.96**	**0.93**	**0.67**	**0.68**
Cadmium	1000	**0.47**	**1J**	**1**	**0.55**	**0.51**	<0.23	**0.74**
Chromium, Total	4000	**32.9**	**23.2**	**39.6**	**32.5**	**27.9**	**22.2**	**25.9**
Cobalt	NA	**8.1**	**7.2**	**7.1**	**7.3**	**7.7**	**5.6**	**6.4**
Lead	1000	**123**	**93.8**	**106**	**50.5**	**58.4**	**41.4**	**79.3**
Magnesium	NA	**2640**	**3000**	**2920**	**2560**	**2640**	**2110**	**4200**
Manganese	95000	**328**	**366J**	**367**	**355**	**372**	**230**	**319**
Mercury	20	**0.12**	**0.084**	**0.069**	**0.07**	**0.077**	**0.043**	**1.7**
Nickel	41000	**37.2**	**19.9**	**20.5**	**18.9**	**18.1**	**13.7**	**14.4**
Potassium	NA	**2160**	**2620**	**2680**	**2330**	**2140**	**1440**	**1550**
Selenium	10000	<5	<4.8	<5.4	<5.2	<5.2	<4.7	<4.3
Silver	10000	<0.62	<0.6	<0.67	<0.65	<0.65	<0.58	<0.53
Vanadium	14000	**77.6**	**38.1**	**41.4**	**37.3**	**37.9**	**27.3**	**26.6**
Zinc	610000	**75.1**	**62.4**	**64.9**	**56.3**	**56.2**	**44.2**	**75.3**

(mg/kg)	milligrams per kilogram
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Soil Pathway Non-Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
NA	Not applicable
DUP	Duplicate sample

Table 9e

AHA Sample Analytical Data Summary - VOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 1)

Location Identification and Sample Interval (Feet below ground surface)		**TR-03 (4-6)**	**TR-05 (2-4)**	**TR-11 (4-5)**
Laboratory Sample Identification		**A7E57001**	**A7E54703**	**RSA0754-02**
Date Collected		**12/14/2007**	**12/13/2007**	**12/3/2008**
Analyte/Methods (Units)	**Regulatory Level [(A)]**			
Volatile Organic Compounds (µg/l)				
1,1-Dichloroethene	700	<10	<10	<10UJ
1,2-Dichloroethane	500	<10	<10	<10UJ
Benzene	500	**5.2J**	<10	**5.5J**
Carbon tetrachloride	500	<10	<10	<10UJ
Chlorobenzene	100,000	<10	<10	<10UJ
Chloroform	6,000	<10	<10	**13JB**
Methyl ethyl ketone (2-butanone)	200,000	<50	<50	<50UJ
Tetrachloroethene	700	<10	<10	<10UJ
Trichloroethene	500	<10	<10	<10UJ
Vinyl chloride	200	<10	<10	<10UJ

(µg/l)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
(A)	Maximum concentration of contaminants for the toxicity characteristics (40 CFR Part 261.24 Table 1).
J	The analyte was positively identified, the quantitation is an estimation.
B	The analyte was found in an associated blank, as well as in the sample.
UJ	Potential false negative due to low QC recoveries.

Table 9f

AHA Sample TCLP Analytical Data Summary - SVOCs
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 1)

Location Identification and Sample Interval (Feet below ground surface)		TR-03 (4-6)	TR-05 (2-4)
Laboratory Sample Identification		A7E57001	A7E54703
Date Collected		12/14/2007	12/13/2007
Analyte/Methods (Units)	**Regulatory Level[(A)]**		
Semivolatile Organic Compounds (mg/l)			
1,4-Dichlorobenzene	7.5	<0.04	<0.04
2,4,5-Trichlorophenol	400	<0.02	<0.02
2,4,6-Trichlorophenol	2	<0.02	<0.02
2,4-Dinitrotoluene	0.13	<0.02	<0.02
2-Methylphenol (o-cresol)	200	**0.15**	<0.02
3-Methylphenol (m-cresol)	200	**0.027J**	<0.04
4-Methylphenol (p-cresol)	200	**0.027**	<0.02
Hexachlorobenzene	0.13	<0.02	<0.02
Hexachlorobutadiene	0.5	<0.02	<0.02
Hexachloroethane	3	<0.02	<0.02
Nitrobenzene	2	<0.02	<0.02
Pentachlorophenol	100	<0.04	<0.04
Pyridine	5	<0.1	<0.1

(mg/l) milligrams per kilograms
Bold Bolded result indicates positively identified compound.
(A) Maximum concentration of contaminants for the toxicity characteristics (40 CFR Part 261.24 Table 1).
J The analyte was positively identified, the quantitation is an estimation.

Table 9g

AHA Sample TCLP Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 1 of 3)

Location Identification and Sample Interval (Feet below ground surface)		**TR-03 (4-6)**	**TR-05 (2-4)**	**TR-10 (2-3)**	**TR-11 (4-5)**	**TR-12 (3-4)**	**TR-17 (4-5)**
Laboratory Sample Identification		**A7E57001**	**A7E54703**	**RSA0754-01**	**RSA0754-02**	**RSA0754-03**	**RSA0754-04**
Date Collected		**12/14/2007**	**12/13/2007**	**12/3/2008**	**12/3/2008**	**12/3/2008**	**12/5/2008**
Analyte/Methods (Units)	**Regulatory Level [(A)]**						
TCLP Metals (ug/L)							
Arsenic	5000	**27.2**	**16**	<10	<50	**26.6J**	<10
Barium	100000	**661B**	**2040B**	**934B**	**368B**	**669B**	**667B**
Cadmium	1000	<1	<1	**6**	<50	**18.1**	**8.8**
Chromium, Total	5000	<4	**31.7**	**1.3JB**	<20	<20	**1.7JB**
Lead	5000	**7.3B**	**85.7B**	**2700**	<30	**290**	**15.9**
Mercury	200	<0.2	<0.2	<0.2UJ	<0.2UJ	<0.2UJ	<0.2UJ
Selenium	1000	<15	<15	<15	<75	<75	<15
Silver	5000	<3	<3	<3	<15	<15	<3

(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
B	The analyte was found in an associated blank, as well as in the sample.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
DUP	Duplicate sample

Table 9g

AHA Sample TCLP Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 2 of 3)

Location Identification and Sample Interval (Feet below ground surface)		TR-19 (4-5)	TR-20 (4-5)	TR-21 (2-3)	TR-22 (2-3)	TR-24 (3-4)
Laboratory Sample Identification		RSA0754-05	RSA0754-06	RSA0754-07	RSA0754-08	RSA0754-09
Date Collected		12/4/2008	12/4/2008	12/4/2008	12/4/2008	12/5/2008
Analyte/Methods (Units)	**Regulatory Level [(A)]**					
TCLP Metals (ug/L)						
Arsenic	5000	<10	**4.2J**	**27.2J**	<10	<10
Barium	100000	**682B**	**1380B**	**345B**	**636B**	**569B**
Cadmium	1000	**7.7**	**3.7**	**48.2**	**2.3**	**4.6**
Chromium, Total	5000	**1.4JB**	<4	**5.1J**	**1.1JB**	**1.7JB**
Lead	5000	**18.4**	**10**	**242**	**5.2J**	**15.3**
Mercury	200	<0.2UJ	<0.2UJ	<0.2UJ	<0.2UJ	<0.2UJ
Selenium	1000	<15	<15	<75	**8.4J**	<15
Silver	5000	<3	<3	<15	<3	<3

(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
B	The analyte was found in an associated blank, as well as in the sample.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
DUP	Duplicate sample

Table 9g

AHA Sample TCLP Analytical Data Summary - Metals
El Paso Merchant Energy - Petroleum Company
El Dorado Refinery, El Dorado, Kansas
(Page 3 of 3)

Analyte/Methods (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected	TR-26 (3-4) / RSA0754-10 / 12/4/2008	TR-27 (3-4) / RSA0754-11 / 12/8/2008	TR-30 (2-3) / RSA0754-12 / 12/8/2008	TR-31 (2-3) / RSA0754-13 / 12/8/2008	TR-75 DUP of TR-32 (4-5) / RSA0754-14 / 12/10/2008
	Regulatory Level [(A)]					
TCLP Metals (ug/L)						
Arsenic	5000	**23.4J**	<10	**<10**	<10	**6.3J**
Barium	100000	**1260B**	**491B**	**190B**	**985B**	**488B**
Cadmium	1000	**12.6**	**4.9**	**4.7**	**2.6**	**4.3**
Chromium, Total	5000	<20	<4	**1.6JB**	<4	<4
Lead	5000	**84.8**	**15.4**	**15.6**	**6.1**	**4.8J**
Mercury	200	<0.2UJ	<0.2UJ	<0.2UJ	<0.2UJ	<0.2UJ
Selenium	1000	<75	<15	**6.9J**	<15	<15
Silver	5000	<15	<3	<3	<3	<3

(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
(A)	Maximum concentration of contaminants for the toxicity characteristics(40 CFR Part 261.24 Table 1).
B	The analyte was found in an associated blank, as well as in the sample.
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
DUP	Duplicate sample

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 1 of 27)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	ES-03	FINA/MW-38	FINA/MW-38-53 (DUP of FINA/MW-38)	N2-4	N3-2
Location Identification and Sample Interval (Feet below ground surface)			ES-03	FINA/MW-38	FINA/MW-38-53 (DUP of FINA/MW-38)	N2-4	N3-2
Laboratory Sample Identification			RSB0643-05	A8183908	A8183909	RSA0674-01	RSB0691-04
Date Collected			2/19/09	2/20/08	2/20/08	1/21/09	2/20/09
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**100D**	**154**	**207**	**280**	**200D**
Fluoride	NA	NA	n/a	**0.5**	**0.6**	**0.16**	n/a
Sulfate (as SO4)	NA	NA	**49DB**	**364**	**235**	**4.6JB**	**95.3DB**
Sulfide	NA	NA	n/a	<1	<1	<1	n/a
Nitrate	NA	NA	**0.208**	n/a	n/a	<0.05	**0.019J**
Nitrite	NA	NA	<0.05	n/a	n/a	<0.05	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	**0.74**	**0.32**	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	**216**	**371**	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	<5	<5	n/a	n/a
Total Alkalinity	NA	NA	**506**	n/a	n/a	**527**	**604**
Total Dissolved Solids	NA	NA	**6790D**	**1150**	**1040**	**958**	**966B**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 2 of 27)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	N3-3	N3-4	N4-1	N4-2	N4-2	N5-1
Location Identification and Sample Interval (Feet below ground surface)			N3-3	N3-4	N4-1	N4-2	N4-2	N5-1
Laboratory Sample Identification			RSB0691-02	RSB0789-03	RSA0674-03	RSA0706-01	A8183911	A8184004
Date Collected			2/20/09	2/24/09	1/21/09	1/22/09	2/20/08	2/22/08
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**80**	**220D**	**69**	**310**	**325**	**268**
Fluoride	NA	NA	n/a	n/a	**1.8**	**2**	**1.8**	**0.35**
Sulfate (as SO4)	NA	NA	**6.4B**	**769DB**	**77**	**566B**	**488**	**101**
Sulfide	NA	NA	n/a	n/a	<1	<1	<1	<1
Nitrate	NA	NA	**0.011J**	<0.05	**0.324**	<0.05	n/a	n/a
Nitrite	NA	NA	<0.05	<0.05	<0.05	<0.05	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	<0.05	**0.19**
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	**640**	**431**
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	<5	<5
Total Alkalinity	NA	NA	**589**	**592**	**425**	**695**	n/a	n/a
Total Dissolved Solids	NA	NA	**722**	**2210DB**	**618**	**1720**	**1860**	**963**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 3 of 27)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	N5-2	N5-3	N5-3-52 (DUP OF N5-3)	OW-13	OW-21	OW-23T
Location Identification and Sample Interval (Feet below ground surface)								
Laboratory Sample Identification			A8183905	A8183906	A8183907	RSA0674-02	RSB0789-05	A8183910
Date Collected			2/20/08	2/20/08	2/20/08	1/21/09	2/24/09	2/20/08
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**495**	**189**	**169**	**64**	**94D**	**418**
Fluoride	NA	NA	**0.25**	**0.4**	**0.35**	**0.55**	n/a	**0.19**
Sulfate (as SO4)	NA	NA	**44.2**	**18.5**	<5	<5	**50.8DB**	<5
Sulfide	NA	NA	<1	<1	<1	<1	n/a	<1
Nitrate	NA	NA	n/a	n/a	n/a	<0.05	<0.05	n/a
Nitrite	NA	NA	n/a	n/a	n/a	<0.05	<0.05	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	**0.08**	<0.05	<0.05	n/a	n/a	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**506**	**496**	**548**	n/a	n/a	**951**
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	<5	<5	n/a	n/a	<5
Total Alkalinity	NA	NA	n/a	n/a	n/a	**379**	**508**	n/a
Total Dissolved Solids	NA	NA	**1440**	**830**	**1000**	**453**	**678**	**1720**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 4 of 27)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	OW-26	OW-27T	OW-28T	OW-29	OW-30	OW-31
Location Identification and Sample Interval (Feet below ground surface)			**OW-26**	**OW-27T**	**OW-28T**	**OW-29**	**OW-30**	**OW-31**
Laboratory Sample Identification			**A8183915**	**RSB0732-04**	**RSB0732-05**	**RSB0643-01**	**RSB0643-02**	**RSB0643-03**
Date Collected			**2/20/08**	**2/23/09**	**2/23/09**	**2/19/09**	**2/19/09**	**2/19/09**
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**19.4**	**290D**	**330D**	**130D**	**270D**	**140D**
Fluoride	NA	NA	**0.55**	n/a	n/a	n/a	n/a	n/a
Sulfate (as SO4)	NA	NA	**39**	**111DB**	**4.2JB**	**4JB**	**121DB**	**1.6JB**
Sulfide	NA	NA	<1	n/a	n/a	n/a	n/a	n/a
Nitrate	NA	NA	n/a	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite	NA	NA	n/a	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	<0.05	n/a	n/a	n/a	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**561**	n/a	n/a	n/a	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	n/a	n/a	n/a	n/a	n/a
Total Alkalinity	NA	NA	n/a	**590**	**530**	**540**	**633**	**465**
Total Dissolved Solids	NA	NA	**695**	**1350B**	**1020B**	**722**	**1070D**	**655**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 5 of 27)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	OW-32	OW-33	OW-35	OW-36	SB-08	SB-09
Location Identification and Sample Interval (Feet below ground surface)			**OW-32**	**OW-33**	**OW-35**	**OW-36**	**SB-08**	**SB-09**
Laboratory Sample Identification			**RSB0643-04**	**RSB0643-06**	**RSB0789-06**	**RSB0691-03**	**A8184013**	**A8175810**
Date Collected			**2/19/09**	**2/19/09**	**2/24/09**	**2/20/09**	**2/22/08**	**2/19/08**
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**200D**	**160D**	**410D**	**59**	**40**	**214**
Fluoride	NA	NA	n/a	n/a	n/a	n/a	**2.8**	**0.23**
Sulfate (as SO4)	NA	NA	**1.6JB**	**1.3JB**	**12.3B**	**1.4JB**	**368**	**9.4**
Sulfide	NA	NA	n/a	n/a	n/a	n/a	<1	<1
Nitrate	NA	NA	<0.05	<0.05	<0.05	<0.05	n/a	n/a
Nitrite	NA	NA	<0.05	<0.05	<0.05	<0.05	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	<0.05	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	**507**	**562**
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	<5	<5
Total Alkalinity	NA	NA	**606**	**561**	**417**	**494**	n/a	n/a
Total Dissolved Solids	NA	NA	**908D**	**799**	**1020**	**545B**	**1120**	**1030**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 6 of 27)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	SB-11	SB-17	SB-30	SB-36	SB-37	SB-38
Location Identification and Sample Interval (Feet below ground surface)			**SB-11**	**SB-17**	**SB-30**	**SB-36**	**SB-37**	**SB-38**
Laboratory Sample Identification			**A8175814**	**A8183916**	**A8175905**	**A8175816**	**A8175815**	**A8175809**
Date Collected			**2/19/08**	**2/20/08**	**2/19/08**	**2/19/08**	**2/19/08**	**2/19/08**
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**30.5**	**441**	**138**	**152**	**294**	**164**
Fluoride	NA	NA	**3**	**1.1**	**6.4**	**0.26J**	**0.25**	**0.29**
Sulfate (as SO4)	NA	NA	**299**	<5	<5	**58.6**	**105**	**88.2**
Sulfide	NA	NA	<1	<1	**1.2**	<1	<1	<1
Nitrate	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrite	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**261**	**605**	**409**	**467**	**567**	**444**
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	<5	<5	<5	<5	<5
Total Alkalinity	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total Dissolved Solids	NA	NA	**852**	**1360**	**683**	**773**	**1220**	**831**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	SB-38	SB-538 (DUP of SB-38)	TW-03	TW-05	TW-07	TW-10
Location Identification and Sample Interval (Feet below ground surface)			SB-38	SB-538 (DUP of SB-38)	TW-03	TW-05	TW-07	TW-10
Laboratory Sample Identification			RSB0789-01	RSB0789-02	A8169701	A8175805	A8169705	A8175806
Date Collected			2/24/09	2/24/09	2/18/08	2/19/08	2/18/08	2/19/08
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**130D**	**130D**	**5**	**465**	**12.8**	**66.2**
Fluoride	NA	NA	n/a	n/a	**0.65**	**0.38**	**0.55**	**0.58**
Sulfate (as SO4)	NA	NA	**157DB**	**154DB**	**29.5**	**156**	**25**	<5
Sulfide	NA	NA	n/a	n/a	<1	<1	<1	<1
Nitrate	NA	NA	<0.05	<0.05	n/a	n/a	n/a	n/a
Nitrite	NA	NA	<0.05	<0.05	n/a	n/a	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	0.68	<0.05	<0.05	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	**603**	**602**	**438**	**783**
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	<5	<5	<5	<5
Total Alkalinity	NA	NA	**487**	**494**	n/a	n/a	n/a	n/a
Total Dissolved Solids	NA	NA	**893B**	**873B**	**711**	**1650**	**436**	**971**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-11	TW-12	TW-13	TW-14	TW-14-50 (DUP of TW-14)	TW-15
Location Identification and Sample Interval (Feet below ground surface)			TW-11	TW-12	TW-13	TW-14	TW-14-50 (DUP of TW-14)	TW-15
Laboratory Sample Identification			A8175803	A8169703	A8175802	A8175807	A8175808	A8175818
Date Collected			2/19/08	2/18/08	2/19/08	2/19/08	2/19/08	2/19/08
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**50.8**	**129**	**402**	<0.5	**19.3**	**1300**
Fluoride	NA	NA	**0.56**	**0.5**	**0.32**	**0.69**	**0.67**	<0.25
Sulfate (as SO4)	NA	NA	**52**	**6.7**	**259**	<5	<5	<5
Sulfide	NA	NA	<1	<1	<1	<1	<1	<1
Nitrate	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrite	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**461**	**514**	**656**	**472**	**469**	**251**
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	<5	<5	<5	<5	<5
Total Alkalinity	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total Dissolved Solids	NA	NA	**671**	**735**	**1540**	**544**	**514**	**2380**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 9 of 27)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-16	TW-17	TW-18	TW-19	TW-20	TW-21	TW-22
Location Identification and Sample Interval (Feet below ground surface)			TW-16	TW-17	TW-18	TW-19	TW-20	TW-21	TW-22
Laboratory Sample Identification			A8175804	A8169707	A8175817	A8169702	A8169710	A8169708	A8175903
Date Collected			2/19/08	2/18/08	2/19/08	2/18/08	2/18/08	2/18/08	2/19/08
Wet Chemistry (mg/L)									
Chloride (as Cl)	NA	NA	**318**	**243**	**102**	**316**	**66.2**	**362**	**950**
Fluoride	NA	NA	**0.3**	**0.6**	**0.23**	**0.4**	**0.4**	**0.55**	**0.3**
Sulfate (as SO4)	NA	NA	<5	<5	**10.3**	<5	<5	<5	**49.1**
Sulfide	NA	NA	<1	<1	<1	<1	<1	<1	<1
Nitrate	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Nitrite	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**576**	**441**	**420**	**442**	**381**	**510**	**454**
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	<5	<5	<5	<5	<5	<5
Total Alkalinity	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Dissolved Solids	NA	NA	**1100**	**828**	**569**	**971**	**544**	**1110**	**1960**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-23D	TW-24S	TW-24D	TW-524 (DUP of TW-24D)	TW-25S
Location Identification and Sample Interval (Feet below ground surface)			TW-23D	TW-24S	TW-24D	TW-524 (DUP of TW-24D)	TW-25S
Laboratory Sample Identification			RSB0691-05	A8175902	RSB0604-01	RSB0604-02	A8169709
Date Collected			2/20/09	2/19/08	2/18/09	2/18/09	2/18/08
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**300D**	**499**	**220D**	**220D**	**238**
Fluoride	NA	NA	n/a	**0.35**	n/a	n/a	**0.35**
Sulfate (as SO4)	NA	NA	**211DB**	<5	**1JB**	**1.5JB**	**43.4**
Sulfide	NA	NA	n/a	<1	n/a	n/a	<1
Nitrate	NA	NA	**0.608**	n/a	<0.05	<0.05	n/a
Nitrite	NA	NA	<0.05	n/a	<0.05	<0.05	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	<0.05	n/a	n/a	**0.12**
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	**545**	n/a	n/a	**340**
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	<5	n/a	n/a	<5
Total Alkalinity	NA	NA	**319**	n/a	**510B**	**506B**	n/a
Total Dissolved Solids	NA	NA	**1150B**	**1300**	**790**	**771**	**821**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-25D**	**TW-27S**	**TW-27D**	**TW-29**	**TW-31S**	**TW-31D**
	Laboratory Sample Identification		**RSB0535-08**	**A8175904**	**RSB0385-04**	**A8169711**	**A8175901**	**RSB0535-10**
	Date Collected		**2/17/09**	**2/19/08**	**2/11/09**	**2/18/08**	**2/19/08**	**2/17/09**
Analyte (Units)								
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]							
	Non-Residental Scenario	**Residential Scenario**						
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**2800D**	**393**	**38D**	**385**	**290**	**470D**
Fluoride	NA	NA	n/a	**0.4**	n/a	**0.5**	**1.4**	n/a
Sulfate (as SO4)	NA	NA	**66.5DB**	**142**	**162DB**	**39**	**210**	**30.5B**
Sulfide	NA	NA	n/a	<1	n/a	<1	<1	n/a
Nitrate	NA	NA	<0.05	n/a	<0.05	n/a	n/a	<0.05
Nitrite	NA	NA	<0.05	n/a	<0.05	n/a	n/a	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	<0.05	n/a	<0.05	<0.05	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	**602**	n/a	**655**	**679**	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	<5	n/a	<5	<5	n/a
Total Alkalinity	NA	NA	**267J**	n/a	**384**	n/a	n/a	**319J**
Total Dissolved Solids	NA	NA	**5790D**	**1330**	**631**	**1320**	**1390**	**1090**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-32S	TW-32D	TW-34	TW-35	TW-36	TW-38
Location Identification and Sample Interval (Feet below ground surface)			**TW-32S**	**TW-32D**	**TW-34**	**TW-35**	**TW-36**	**TW-38**
Laboratory Sample Identification			**A8183904**	**RSB0691-07**	**A8184008**	**A8169706**	**RSA0674-04**	**A8169704**
Date Collected			**2/20/08**	**2/20/09**	**2/22/08**	**2/18/08**	**1/21/09**	**2/18/08**
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**192**	n/a	**138**	**250**	**140**	**924**
Fluoride	NA	NA	**0.4**	n/a	**0.5**	**2.2**	**0.69**	**1**
Sulfate (as SO4)	NA	NA	**126**	n/a	**162**	**356**	<5	**165**
Sulfide	NA	NA	<1	n/a	<1	<1	<1	<1
Nitrate	NA	NA	n/a	n/a	n/a	n/a	<0.05	n/a
Nitrite	NA	NA	n/a	n/a	n/a	n/a	<0.05	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	<0.05	n/a	<0.05	**0.91**	n/a	**0.16**
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**483**	n/a	**404**	**555**	n/a	**299**
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	n/a	<5	<5	n/a	<5
Total Alkalinity	NA	NA	n/a	**458**	n/a	n/a	**664**	n/a
Total Dissolved Solids	NA	NA	**1000**	n/a	**861**	**1410**	**838**	**2270**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-39	TW-40	TW-41	TW-42	TW-43	TW-45
Location Identification and Sample Interval (Feet below ground surface)			**TW-39**	**TW-40**	**TW-41**	**TW-42**	**TW-43**	**TW-45**
Laboratory Sample Identification			**A8183901**	**A8184009**	**A8184007**	**A8184003**	**A8184002**	**A8183914**
Date Collected			**2/20/08**	**2/22/08**	**2/22/08**	**2/22/08**	**2/22/08**	**2/20/08**
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**804**	**913**	**754**	**302**	**124**	**360**
Fluoride	NA	NA	**1.3**	**0.82**	**0.71**	**1.2**	**2.8**	**0.5**
Sulfate (as SO4)	NA	NA	**470**	**76.8**	**62.1**	**5.5**	**131**	<5
Sulfide	NA	NA	<1	<1	<1	<1	<1	<1
Nitrate	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrite	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**564**	**414**	**475**	**521**	**381**	**592**
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	<5	<5	<5	<5	<5
Total Alkalinity	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total Dissolved Solids	NA	NA	**2720**	**1960**	**1780**	**1030**	**841**	**1210**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 14 of 27)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-46	TW-47	TW-48	TW-51	TW-52	TW-55
Location Identification and Sample Interval (Feet below ground surface)			**TW-46**	**TW-47**	**TW-48**	**TW-51**	**TW-52**	**TW-55**
Laboratory Sample Identification			**A8183912**	**A8183913**	**A8169712**	**A8184012**	**A8184011**	**A8184010**
Date Collected			**2/20/08**	**2/20/08**	**2/18/08**	**2/22/08**	**2/22/08**	**2/22/08**
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**177**	**57.4**	**134**	**132**	**55.6**	**450**
Fluoride	NA	NA	**0.7**	**0.6**	**0.55**	**0.67**	**0.54**	**0.35**
Sulfate (as SO4)	NA	NA	**92.7**	**7.4**	**15.2**	<5	<5	**68.4**
Sulfide	NA	NA	<1	<1	<1	<1	<1	**6**
Nitrate	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrite	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	<0.05	<0.05	<0.05	**0.057**	<0.05	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**443**	**534**	**382**	**441**	**364**	**1220**
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	<5	<5	<5	<5	<5
Total Alkalinity	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total Dissolved Solids	NA	NA	**854**	**649**	**647**	**676**	**488**	**3840**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-56	TW-56	TW-58	TW-60	TW-63
Location Identification and Sample Interval (Feet below ground surface)			TW-56	TW-56	TW-58	TW-60	TW-63
Laboratory Sample Identification			A8169715	RSB0789-04	A8169716	A8169718	A8175811
Date Collected			2/18/08	2/24/09	2/18/08	2/18/08	2/19/08
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**23.1**	**15D**	**27.3**	**77.8**	**126**
Fluoride	NA	NA	**1.1**	n/a	**0.85**	**0.5**	**0.97**
Sulfate (as SO4)	NA	NA	**14.3**	**7.3B**	**37**	**89.9**	**94.4**
Sulfide	NA	NA	<1	n/a	<1	<1	<1
Nitrate	NA	NA	n/a	<0.05	n/a	n/a	n/a
Nitrite	NA	NA	n/a	<0.05	n/a	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	<0.05	n/a	<0.05	<0.05	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**367**	n/a	**394**	**647**	**330**
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	n/a	<5	<5	<5
Total Alkalinity	NA	NA	n/a	**485**	n/a	n/a	n/a
Total Dissolved Solids	NA	NA	**461**	**475B**	**465**	**882**	**686**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-63-51 (DUP of TW-63)	TW-64	TW-65	TW-67	TW-69	TW-73
Laboratory Sample Identification			A8175812	A8169717	A8169714	A8175813	A8169713	A8183902
Date Collected			2/19/08	2/18/08	2/18/08	2/19/08	2/18/08	2/20/08
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**133**	**221**	**61.9**	**518**	**170**	**8.8**
Fluoride	NA	NA	**0.94**	**0.26**	**0.5**	<0.5	**0.45**	**0.3**
Sulfate (as SO4)	NA	NA	**77.7**	**818**	**47.9**	**4180**	**168**	**16.5**
Sulfide	NA	NA	<1	**1.6**	<1	<1	<1	<1
Nitrate	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrite	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	<0.05	<0.05	<0.05	<0.05	**0.57**	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**372**	**622**	**390**	**1030**	**360**	**405**
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	<5	<5	<5	<5	<5
Total Alkalinity	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total Dissolved Solids	NA	NA	**706**	**2320**	**608**	**7570J**	**894**	**468**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-74**	**TW-75**	**TW-75**	**TW-76**	**TW-78**
	Laboratory Sample Identification		**A8184001**	**A8184006**	**RSB0732-02**	**A8184005**	**RSB0732-01**
	Date Collected		**2/22/08**	**2/22/08**	**2/23/09**	**2/22/08**	**2/23/09**
Analyte (Units)							
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**145**	**52.9**	**160D**	**38.6**	**290D**
Fluoride	NA	NA	**0.5**	**0.33J**	n/a	**0.39**	n/a
Sulfate (as SO4)	NA	NA	**32.6**	**31.5**	**39DB**	<5	**2.7JB**
Sulfide	NA	NA	<1	<1	n/a	<1	n/a
Nitrate	NA	NA	n/a	n/a	<0.05	n/a	<0.05
Nitrite	NA	NA	n/a	n/a	<0.05	n/a	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	<0.05	**0.16**	n/a	<0.05	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	**534**	**478**	n/a	**469**	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	<5	<5	n/a	<5	n/a
Total Alkalinity	NA	NA	n/a	n/a	**570**	n/a	**463**
Total Dissolved Solids	NA	NA	**838**	**625**	**794B**	**578**	**864B**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-578 (DUP of TW-78)	TW-79	TW-83	TW-84	TW-85
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			RSB0732-03	RSA0706-02	RSB0438-09	RSB0535-07	A8F46802
Date Collected			2/23/09	1/22/09	2/12/09	2/17/09	12/4/08
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**280D**	**270**	**17D**	**18D**	**10**
Fluoride	NA	NA	n/a	**0.62**	n/a	n/a	**1.2**
Sulfate (as SO4)	NA	NA	**2.2JB**	**22.2B**	**2.8JB**	**228DB**	**79.7**
Sulfide	NA	NA	n/a	<1	n/a	n/a	<1
Nitrate	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Total Alkalinity	NA	NA	**460**	**702**	**406B**	**393J**	**387**
Total Dissolved Solids	NA	NA	**905B**	**972**	**482B**	**773**	**452**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-86	TW-87	TW-88	TW-89	TW-90	TW-91
Location Identification and Sample Interval (Feet below ground surface)			TW-86	TW-87	TW-88	TW-89	TW-90	TW-91
Laboratory Sample Identification			A8F115003	RSB0691-01	RSB0535-05	A8E85902	A8E85903	A8E85904
Date Collected			11/25/08	2/20/09	2/17/09	11/20/08	11/20/08	11/20/08
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	n/a	**24**	**32D**	n/a	n/a	n/a
Fluoride	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Sulfate (as SO4)	NA	NA	n/a	**1.5JB**	**39.5B**	n/a	n/a	n/a
Sulfide	NA	NA	<1	n/a	n/a	<1	<1	<1
Nitrate	NA	NA	n/a	<0.05	<0.05	n/a	n/a	n/a
Nitrite	NA	NA	n/a	<0.05	<0.05	n/a	n/a	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total Alkalinity	NA	NA	**367**	**433**	**405J**	**404**	**513**	**473**
Total Dissolved Solids	NA	NA	**513**	**437**	**487**	**475**	**565**	**789**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-92	TW-93	TW-94	TW-96	TW-97
Location Identification and Sample Interval (Feet below ground surface)			**TW-92**	**TW-93**	**TW-94**	**TW-96**	**TW-97**
Laboratory Sample Identification			**RSB0604-08**	**A8F15001**	**RSB0385-02**	**RSB0604-04**	**RSB0604-06**
Date Collected			**2/18/09**	**11/25/08**	**2/11/09**	**2/18/09**	**2/18/09**
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**33**	n/a	**110D**	**980D**	**21**
Fluoride	NA	NA	n/a	n/a	n/a	n/a	n/a
Sulfate (as SO4)	NA	NA	**79.1D**	n/a	**167DB**	**9.1JB**	**6.2JB**
Sulfide	NA	NA	n/a	<1	n/a	n/a	n/a
Nitrate	NA	NA	<0.05	n/a	**0.027J**	<0.05	<0.05
Nitrite	NA	NA	<0.05	n/a	**0.02J**	<0.05	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Total Alkalinity	NA	NA	**671B**	**507**	**566**	**426B**	**756B**
Total Dissolved Solids	NA	NA	**869**	**864**	**962**	**1760D**	**668**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-98	TW-99	TW-100	TW-101	TW-102S	TW-102D
Location Identification and Sample Interval (Feet below ground surface)			**TW-98**	**TW-99**	**TW-100**	**TW-101**	**TW-102S**	**TW-102D**
Laboratory Sample Identification			**RSB0604-05**	**RSB0478-03**	**RSB0385-06**	**RSB0438-01**	**RSB0385-03**	**RSB0385-01**
Date Collected			**2/18/09**	**2/13/09**	**2/11/09**	**2/12/09**	**2/11/09**	**2/11/09**
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	**37**	**170D**	**300D**	**140D**	**24D**	**430D**
Fluoride	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Sulfate (as SO4)	NA	NA	**9.5JB**	**96DB**	**64.9DB**	**95.7DB**	**179DB**	**93DB**
Sulfide	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Nitrate	NA	NA	**0.02J**	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite	NA	NA	**0.06B**	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total Alkalinity	NA	NA	**377B**	**390B**	**423**	**749**	**488**	**552**
Total Dissolved Solids	NA	NA	**409**	**830B**	**904**	**1080**	**779**	**1280**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-103	TW-104	TW-104D	TW-105D	TW-106S	TW-107
Location Identification and Sample Interval (Feet below ground surface)			**TW-103**	**TW-104**	**TW-104D**	**TW-105D**	**TW-106S**	**TW-107**
Laboratory Sample Identification			**A8F15002**	**A8F47001**	**RSB0535-09**	**RSB0535-11**	**RSB0604-03**	**RSA0614-04**
Date Collected			**11/25/08**	**12/4/08**	**2/17/09**	**2/17/09**	**2/18/09**	**1/20/09**
Wet Chemistry (mg/L)								
Chloride (as Cl)	NA	NA	n/a	**124**	**260D**	**66D**	**440D**	**140**
Fluoride	NA	NA	n/a	**0.34**	n/a	n/a	n/a	**0.89**
Sulfate (as SO4)	NA	NA	n/a	**50.4**	**58.1DB**	**232DB**	**31.2D**	**191B**
Sulfide	NA	NA	<1	<1	n/a	n/a	n/a	<1
Nitrate	NA	NA	n/a	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite	NA	NA	n/a	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total Alkalinity	NA	NA	**504**	**460**	**404J**	**429J**	**622B**	**475**
Total Dissolved Solids	NA	NA	**614**	**706**	**816**	**828**	**1310D**	**911**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-108**	**TW-109**	**TW-110**	**TW-112**	**TW-113**
	Laboratory Sample Identification		**RSA0614-03**	**RSA0614-05**	**RSB0385-07**	**A8E85901**	**RSA0614-02**
	Date Collected		**1/20/09**	**1/20/09**	**2/11/09**	**12/20/08**	**1/20/09**
Analyte (Units)							
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**150**	**180**	**85D**	n/a	**290**
Fluoride	NA	NA	**0.57**	**0.31**	n/a	n/a	**0.42**
Sulfate (as SO4)	NA	NA	**2.8JB**	**291B**	**51.9DB**	n/a	**2.5JB**
Sulfide	NA	NA	<1	<1	n/a	<1	<1
Nitrate	NA	NA	<0.05	1.25	<0.05	n/a	<0.05
Nitrite	NA	NA	<0.05	<0.05	<0.05	n/a	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Total Alkalinity	NA	NA	**649**	**456**	**390**	**603**	**607**
Total Dissolved Solids	NA	NA	**859**	**1120**	**541**	**840**	**1060**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-114	TW-115	TW-116S	TW-116D	TW-118
	Laboratory Sample Identification		RSA0614-01	RSB0438-05	RSB0691-06	RSB0643-07	RSB0385-08
	Date Collected		1/20/09	2/12/09	2/20/09	2/19/09	2/11/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	Residential Scenario					
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**270**	**400D**	**260D**	**170D**	**70D**
Fluoride	NA	NA	**0.69**	n/a	n/a	n/a	n/a
Sulfate (as SO4)	NA	NA	**13B**	**23.3B**	**18.9JB**	**1.4JB**	**33.8B**
Sulfide	NA	NA	<1	n/a	n/a	n/a	n/a
Nitrate	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Total Alkalinity	NA	NA	**617**	**559B**	**561**	**491**	**406**
Total Dissolved Solids	NA	NA	**1020**	**1340DB**	**977B**	**737**	**526**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-120	TW-123	TW-523 (DUP of TW-123)	TW-124	TW-125
Location Identification and Sample Interval (Feet below ground surface)			TW-120	TW-123	TW-523 (DUP of TW-123)	TW-124	TW-125
Laboratory Sample Identification			RSB0478-02	RSB0438-02	RSB0438-03	RSB0438-08	RSB0385-05
Date Collected			2/13/09	2/12/09	2/12/09	2/12/09	2/11/09
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**95D**	**130D**	**130D**	**47D**	**7.1D**
Fluoride	NA	NA	n/a	n/a	n/a	n/a	n/a
Sulfate (as SO4)	NA	NA	**58.2DB**	**2JB**	**2JB**	**8.4B**	**175DB**
Sulfide	NA	NA	n/a	n/a	n/a	n/a	n/a
Nitrate	NA	NA	<0.05	<0.05	<0.05	<0.05	**0.852**
Nitrite	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Total Alkalinity	NA	NA	**413B**	**508**	**508B**	**848B**	**365**
Total Dissolved Solids	NA	NA	**643B**	**724B**	**740B**	**945B**	**623**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-126	TW-128	TW-129	TW-130	TW-131
Location Identification and Sample Interval (Feet below ground surface)			**TW-126**	**TW-128**	**TW-129**	**TW-130**	**TW-131**
Laboratory Sample Identification			**RSB0438-07**	**RSB0438-06**	**RSB0535-06**	**RSB0604-07**	**RSB0535-01**
Date Collected			**2/12/09**	**2/12/09**	**2/17/09**	**2/18/09**	**2/17/09**
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**180D**	**38D**	**60D**	**230D**	**51D**
Fluoride	NA	NA	n/a	n/a	n/a	n/a	n/a
Sulfate (as SO4)	NA	NA	**1.9JB**	**108DB**	**1.3JB**	**48.8D**	**18.2B**
Sulfide	NA	NA	n/a	n/a	n/a	n/a	n/a
Nitrate	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite	NA	NA	<0.05	<0.05	<0.05	<0.05	**0.04J**
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	n/a	n/a	n/a
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	n/a	n/a	n/a
Total Alkalinity	NA	NA	**542B**	**331B**	**632J**	**544B**	**312J**
Total Dissolved Solids	NA	NA	**822B**	**582B**	**641**	**869**	**388**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10a

Groundwater Sample Analytical Data - Wet Chemistry
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-531 (DUP of TW-131)	W-01S	W-16S	W-22	W-26
Location Identification and Sample Interval (Feet below ground surface)			TW-531 (DUP of TW-131)	W-01S	W-16S	W-22	W-26
Laboratory Sample Identification			RSB0535-04	RSB0438-04	A8183903	RSB0478-01	A8175801
Date Collected			2/17/09	2/12/09	2/20/08	2/13/09	2/19/08
Wet Chemistry (mg/L)							
Chloride (as Cl)	NA	NA	**50D**	**29D**	**277**	**120D**	**39.5**
Fluoride	NA	NA	n/a	n/a	**0.65**	n/a	**0.21**
Sulfate (as SO4)	NA	NA	**16.8B**	**64DB**	**135**	**2.1JB**	**253**
Sulfide	NA	NA	n/a	n/a	<1	n/a	<1
Nitrate	NA	NA	<0.05	<0.05	n/a	**0.023J**	n/a
Nitrite	NA	NA	<0.05	<0.05	n/a	<0.05	n/a
Nitrate/Nitrite (nitrogen)	NA	NA	n/a	n/a	<0.05	n/a	<0.05
Bicarbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	**393**	n/a	**453**
Carbonate Alkalinity (as CaCO3)	NA	NA	n/a	n/a	<5	n/a	<5
Total Alkalinity	NA	NA	**313J**	**639B**	n/a	**466B**	n/a
Total Dissolved Solids	NA	NA	**393**	**822B**	**1070**	**693B**	**905**
Total Cyanide	0.2	0.2	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 1 of 86)

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		ES-01	ES-02	ES-03	ES-03
			A7C56905/DL	A7C56904	A7C56903/DL	RSB0643-05
			10/30/07	10/30/07	10/30/07	2/19/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	Residential Scenario				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	<1	<2	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<2*	*<1*
1,1,2-Trichloroethane	5	5	<1	<1	**320D**	**130**
1,1-Dichloroethane	1300	340	<1	<1	**4**	**9.3**
1,1-Dichloroethene	7	7	<1	<1	**16**	**39**
1,2,4-Trimethylbenzene	17	5	**13**	<1	<2	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	*<2*	*<1*
1,2-Dichlorobenzene	600	600	<1	<1	<2	<1
1,2-Dichloroethane	5	5	<1	<1	**5**	**15**
1,2-Dichloropropane	5	5	**5**	<1	<2	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	**5**	<1	<2	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	<2	<1
1,4-Dichlorobenzene	75	75	<1	<1	<2	<1
1,4-Dioxane (p-dioxane)	260	80	<40	<40	<80	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<10	<5
Acetone	930	260	<5	**24**	**35**	<5
Benzene	5	5	**380D**	**12**	<2	<1
Bromodichloromethane	80	80	<1	<1	<2	<1
Bromoform	80	80	<1	<1	<2	<1
Bromomethane	10	4	<1	<1	<2	<1
Carbon disulfide	30	9	<1	<1	<2	<1
Carbon tetrachloride	5	5	<1	<1	<2	<1
Chlorobenzene	100	100	<1	<1	<2	<1
Chloroethane	89	48	<1	<1	<2	<1
Chloroform	80	80	<1	<1	<2	<1
Chloromethane	40	20	<1	<1	<2	<1
cis-1,2-Dichloroethene	70	70	<1	<1	<2	**1.1**
cis-1,3-Dichloropropene	NA	NA	<1	<1	<2	<1
Dibromochloromethane	80	80	<1	<1	<2	<1
Ethylbenzene	700	700	**14**	<1	<2	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 2 of 86)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	ES-01	ES-02	ES-03	ES-03
Location Identification and Sample Interval (Feet below ground surface)						
Laboratory Sample Identification			A7C56905/DL	A7C56904	A7C56903/DL	RSB0643-05
Date Collected			10/30/07	10/30/07	10/30/07	2/19/09
Isopropylbenzene (Cumene)	824	224	**45**	**9**	**1J**	**0.65J**
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	<10	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<10	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**85**	**27**	**10**	**7.4**
Methylene chloride	5	5	<1	<1	<2	<1
Naphthalene	9	3	**71**	<1	<2	<1
n-Butylbenzene	80	21	**10**	**5**	<2	<1
n-Propylbenzene	80	20	**64**	**11**	<2	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	**6**	**2**	<2	<1
sec-Butylbenzene	80	22	**13**	**6**	**3**	**1.3**
Styrene	100	100	<1	<1	<2	<1
t-Butylbenzene	NA	NA	**6**	**4**	**2**	**1.3**
Tetrachloroethylene (PCE)	5	5	<1	<1	<2	<1
Toluene	1000	1000	**16**	**1**	<2	**0.94J**
Total 1,2-Dichloroethene	NA	NA	<2	<2	<4	**2.8**
trans-1,2-Dichloroethene	100	100	<1	<1	<2	**1.7**
trans-1,3-Dichloropropene	NA	NA	<1	<1	<2	<1
Trichloroethylene (TCE)	5	5	<1	<1	**4**	**8.3**
Vinyl chloride	2	2	<1	<1	**66**	**310**
Xylenes,total	10000	10000	**50**	<3	**3J**	**1.7J**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 3 of 86)

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		FINA/MW-38	FINA/MW-38-53 (DUP of FINA/MW-38)	N2-4
			A8183908	A8183909	A8164001
			2/20/08	2/20/08	2/15/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]				
	Non-Residental Scenario	**Residential Scenario**			
Volatile Organic Compounds (ug/L)					
1,1,1-Trichloroethane	200	200	<4	<4	n/a
1,1,2,2-Tetrachloroethane	1	0.7	*<4*	*<4*	n/a
1,1,2-Trichloroethane	5	5	<4	<4	n/a
1,1-Dichloroethane	1300	340	<4	<4	n/a
1,1-Dichloroethene	7	7	<4	<4	n/a
1,2,4-Trimethylbenzene	17	5	<4	<4	n/a
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	n/a
1,2-Dichlorobenzene	600	600	<4	<4	n/a
1,2-Dichloroethane	5	5	<4	<4	n/a
1,2-Dichloropropane	5	5	<4	<4	n/a
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<4	<4	n/a
1,3-Dichlorobenzene	NA	NA	<4	<4	n/a
1,4-Dichlorobenzene	75	75	<4	<4	n/a
1,4-Dioxane (p-dioxane)	260	80	*<160*	*<160*	n/a
2-Hexanone (Methyl butyl ketone)	NA	NA	<20	<20	n/a
Acetone	930	260	<20	**16J**	n/a
Benzene	5	5	**23**	**180**	**25**
Bromodichloromethane	80	80	<4	<4	n/a
Bromoform	80	80	<4	<4	n/a
Bromomethane	10	4	<4	<4	n/a
Carbon disulfide	30	9	<4	<4	n/a
Carbon tetrachloride	5	5	<4	<4	n/a
Chlorobenzene	100	100	<4	<4	n/a
Chloroethane	89	48	<4	<4	n/a
Chloroform	80	80	<4	<4	n/a
Chloromethane	40	20	<4	<4	n/a
cis-1,2-Dichloroethene	70	70	<4	<4	n/a
cis-1,3-Dichloropropene	NA	NA	<4	<4	n/a
Dibromochloromethane	80	80	<4	<4	n/a
Ethylbenzene	700	700	<4	**3J**	n/a

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 4 of 86)

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		FINA/MW-38	FINA/MW-38-53 (DUP of FINA/MW-38)	N2-4
			A8183908	A8183909	A8164001
			2/20/08	2/20/08	2/15/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]				
	Non-Residental Scenario	**Residential Scenario**			
Isopropylbenzene (Cumene)	824	224	<4	**6**	n/a
Methyl ethyl ketone (2-Butanone)	2800	820	<20	<20	n/a
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<20	<20	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<4	<4	<1
Methylene chloride	5	5	<4	<4	n/a
Naphthalene	9	3	*<4*	**11B**	n/a
n-Butylbenzene	80	21	<4	<4	n/a
n-Propylbenzene	80	20	<4	**6**	n/a
P-Cymene (p-Isopropyltoluene)	NA	NA	<4	<4	n/a
sec-Butylbenzene	80	22	<4	<4	n/a
Styrene	100	100	<4	<4	n/a
t-Butylbenzene	NA	NA	<4	<4	n/a
Tetrachloroethylene (PCE)	5	5	<4	<4	n/a
Toluene	1000	1000	<4	**14**	n/a
Total 1,2-Dichloroethene	NA	NA	<8	<8	n/a
trans-1,2-Dichloroethene	100	100	<4	<4	n/a
trans-1,3-Dichloropropene	NA	NA	<4	<4	n/a
Trichloroethylene (TCE)	5	5	<4	<4	n/a
Vinyl chloride	2	2	*<4*	*<4*	n/a
Xylenes,total	10000	10000	<12	**22**	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 5 of 86)

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		N2-4	N3-2	N3-2	N3-3
			RSAO614/K550W	A8160505	RSB0691-04	A7C56901
			1/21/09	2/15/08	2/20/09	10/30/07
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<5	n/a	<5D	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<5*	n/a	*<5D*	*<1*
1,1,2-Trichloroethane	5	5	<5	n/a	<5D	<1
1,1-Dichloroethane	1300	340	<5	n/a	<5D	<1
1,1-Dichloroethene	7	7	<5	n/a	<5D	<1
1,2,4-Trimethylbenzene	17	5	**38**	n/a	<5D	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<5*	n/a	*<5D*	*<1*
1,2-Dichlorobenzene	600	600	<5	n/a	<5D	<1
1,2-Dichloroethane	5	5	<5	n/a	<5D	<1
1,2-Dichloropropane	5	5	<5	n/a	<5D	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	**3.7J**	n/a	<5D	**0.6J**
1,3-Dichlorobenzene	NA	NA	<5	n/a	<5D	<1
1,4-Dichlorobenzene	75	75	<5	n/a	<5D	<1
1,4-Dioxane (p-dioxane)	260	80	*<250*	n/a	*<200D*	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<25	n/a	<25D	<5
Acetone	930	260	**17J**	n/a	**14DJ**	**86**
Benzene	5	5	**100**	**1.1**	**1.2DJ**	**1**
Bromodichloromethane	80	80	<5	n/a	<5D	<1
Bromoform	80	80	<5	n/a	<5D	<1
Bromomethane	10	4	*<5*	n/a	*<5D*	<1
Carbon disulfide	30	9	<5	n/a	<5D	<1
Carbon tetrachloride	5	5	<5	n/a	<5D	<1
Chlorobenzene	100	100	<5	n/a	<5D	<1
Chloroethane	89	48	<5	n/a	<5D	<1
Chloroform	80	80	<5	n/a	<5D	**0.7J**
Chloromethane	40	20	<5	n/a	<5D	<1
cis-1,2-Dichloroethene	70	70	<5	n/a	<5D	<1
cis-1,3-Dichloropropene	NA	NA	<5	n/a	<5D	<1
Dibromochloromethane	80	80	<5	n/a	<5D	<1
Ethylbenzene	700	700	**20**	n/a	<5D	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		N2-4	N3-2	N3-2	N3-3
			RSAO614/K550W	A8160505	RSB0691-04	A7C56901
			1/21/09	2/15/08	2/20/09	10/30/07
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Isopropylbenzene (Cumene)	824	224	**5.1**	n/a	<5D	**4**
Methyl ethyl ketone (2-Butanone)	2800	820	**3.2J**	n/a	<25D	**5**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<25	n/a	<25D	**4J**
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**7.1**	**20**	**18D**	<1
Methylene chloride	5	5	**4.6JB**	n/a	<5D	<1
Naphthalene	9	3	**11J**	n/a	<5D	<1
n-Butylbenzene	80	21	**1.1J**	n/a	<5D	<1
n-Propylbenzene	80	20	**4.4J**	n/a	<5D	**2**
P-Cymene (p-Isopropyltoluene)	NA	NA	**1.2J**	n/a	<5D	<1
sec-Butylbenzene	80	22	**0.89J**	n/a	<5D	**4**
Styrene	100	100	<5	n/a	<5D	<1
t-Butylbenzene	NA	NA	<5	n/a	<5D	**4**
Tetrachloroethylene (PCE)	5	5	<5	n/a	<5D	<1
Toluene	1000	1000	**42**	n/a	<5D	<1
Total 1,2-Dichloroethene	NA	NA	<10	n/a	<10D	<2
trans-1,2-Dichloroethene	100	100	<5	n/a	<5D	<1
trans-1,3-Dichloropropene	NA	NA	<5	n/a	<5D	<1
Trichloroethylene (TCE)	5	5	<5	n/a	<5D	<1
Vinyl chloride	2	2	<5	n/a	<5D	**5**
Xylenes,total	10000	10000	**74**	n/a	<10D	<3

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		N3-3	N3-3	N3-4	N4-1
			A8164002	RSB0691-02	RSB0789-03	A8164008
			2/15/08	2/20/09	2/24/09	2/16/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	n/a	<8D	<1	n/a
1,1,2,2-Tetrachloroethane	1	0.7	n/a	*<8D*	*<1*	n/a
1,1,2-Trichloroethane	5	5	n/a	*<8D*	<1	n/a
1,1-Dichloroethane	1300	340	n/a	<8D	<1	n/a
1,1-Dichloroethene	7	7	n/a	*<8D*	<1	n/a
1,2,4-Trimethylbenzene	17	5	n/a	*<8D*	<1	n/a
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	n/a	*<8D*	*<1*	n/a
1,2-Dichlorobenzene	600	600	n/a	<8D	<1	n/a
1,2-Dichloroethane	5	5	n/a	*<8D*	<1	n/a
1,2-Dichloropropane	5	5	n/a	*<8D*	<1	n/a
1,3,5-Trimethylbenzene (Mesitylene)	17	5	n/a	*<8D*	<1	n/a
1,3-Dichlorobenzene	NA	NA	n/a	<8D	<1	n/a
1,4-Dichlorobenzene	75	75	n/a	<8D	<1	n/a
1,4-Dioxane (p-dioxane)	260	80	n/a	*<320D*	<40	n/a
2-Hexanone (Methyl butyl ketone)	NA	NA	n/a	<40D	<5	n/a
Acetone	930	260	n/a	<40D	**8B**	n/a
Benzene	5	5	**3.6**	**1.9DJ**	**1.2B**	<1
Bromodichloromethane	80	80	n/a	<8D	<1	n/a
Bromoform	80	80	n/a	<8D	<1	n/a
Bromomethane	10	4	n/a	*<8D*	<1	n/a
Carbon disulfide	30	9	n/a	<8D	<1	n/a
Carbon tetrachloride	5	5	n/a	*<8D*	<1	n/a
Chlorobenzene	100	100	n/a	<8D	<1	n/a
Chloroethane	89	48	n/a	<8D	<1	n/a
Chloroform	80	80	n/a	<8D	<1	n/a
Chloromethane	40	20	n/a	<8D	<1	n/a
cis-1,2-Dichloroethene	70	70	n/a	<8D	<1	n/a
cis-1,3-Dichloropropene	NA	NA	n/a	<8D	<1	n/a
Dibromochloromethane	80	80	n/a	<8D	<1	n/a
Ethylbenzene	700	700	n/a	<8D	<1	n/a

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 8 of 86)

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		N3-3	N3-3	N3-4	N4-1
			A8164002	RSB0691-02	RSB0789-03	A8164008
			2/15/08	2/20/09	2/24/09	2/16/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Isopropylbenzene (Cumene)	824	224	n/a	<8D	<1	n/a
Methyl ethyl ketone (2-Butanone)	2800	820	n/a	<40D	**1.4J**	n/a
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	n/a	<40D	<5	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<8D	**4.8**	**28**
Methylene chloride	5	5	n/a	*<8D*	<1	n/a
Naphthalene	9	3	n/a	*<8D*	<1	n/a
n-Butylbenzene	80	21	n/a	<8D	<1	n/a
n-Propylbenzene	80	20	n/a	<8D	<1	n/a
P-Cymene (p-Isopropyltoluene)	NA	NA	n/a	<8D	<1	n/a
sec-Butylbenzene	80	22	n/a	<8D	<1	n/a
Styrene	100	100	n/a	<8D	<1	n/a
t-Butylbenzene	NA	NA	n/a	<8D	<1	n/a
Tetrachloroethylene (PCE)	5	5	n/a	*<8D*	<1	n/a
Toluene	1000	1000	n/a	<8D	<1	n/a
Total 1,2-Dichloroethene	NA	NA	n/a	<16D	<2	n/a
trans-1,2-Dichloroethene	100	100	n/a	<8D	<1	n/a
trans-1,3-Dichloropropene	NA	NA	n/a	<8D	<1	n/a
Trichloroethylene (TCE)	5	5	n/a	*<8D*	<1	n/a
Vinyl chloride	2	2	n/a	**4.8DJ**	<1	n/a
Xylenes,total	10000	10000	n/a	<16D	<2	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		N4-1-51 (DUP of N4-1) A8164009 2/16/08	N4-1 RSA0614/K5501 1/21/09	N4-2 A8183911 2/20/08	N4-2 RSA0614/K58CW 1/22/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	n/a	<1	<4	<1
1,1,2,2-Tetrachloroethane	1	0.7	n/a	*<1*	*<4*	*<1*
1,1,2-Trichloroethane	5	5	n/a	<1	<4	<1
1,1-Dichloroethane	1300	340	n/a	<1	<4	<1
1,1-Dichloroethene	7	7	n/a	<1	<4	<1
1,2,4-Trimethylbenzene	17	5	n/a	<1	<4	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	n/a	*<1*	<0.01	*<1*
1,2-Dichlorobenzene	600	600	n/a	<1	<4	<1
1,2-Dichloroethane	5	5	n/a	<1	<4	<1
1,2-Dichloropropane	5	5	n/a	<1	<4	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	n/a	<1	<4	<1
1,3-Dichlorobenzene	NA	NA	n/a	<1	<4	<1
1,4-Dichlorobenzene	75	75	n/a	<1	<4	<1
1,4-Dioxane (p-dioxane)	260	80	n/a	<50	*<160*	<50
2-Hexanone (Methyl butyl ketone)	NA	NA	n/a	<5	<20	<5
Acetone	930	260	n/a	<5	<20	<5
Benzene	5	5	<1	**0.79J**	<4	<1
Bromodichloromethane	80	80	n/a	<1	<4	<1
Bromoform	80	80	n/a	<1	<4	<1
Bromomethane	10	4	n/a	<1	<4	<1
Carbon disulfide	30	9	n/a	<1	<4	<1
Carbon tetrachloride	5	5	n/a	<1	<4	<1
Chlorobenzene	100	100	n/a	<1	<4	<1
Chloroethane	89	48	n/a	<1	<4	<1
Chloroform	80	80	n/a	<1	<4	<1
Chloromethane	40	20	n/a	<1	<4	<1
cis-1,2-Dichloroethene	70	70	n/a	<1	<4	<1
cis-1,3-Dichloropropene	NA	NA	n/a	<1	<4	<1
Dibromochloromethane	80	80	n/a	<1	<4	<1
Ethylbenzene	700	700	n/a	<1	<4	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 10 of 86)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	N4-1-51 (DUP of N4-1) A8164009 2/16/08	N4-1 RSA0614/K5501 1/21/09	N4-2 A8183911 2/20/08	N4-2 RSA0614/K58CW 1/22/09
Isopropylbenzene (Cumene)	824	224	n/a	<1	<4	<1
Methyl ethyl ketone (2-Butanone)	2800	820	n/a	<5	<20	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	n/a	<5	<20	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**47**	**12**	**19**	**14**
Methylene chloride	5	5	n/a	<1	<4	<1
Naphthalene	9	3	n/a	<1	<4	<1
n-Butylbenzene	80	21	n/a	<1	<4	<1
n-Propylbenzene	80	20	n/a	<1	<4	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	n/a	<1	<4	<1
sec-Butylbenzene	80	22	n/a	<1	<4	<1
Styrene	100	100	n/a	<1	<4	<1
t-Butylbenzene	NA	NA	n/a	<1	<4	<1
Tetrachloroethylene (PCE)	5	5	n/a	<1	<4	<1
Toluene	1000	1000	n/a	<1	<4	<1
Total 1,2-Dichloroethene	NA	NA	n/a	<2	<8	<2
trans-1,2-Dichloroethene	100	100	n/a	<1	<4	<1
trans-1,3-Dichloropropene	NA	NA	n/a	<1	<4	<1
Trichloroethylene (TCE)	5	5	n/a	<1	<4	<1
Vinyl chloride	2	2	n/a	<1	<4	<1
Xylenes,total	10000	10000	n/a	<2	<12	<2

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		N5-1	N5-2	N5-3	N5-3-52 (DUP of N5-3)	OW-01
			A8184004	A8183905	A8183906	A8183907	A8160507
			2/22/08	2/20/08	2/20/08	2/20/08	2/15/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	Residential Scenario					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<1	<1	<1	n/a
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<1*	*<1*	n/a
1,1,2-Trichloroethane	5	5	<1	<1	<1	<1	n/a
1,1-Dichloroethane	1300	340	<1	<1	<1	<1	n/a
1,1-Dichloroethene	7	7	<1	<1	<1	<1	n/a
1,2,4-Trimethylbenzene	17	5	<1	<1	<1	<1	n/a
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	<0.01	<0.01	n/a
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1	n/a
1,2-Dichloroethane	5	5	<1	<1	<1	<1	n/a
1,2-Dichloropropane	5	5	<1	<1	<1	<1	n/a
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<1	<1	<1	n/a
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1	n/a
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1	n/a
1,4-Dioxane (p-dioxane)	260	80	<40	<40	<40	<40	n/a
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<5	<5	n/a
Acetone	930	260	<5	<5	<5	<5	n/a
Benzene	5	5	<1	<1	<1	<1	<1
Bromodichloromethane	80	80	<1	<1	<1	<1	n/a
Bromoform	80	80	<1	<1	<1	<1	n/a
Bromomethane	10	4	<1	<1	<1	<1	n/a
Carbon disulfide	30	9	<1	<1	<1	<1	n/a
Carbon tetrachloride	5	5	<1	<1	<1	<1	n/a
Chlorobenzene	100	100	<1	<1	<1	<1	n/a
Chloroethane	89	48	<1	<1	<1	<1	n/a
Chloroform	80	80	<1	<1	<1	<1	n/a
Chloromethane	40	20	<1	<1	<1	<1	n/a
cis-1,2-Dichloroethene	70	70	<1	<1	<1	<1	n/a
cis-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1	n/a
Dibromochloromethane	80	80	<1	<1	<1	<1	n/a
Ethylbenzene	700	700	<1	<1	<1	<1	n/a

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		N5-1	N5-2	N5-3	N5-3-52 (DUP of N5-3)	OW-01
			A8184004	A8183905	A8183906	A8183907	A8160507
			2/22/08	2/20/08	2/20/08	2/20/08	2/15/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	<1	<1	<1	<1	n/a
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	<5	<5	n/a
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<5	<5	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	**1**	<1	**0.5J**	<1
Methylene chloride	5	5	<1	<1	<1	<1	n/a
Naphthalene	9	3	<1	<1	<1	<1	n/a
n-Butylbenzene	80	21	<1	<1	<1	<1	n/a
n-Propylbenzene	80	20	<1	<1	<1	<1	n/a
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<1	<1	<1	n/a
sec-Butylbenzene	80	22	<1	<1	<1	<1	n/a
Styrene	100	100	<1	<1	<1	<1	n/a
t-Butylbenzene	NA	NA	<1	<1	<1	<1	n/a
Tetrachloroethylene (PCE)	5	5	<1	<1	<1	<1	n/a
Toluene	1000	1000	<1	<1	<1	<1	n/a
Total 1,2-Dichloroethene	NA	NA	<2	<2	<2	<2	n/a
trans-1,2-Dichloroethene	100	100	<1	<1	<1	<1	n/a
trans-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1	n/a
Trichloroethylene (TCE)	5	5	<1	<1	<1	<1	n/a
Vinyl chloride	2	2	<1	<1	<1	<1	n/a
Xylenes,total	10000	10000	<3	<3	<3	<3	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		OW-02	OW-03	OW-04	OW-04-50 (DUP of OW-04)	OW-05
			A8164014DL	A8164011	A8160503	A8160504	A8164007
			2/16/08	2/16/08	2/15/08	2/15/08	2/16/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	Residential Scenario					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	n/a	n/a	n/a	n/a	n/a
1,1,2,2-Tetrachloroethane	1	0.7	n/a	n/a	n/a	n/a	n/a
1,1,2-Trichloroethane	5	5	n/a	n/a	n/a	n/a	n/a
1,1-Dichloroethane	1300	340	n/a	n/a	n/a	n/a	n/a
1,1-Dichloroethene	7	7	n/a	n/a	n/a	n/a	n/a
1,2,4-Trimethylbenzene	17	5	n/a	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	n/a	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	600	600	n/a	n/a	n/a	n/a	n/a
1,2-Dichloroethane	5	5	n/a	n/a	n/a	n/a	n/a
1,2-Dichloropropane	5	5	n/a	n/a	n/a	n/a	n/a
1,3,5-Trimethylbenzene (Mesitylene)	17	5	n/a	n/a	n/a	n/a	n/a
1,3-Dichlorobenzene	NA	NA	n/a	n/a	n/a	n/a	n/a
1,4-Dichlorobenzene	75	75	n/a	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	260	80	n/a	n/a	n/a	n/a	n/a
2-Hexanone (Methyl butyl ketone)	NA	NA	n/a	n/a	n/a	n/a	n/a
Acetone	930	260	n/a	n/a	n/a	n/a	n/a
Benzene	5	5	**220D**	<1	<1	<1	<1
Bromodichloromethane	80	80	n/a	n/a	n/a	n/a	n/a
Bromoform	80	80	n/a	n/a	n/a	n/a	n/a
Bromomethane	10	4	n/a	n/a	n/a	n/a	n/a
Carbon disulfide	30	9	n/a	n/a	n/a	n/a	n/a
Carbon tetrachloride	5	5	n/a	n/a	n/a	n/a	n/a
Chlorobenzene	100	100	n/a	n/a	n/a	n/a	n/a
Chloroethane	89	48	n/a	n/a	n/a	n/a	n/a
Chloroform	80	80	n/a	n/a	n/a	n/a	n/a
Chloromethane	40	20	n/a	n/a	n/a	n/a	n/a
cis-1,2-Dichloroethene	70	70	n/a	n/a	n/a	n/a	n/a
cis-1,3-Dichloropropene	NA	NA	n/a	n/a	n/a	n/a	n/a
Dibromochloromethane	80	80	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		OW-02	OW-03	OW-04	OW-04-50 (DUP of OW-04)	OW-05
			A8164014DL	A8164011	A8160503	A8160504	A8164007
			2/16/08	2/16/08	2/15/08	2/15/08	2/16/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	Residential Scenario					
Isopropylbenzene (Cumene)	824	224	n/a	n/a	n/a	n/a	n/a
Methyl ethyl ketone (2-Butanone)	2800	820	n/a	n/a	n/a	n/a	n/a
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	<1	<1	<1
Methylene chloride	5	5	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a
n-Butylbenzene	80	21	n/a	n/a	n/a	n/a	n/a
n-Propylbenzene	80	20	n/a	n/a	n/a	n/a	n/a
P-Cymene (p-Isopropyltoluene)	NA	NA	n/a	n/a	n/a	n/a	n/a
sec-Butylbenzene	80	22	n/a	n/a	n/a	n/a	n/a
Styrene	100	100	n/a	n/a	n/a	n/a	n/a
t-Butylbenzene	NA	NA	n/a	n/a	n/a	n/a	n/a
Tetrachloroethylene (PCE)	5	5	n/a	n/a	n/a	n/a	n/a
Toluene	1000	1000	n/a	n/a	n/a	n/a	n/a
Total 1,2-Dichloroethene	NA	NA	n/a	n/a	n/a	n/a	n/a
trans-1,2-Dichloroethene	100	100	n/a	n/a	n/a	n/a	n/a
trans-1,3-Dichloropropene	NA	NA	n/a	n/a	n/a	n/a	n/a
Trichloroethylene (TCE)	5	5	n/a	n/a	n/a	n/a	n/a
Vinyl chloride	2	2	n/a	n/a	n/a	n/a	n/a
Xylenes,total	10000	10000	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		OW-08	OW-09	OW-10	OW-12
	Laboratory Sample Identification		A8164005DL	A8164003DL	A8164006	A8164015
	Date Collected		2/16/08	2/15/08	2/16/08	2/16/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	Residential Scenario				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	n/a	n/a	n/a	n/a
1,1,2,2-Tetrachloroethane	1	0.7	n/a	n/a	n/a	n/a
1,1,2-Trichloroethane	5	5	n/a	n/a	n/a	n/a
1,1-Dichloroethane	1300	340	n/a	n/a	n/a	n/a
1,1-Dichloroethene	7	7	n/a	n/a	n/a	n/a
1,2,4-Trimethylbenzene	17	5	n/a	n/a	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	n/a	n/a	n/a	n/a
1,2-Dichlorobenzene	600	600	n/a	n/a	n/a	n/a
1,2-Dichloroethane	5	5	n/a	n/a	n/a	n/a
1,2-Dichloropropane	5	5	n/a	n/a	n/a	n/a
1,3,5-Trimethylbenzene (Mesitylene)	17	5	n/a	n/a	n/a	n/a
1,3-Dichlorobenzene	NA	NA	n/a	n/a	n/a	n/a
1,4-Dichlorobenzene	75	75	n/a	n/a	n/a	n/a
1,4-Dioxane (p-dioxane)	260	80	n/a	n/a	n/a	n/a
2-Hexanone (Methyl butyl ketone)	NA	NA	n/a	n/a	n/a	n/a
Acetone	930	260	n/a	n/a	n/a	n/a
Benzene	5	5	**130D**	**380D**	<1	<1
Bromodichloromethane	80	80	n/a	n/a	n/a	n/a
Bromoform	80	80	n/a	n/a	n/a	n/a
Bromomethane	10	4	n/a	n/a	n/a	n/a
Carbon disulfide	30	9	n/a	n/a	n/a	n/a
Carbon tetrachloride	5	5	n/a	n/a	n/a	n/a
Chlorobenzene	100	100	n/a	n/a	n/a	n/a
Chloroethane	89	48	n/a	n/a	n/a	n/a
Chloroform	80	80	n/a	n/a	n/a	n/a
Chloromethane	40	20	n/a	n/a	n/a	n/a
cis-1,2-Dichloroethene	70	70	n/a	n/a	n/a	n/a
cis-1,3-Dichloropropene	NA	NA	n/a	n/a	n/a	n/a
Dibromochloromethane	80	80	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	OW-08	OW-09	OW-10	OW-12
Location Identification and Sample Interval (Feet below ground surface)						
Laboratory Sample Identification			A8164005DL	A8164003DL	A8164006	A8164015
Date Collected			2/16/08	2/15/08	2/16/08	2/16/08
Isopropylbenzene (Cumene)	824	224	n/a	n/a	n/a	n/a
Methyl ethyl ketone (2-Butanone)	2800	820	n/a	n/a	n/a	n/a
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	**63D**	<1	<1
Methylene chloride	5	5	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a
n-Butylbenzene	80	21	n/a	n/a	n/a	n/a
n-Propylbenzene	80	20	n/a	n/a	n/a	n/a
P-Cymene (p-Isopropyltoluene)	NA	NA	n/a	n/a	n/a	n/a
sec-Butylbenzene	80	22	n/a	n/a	n/a	n/a
Styrene	100	100	n/a	n/a	n/a	n/a
t-Butylbenzene	NA	NA	n/a	n/a	n/a	n/a
Tetrachloroethylene (PCE)	5	5	n/a	n/a	n/a	n/a
Toluene	1000	1000	n/a	n/a	n/a	n/a
Total 1,2-Dichloroethene	NA	NA	n/a	n/a	n/a	n/a
trans-1,2-Dichloroethene	100	100	n/a	n/a	n/a	n/a
trans-1,3-Dichloropropene	NA	NA	n/a	n/a	n/a	n/a
Trichloroethylene (TCE)	5	5	n/a	n/a	n/a	n/a
Vinyl chloride	2	2	n/a	n/a	n/a	n/a
Xylenes,total	10000	10000	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		OW-13	OW-14	OW-21	OW-23T	OW-26
			RSA0614/K550X	A8160501	RSB0789-05	A8183910	A8183915
			1/21/09	2/15/08	2/24/09	2/20/08	2/20/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<120	n/a	<1	<4	<4
1,1,2,2-Tetrachloroethane	1	0.7	*<120*	n/a	*<1*	*<4*	*<4*
1,1,2-Trichloroethane	5	5	*<120*	n/a	<1	<4	<4
1,1-Dichloroethane	1300	340	<120	n/a	<1	<4	<4
1,1-Dichloroethene	7	7	*<120*	n/a	<1	<4	<4
1,2,4-Trimethylbenzene	17	5	**40J**	n/a	**7.7**	<4	<4
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<120*	n/a	*<1*	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<120	n/a	<1	<4	<4
1,2-Dichloroethane	5	5	*<120*	n/a	<1	<4	<4
1,2-Dichloropropane	5	5	*<120*	n/a	<1	<4	<4
1,3,5-Trimethylbenzene (Mesitylene)	17	5	*<120*	n/a	**1**	<4	<4
1,3-Dichlorobenzene	NA	NA	<120	n/a	<1	<4	<4
1,4-Dichlorobenzene	75	75	*<120*	n/a	<1	<4	<4
1,4-Dioxane (p-dioxane)	260	80	*<6200*	n/a	<40	*<160*	*<160*
2-Hexanone (Methyl butyl ketone)	NA	NA	<620	n/a	<5	<20	<20
Acetone	930	260	*<620*	n/a	**2JB**	<20	<20
Benzene	5	5	**250**	<1	**0.46JB**	<4	<4
Bromodichloromethane	80	80	*<120*	n/a	<1	<4	<4
Bromoform	80	80	*<120*	n/a	<1	<4	<4
Bromomethane	10	4	*<120*	n/a	<1	<4	<4
Carbon disulfide	30	9	*<120*	n/a	<1	<4	<4
Carbon tetrachloride	5	5	*<120*	n/a	<1	<4	<4
Chlorobenzene	100	100	*<120*	n/a	<1	<4	<4
Chloroethane	89	48	*<120*	n/a	<1	<4	<4
Chloroform	80	80	*<120*	n/a	<1	<4	<4
Chloromethane	40	20	*<120*	n/a	<1	<4	<4
cis-1,2-Dichloroethene	70	70	*<120*	n/a	<1	<4	<4
cis-1,3-Dichloropropene	NA	NA	<120	n/a	<1	<4	<4
Dibromochloromethane	80	80	*<120*	n/a	<1	<4	<4
Ethylbenzene	700	700	**25J**	n/a	**0.72J**	<4	<4

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	OW-13	OW-14	OW-21	OW-23T	OW-26
Location Identification and Sample Interval (Feet below ground surface)			OW-13	OW-14	OW-21	OW-23T	OW-26
Laboratory Sample Identification			RSA0614/K550X	A8160501	RSB0789-05	A8183910	A8183915
Date Collected			1/21/09	2/15/08	2/24/09	2/20/08	2/20/08
Isopropylbenzene (Cumene)	824	224	<120	n/a	**1.7**	<4	<4
Methyl ethyl ketone (2-Butanone)	2800	820	<620	n/a	<5	<20	<20
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	*<620*	n/a	<5	<20	<20
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**2800**	14	<1	<4	<4
Methylene chloride	5	5	**97JB**	n/a	<1	<4	<4
Naphthalene	9	3	*<120*	n/a	**1.6J**	*<4*	**3BJ**
n-Butylbenzene	80	21	**28J**	n/a	**1.9**	<4	<4
n-Propylbenzene	80	20	**34J**	n/a	**1.3**	<4	<4
P-Cymene (p-Isopropyltoluene)	NA	NA	<120	n/a	**0.81J**	<4	<4
sec-Butylbenzene	80	22	*<120*	n/a	**2.4**	**2J**	<4
Styrene	100	100	*<120*	n/a	<1	<4	<4
t-Butylbenzene	NA	NA	<120	n/a	**0.83J**	<4	**2J**
Tetrachloroethylene (PCE)	5	5	*<120*	n/a	<1	<4	<4
Toluene	1000	1000	<120	n/a	**11JB**	<4	<4
Total 1,2-Dichloroethene	NA	NA	<250	n/a	<2	<8	<8
trans-1,2-Dichloroethene	100	100	*<120*	n/a	<1	<4	<4
trans-1,3-Dichloropropene	NA	NA	<120	n/a	<1	<4	<4
Trichloroethylene (TCE)	5	5	*<120*	n/a	<1	<4	<4
Vinyl chloride	2	2	*<120*	n/a	<1	*<4*	*<4*
Xylenes,total	10000	10000	**39J**	n/a	**15J**	<12	<12

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	OW-27T	OW-28T	OW-29	OW-29
Location Identification and Sample Interval (Feet below ground surface)						
Laboratory Sample Identification			RSB0732-04	RSB0732-05	A8164012DL	RSB0643-01
Date Collected			2/23/09	2/23/09	2/16/08	2/19/09
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	<1	n/a	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1UJ*	*<1*	n/a	*<1*
1,1,2-Trichloroethane	5	5	<1UJ	<1	n/a	<1
1,1-Dichloroethane	1300	340	<1	<1	n/a	<1
1,1-Dichloroethene	7	7	<1	<1	n/a	<1
1,2,4-Trimethylbenzene	17	5	**2.1**	**0.44J**	n/a	**78**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	n/a	*<1*
1,2-Dichlorobenzene	600	600	<1	<1	n/a	<1
1,2-Dichloroethane	5	5	<1	<1	n/a	<1
1,2-Dichloropropane	5	5	<1	<1	n/a	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	**1.1**	**0.35J**	n/a	**18**
1,3-Dichlorobenzene	NA	NA	<1	<1	n/a	<1
1,4-Dichlorobenzene	75	75	<1	<1	n/a	<1
1,4-Dioxane (p-dioxane)	260	80	<40	<40	n/a	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5UJ	<5	n/a	<5
Acetone	930	260	**5.2B**	**3.8JB**	n/a	**15**
Benzene	5	5	**8.6**	**80**	**110D**	**120**
Bromodichloromethane	80	80	<1	<1	n/a	<1
Bromoform	80	80	<1UJ	<1	n/a	<1
Bromomethane	10	4	<1	<1	n/a	<1
Carbon disulfide	30	9	**0.41JB**	<1	n/a	<1
Carbon tetrachloride	5	5	<1	<1	n/a	<1
Chlorobenzene	100	100	<1UJ	<1	n/a	<1
Chloroethane	89	48	<1	<1	n/a	<1
Chloroform	80	80	<1	<1	n/a	<1
Chloromethane	40	20	<1	<1	n/a	<1
cis-1,2-Dichloroethene	70	70	<1	<1	n/a	<1
cis-1,3-Dichloropropene	NA	NA	<1	<1	n/a	<1
Dibromochloromethane	80	80	<1UJ	<1	n/a	<1
Ethylbenzene	700	700	**1.6J**	**0.57J**	n/a	**61**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	OW-27T	OW-28T	OW-29	OW-29
Location Identification and Sample Interval (Feet below ground surface)						
Laboratory Sample Identification			RSB0732-04	RSB0732-05	A8164012DL	RSB0643-01
Date Collected			2/23/09	2/23/09	2/16/08	2/19/09
Isopropylbenzene (Cumene)	824	224	**6.8J**	**8.5**	n/a	**8.3**
Methyl ethyl ketone (2-Butanone)	2800	820	**2.2J**	**1.5J**	n/a	**4.6J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	n/a	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	<1	<1
Methylene chloride	5	5	<1	<1	n/a	<1
Naphthalene	9	3	**1.7**	**2**	n/a	**120**
n-Butylbenzene	80	21	**2.1**	**1.8**	n/a	<1
n-Propylbenzene	80	20	**6**	**10**	n/a	**10**
P-Cymene (p-Isopropyltoluene)	NA	NA	**1**	**1.5**	n/a	**5.2**
sec-Butylbenzene	80	22	**2.3**	**3.5**	n/a	**2.8**
Styrene	100	100	<1UJ	<1	n/a	<1
t-Butylbenzene	NA	NA	**1.3**	**2**	n/a	**0.56J**
Tetrachloroethylene (PCE)	5	5	<1UJ	<1	n/a	<1
Toluene	1000	1000	**0.98J**	**3J**	n/a	**66**
Total 1,2-Dichloroethene	NA	NA	<2	<2	n/a	<2
trans-1,2-Dichloroethene	100	100	<1	<1	n/a	<1
trans-1,3-Dichloropropene	NA	NA	<1UJ	<1	n/a	<1
Trichloroethylene (TCE)	5	5	<1	<1	n/a	<1
Vinyl chloride	2	2	<1	<1	n/a	<1
Xylenes,total	10000	10000	**7.4J**	**4.8J**	n/a	**250**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		OW-30	OW-31	OW-31	OW-32
			RSB0643-02	A8160506DL	RSB0643-03	A8160502
			2/19/09	2/15/08	2/19/09	2/15/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1UJ	n/a	<1	n/a
1,1,2,2-Tetrachloroethane	1	0.7	*<1UJ*	n/a	*<1*	n/a
1,1,2-Trichloroethane	5	5	<1UJ	n/a	<1	n/a
1,1-Dichloroethane	1300	340	<1UJ	n/a	<1	n/a
1,1-Dichloroethene	7	7	<1UJ	n/a	<1	n/a
1,2,4-Trimethylbenzene	17	5	**0.69J**	n/a	**1.4**	n/a
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1UJ*	n/a	*<1*	n/a
1,2-Dichlorobenzene	600	600	<1UJ	n/a	<1	n/a
1,2-Dichloroethane	5	5	<1UJ	n/a	<1	n/a
1,2-Dichloropropane	5	5	<1UJ	n/a	<1	n/a
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1UJ	n/a	**0.86J**	n/a
1,3-Dichlorobenzene	NA	NA	<1UJ	n/a	<1	n/a
1,4-Dichlorobenzene	75	75	<1UJ	n/a	<1	n/a
1,4-Dioxane (p-dioxane)	260	80	<40UJ	n/a	<40	n/a
2-Hexanone (Methyl butyl ketone)	NA	NA	<5UJ	n/a	<5	n/a
Acetone	930	260	<5UJ	n/a	**9.6**	n/a
Benzene	5	5	**3.9J**	**180D**	**120**	**37**
Bromodichloromethane	80	80	<1UJ	n/a	<1	n/a
Bromoform	80	80	<1UJ	n/a	<1	n/a
Bromomethane	10	4	<1UJ	n/a	<1	n/a
Carbon disulfide	30	9	<1UJ	n/a	<1	n/a
Carbon tetrachloride	5	5	<1UJ	n/a	<1	n/a
Chlorobenzene	100	100	<1UJ	n/a	<1	n/a
Chloroethane	89	48	<1UJ	n/a	<1	n/a
Chloroform	80	80	<1UJ	n/a	<1	n/a
Chloromethane	40	20	<1UJ	n/a	<1	n/a
cis-1,2-Dichloroethene	70	70	<1UJ	n/a	<1	n/a
cis-1,3-Dichloropropene	NA	NA	<1UJ	n/a	<1	n/a
Dibromochloromethane	80	80	<1UJ	n/a	<1	n/a
Ethylbenzene	700	700	<1UJ	n/a	**1.8**	n/a

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		OW-30	OW-31	OW-31	OW-32
			RSB0643-02	A8160506DL	RSB0643-03	A8160502
			2/19/09	2/15/08	2/19/09	2/15/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Isopropylbenzene (Cumene)	824	224	**2.1J**	n/a	**34**	n/a
Methyl ethyl ketone (2-Butanone)	2800	820	<5UJ	n/a	**3.8J**	n/a
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5UJ	n/a	<5	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**50J**	<1	**43**	<1
Methylene chloride	5	5	<1UJ	n/a	<1	n/a
Naphthalene	9	3	**1.1J**	n/a	**0.81J**	n/a
n-Butylbenzene	80	21	<1UJ	n/a	**7**	n/a
n-Propylbenzene	80	20	**0.63J**	n/a	**45**	n/a
P-Cymene (p-Isopropyltoluene)	NA	NA	<1UJ	n/a	**5.5**	n/a
sec-Butylbenzene	80	22	**0.73J**	n/a	**9.2**	n/a
Styrene	100	100	**<1UJ**	n/a	<1	n/a
t-Butylbenzene	NA	NA	**1.8J**	n/a	**4.2**	n/a
Tetrachloroethylene (PCE)	5	5	<1UJ	n/a	<1	n/a
Toluene	1000	1000	**0.56J**	n/a	**4.6**	n/a
Total 1,2-Dichloroethene	NA	NA	<2UJ	n/a	<2	n/a
trans-1,2-Dichloroethene	100	100	<1UJ	n/a	<1	n/a
trans-1,3-Dichloropropene	NA	NA	<1UJ	n/a	<1	n/a
Trichloroethylene (TCE)	5	5	<1UJ	n/a	<1	n/a
Vinyl chloride	2	2	<1UJ	n/a	<1	n/a
Xylenes,total	10000	10000	**1J**	n/a	**16**	n/a

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		OW-32	OW-33	OW-35	OW-36
			RSB0643-04	RSB0643-06	RSB0789-06	RSB0691-03
			2/19/09	2/19/09	2/24/09	2/20/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	Residential Scenario				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	<1	<1	<8D
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<1*	*<8D*
1,1,2-Trichloroethane	5	5	<1	<1	<1	*<8D*
1,1-Dichloroethane	1300	340	<1	<1	<1	<8D
1,1-Dichloroethene	7	7	<1	<1	<1	*<8D*
1,2,4-Trimethylbenzene	17	5	<1	<1	**0.37J**	**14D**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	*<1*	*<8D*
1,2-Dichlorobenzene	600	600	<1	<1	<1	<8D
1,2-Dichloroethane	5	5	<1	<1	<1	*<8D*
1,2-Dichloropropane	5	5	<1	<1	<1	*<8D*
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<1	<1	**13D**
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<8D
1,4-Dichlorobenzene	75	75	<1	<1	<1	<8D
1,4-Dioxane (p-dioxane)	260	80	<40	<40	<40	*<320D*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<5	<40D
Acetone	930	260	**5.4**	<5	**5.8B**	<40D
Benzene	5	5	**35**	<1	**1.3B**	**45D**
Bromodichloromethane	80	80	<1	<1	<1	<8D
Bromoform	80	80	<1	<1	<1	<8D
Bromomethane	10	4	<1	<1	<1	*<8D*
Carbon disulfide	30	9	<1	<1	<1	<8D
Carbon tetrachloride	5	5	<1	<1	<1	*<8D*
Chlorobenzene	100	100	<1	<1	<1	<8D
Chloroethane	89	48	<1	<1	<1	<8D
Chloroform	80	80	<1	<1	<1	<8D
Chloromethane	40	20	<1	<1	<1	<8D
cis-1,2-Dichloroethene	70	70	<1	<1	<1	<8D
cis-1,3-Dichloropropene	NA	NA	<1	<1	<1	<8D
Dibromochloromethane	80	80	<1	<1	<1	<8D
Ethylbenzene	700	700	**0.55J**	<1	**0.4J**	**10DJ**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	OW-32	OW-33	OW-35	OW-36
Location Identification and Sample Interval (Feet below ground surface)			OW-32	OW-33	OW-35	OW-36
Laboratory Sample Identification			RSB0643-04	RSB0643-06	RSB0789-06	RSB0691-03
Date Collected			2/19/09	2/19/09	2/24/09	2/20/09
Isopropylbenzene (Cumene)	824	224	**11**	**1.6**	**4**	**19D**
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	<5	<40D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<5	<40D
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**31**	<1	<1	<8D
Methylene chloride	5	5	<1	<1	<1	*<8D*
Naphthalene	9	3	**7.9**	<1	**1.7J**	**64DJ**
n-Butylbenzene	80	21	**3.5**	<1	**2.2**	<8D
n-Propylbenzene	80	20	**13**	**0.76J**	**5.6**	**19D**
P-Cymene (p-Isopropyltoluene)	NA	NA	**1.1**	<1	**0.98J**	**7.9DJ**
sec-Butylbenzene	80	22	**6.1**	**2.8**	**1.8**	**6.5DJ**
Styrene	100	100	<1	<1	<1	<8D
t-Butylbenzene	NA	NA	**3**	**1.8**	**0.88J**	<8D
Tetrachloroethylene (PCE)	5	5	<1	<1	<1	*<8D*
Toluene	1000	1000	**1.5**	**2**	**0.61JB**	**48DJ**
Total 1,2-Dichloroethene	NA	NA	<2	<2	<2	<16
trans-1,2-Dichloroethene	100	100	<1	<1	**0.25J**	<8D
trans-1,3-Dichloropropene	NA	NA	<1	<1	<1	<8D
Trichloroethylene (TCE)	5	5	<1	<1	<1	*<8D*
Vinyl chloride	2	2	<1	<1	<1	*<8D*
Xylenes,total	10000	10000	**3.1**	**3.4**	**1.2J**	**110DJ**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		OW-37	OW-39	SB-08	SB-09	SB-11
			A8164004DL	A8164013	A8184013	A8175810	A8175814
			2/15/08	2/16/08	2/22/08	2/19/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	Residential Scenario					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	n/a	n/a	<20	<4	<1
1,1,2,2-Tetrachloroethane	1	0.7	n/a	n/a	*<20*	*<4*	*<1*
1,1,2-Trichloroethane	5	5	n/a	n/a	*<20*	<4	<1
1,1-Dichloroethane	1300	340	n/a	n/a	<20	<4	<1
1,1-Dichloroethene	7	7	n/a	n/a	*<20*	<4	<1
1,2,4-Trimethylbenzene	17	5	n/a	n/a	*<20*	<4	**8**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	n/a	n/a	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	600	600	n/a	n/a	<20	<4	<1
1,2-Dichloroethane	5	5	n/a	n/a	*<20*	<4	<1
1,2-Dichloropropane	5	5	n/a	n/a	*<20*	<4	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	n/a	n/a	*<20*	<4	**4**
1,3-Dichlorobenzene	NA	NA	n/a	n/a	<20	<4	<1
1,4-Dichlorobenzene	75	75	n/a	n/a	<20	<4	<1
1,4-Dioxane (p-dioxane)	260	80	n/a	n/a	*<800*	*<160*	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	n/a	n/a	<100	<20	<5
Acetone	930	260	n/a	n/a	<100	<20	**6**
Benzene	5	5	**810D**	**2.7**	**10J**	**240**	**21**
Bromodichloromethane	80	80	n/a	n/a	<20	<4	<1
Bromoform	80	80	n/a	n/a	<20	<4	<1
Bromomethane	10	4	n/a	n/a	*<20*	<4	<1
Carbon disulfide	30	9	n/a	n/a	*<20*	<4	<1
Carbon tetrachloride	5	5	n/a	n/a	*<20*	<4	<1
Chlorobenzene	100	100	n/a	n/a	<20	<4	<1
Chloroethane	89	48	n/a	n/a	<20	<4	<1
Chloroform	80	80	n/a	n/a	<20	<4	<1
Chloromethane	40	20	n/a	n/a	<20	<4	<1
cis-1,2-Dichloroethene	70	70	n/a	n/a	<20	<4	<1
cis-1,3-Dichloropropene	NA	NA	n/a	n/a	<20	<4	<1
Dibromochloromethane	80	80	n/a	n/a	<20	<4	<1
Ethylbenzene	700	700	n/a	n/a	<20	**26**	**3**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	OW-37	OW-39	SB-08	SB-09	SB-11
Location Identification and Sample Interval (Feet below ground surface)			OW-37	OW-39	SB-08	SB-09	SB-11
Laboratory Sample Identification			A8164004DL	A8164013	A8184013	A8175810	A8175814
Date Collected			2/15/08	2/16/08	2/22/08	2/19/08	2/19/08
Isopropylbenzene (Cumene)	824	224	n/a	n/a	<20	**6**	**0.5J**
Methyl ethyl ketone (2-Butanone)	2800	820	n/a	n/a	<100	<20	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	n/a	n/a	*<100*	<20	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**1700D**	<1	<20	<4	<1
Methylene chloride	5	5	n/a	n/a	*<20*	<4	<1
Naphthalene	9	3	n/a	n/a	*<20*	**54**	**6**
n-Butylbenzene	80	21	n/a	n/a	<20	<4	<1
n-Propylbenzene	80	20	n/a	n/a	<20	**5**	**1**
P-Cymene (p-Isopropyltoluene)	NA	NA	n/a	n/a	<20	<4	<1
sec-Butylbenzene	80	22	n/a	n/a	<20	<4	<1
Styrene	100	100	n/a	n/a	<20	<4	<1
t-Butylbenzene	NA	NA	n/a	n/a	<20	<4	<1
Tetrachloroethylene (PCE)	5	5	n/a	n/a	*<20*	<4	<1
Toluene	1000	1000	n/a	n/a	<20	**15**	**2**
Total 1,2-Dichloroethene	NA	NA	n/a	n/a	<40	<8	<2
trans-1,2-Dichloroethene	100	100	n/a	n/a	<20	<4	<1
trans-1,3-Dichloropropene	NA	NA	n/a	n/a	<20	<4	<1
Trichloroethylene (TCE)	5	5	n/a	n/a	*<20*	<4	<1
Vinyl chloride	2	2	n/a	n/a	*<20*	*<4*	<1
Xylenes,total	10000	10000	n/a	n/a	<60	**22**	**6**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	SB-17	SB-30	SB-36	SB-37	SB-38
Location Identification and Sample Interval (Feet below ground surface)			SB-17	SB-30	SB-36	SB-37	SB-38
Laboratory Sample Identification			A8183916/DL	A8175905	A8175816	A8175815	A8175809
Date Collected			2/20/08	2/19/08	2/19/08	2/19/08	2/19/08
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<5	<4	<4	<4	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<5*	*<4*	*<4*	*<4*	*<1*
1,1,2-Trichloroethane	5	5	*<5*	<4	<4	<4	<1
1,1-Dichloroethane	1300	340	<5	<4	<4	<4	<1
1,1-Dichloroethene	7	7	<5	<4	<4	<4	<1
1,2,4-Trimethylbenzene	17	5	**220D**	<4	<4	4	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<5	<4	<4	<4	<1
1,2-Dichloroethane	5	5	<5	<4	<4	<4	<1
1,2-Dichloropropane	5	5	<5	<4	<4	<4	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	**63D**	<4	<4	**2J**	<1
1,3-Dichlorobenzene	NA	NA	<5	<4	<4	<4	<1
1,4-Dichlorobenzene	75	75	<5	<4	<4	<4	<1
1,4-Dioxane (p-dioxane)	260	80	<200	*<160*	*<160*	*<160*	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<25	<20	<20	<20	<5
Acetone	930	260	**35**	<20	<20	<20	<5
Benzene	5	5	**980D**	**18**	240	**120**	<1
Bromodichloromethane	80	80	<5	<4	<4	<4	<1
Bromoform	80	80	<5	<4	<4	<4	<1
Bromomethane	10	4	<5	<4	<4	<4	<1
Carbon disulfide	30	9	**17**	<4	<4	<4	<1
Carbon tetrachloride	5	5	<5	<4	<4	<4	<1
Chlorobenzene	100	100	<5	<4	<4	<4	<1
Chloroethane	89	48	<5	<4	<4	<4	<1
Chloroform	80	80	<5	<4	<4	<4	<1
Chloromethane	40	20	<5	<4	<4	<4	<1
cis-1,2-Dichloroethene	70	70	<5	<4	<4	<4	<1
cis-1,3-Dichloropropene	NA	NA	<5	<4	<4	<4	<1
Dibromochloromethane	80	80	<5	<4	<4	<4	<1
Ethylbenzene	700	700	**230D**	**4**	**4**	**10**	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		SB-17	SB-30	SB-36	SB-37	SB-38
			A8183916/DL	A8175905	A8175816	A8175815	A8175809
			2/20/08	2/19/08	2/19/08	2/19/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	**36D**	**3J**	**31**	**32**	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<25	<20	<20	<20	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<25	<20	<20	<20	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<5	<4	**86**	<4	<1
Methylene chloride	5	5	<5	<4	<4	<4	<1
Naphthalene	9	3	**77B**	**6**	**39**	**32**	<1
n-Butylbenzene	80	21	**7**	<4	**5**	**9**	<1
n-Propylbenzene	80	20	**36D**	**4**	**36**	**43**	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	**6**	<4	**5**	<4	<1
sec-Butylbenzene	80	22	**6**	<4	**6**	**15**	<1
Styrene	100	100	<5	<4	<4	<4	<1
t-Butylbenzene	NA	NA	**3J**	<4	**3J**	**6**	<1
Tetrachloroethylene (PCE)	5	5	<5	<4	<4	<4	<1
Toluene	1000	1000	**64**	<4	**6**	**12**	<1
Total 1,2-Dichloroethene	NA	NA	<10	<8	<8	<8	<2
trans-1,2-Dichloroethene	100	100	<5	<4	<4	<4	<1
trans-1,3-Dichloropropene	NA	NA	<5	<4	<4	<4	<1
Trichloroethylene (TCE)	5	5	<5	<4	<4	<4	<1
Vinyl chloride	2	2	<5	<4	<4	<4	<1
Xylenes,total	10000	10000	**440D**	<12	**12**	**17**	<3

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		SB-38	SB-538 (DUP of SB-38)	TW-03	TW-05
			RSB0789-01	RSB0789-02	A8169701/DL	A8175805
			2/24/09	2/24/09	2/18/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	<1	<4	<4
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<4*	*<4*
1,1,2-Trichloroethane	5	5	<1	<1	<4	<4
1,1-Dichloroethane	1300	340	<1	<1	<4	<4
1,1-Dichloroethene	7	7	<1	<1	<4	<4
1,2,4-Trimethylbenzene	17	5	<1	<1	**140**	<4
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<1	<1	<4	<4
1,2-Dichloroethane	5	5	<1	<1	<4	<4
1,2-Dichloropropane	5	5	<1	<1	<4	<4
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<1	**28**	<4
1,3-Dichlorobenzene	NA	NA	<1	<1	<4	<4
1,4-Dichlorobenzene	75	75	<1	<1	<4	<4
1,4-Dioxane (p-dioxane)	260	80	<40	<40	*<160*	*<160*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<20	<20
Acetone	930	260	**6.3B**	**11B**	<20	<20
Benzene	5	5	<1	<1	**160**	**18**
Bromodichloromethane	80	80	<1	<1	<4	<4
Bromoform	80	80	<1	<1	<4	<4
Bromomethane	10	4	<1	<1	<4	<4
Carbon disulfide	30	9	<1	**0.27J**	<4	<4
Carbon tetrachloride	5	5	<1	<1	<4	<4
Chlorobenzene	100	100	<1	<1	<4	<4
Chloroethane	89	48	<1	<1	<4	<4
Chloroform	80	80	<1	<1	<4	<4
Chloromethane	40	20	<1	<1	<4	<4
cis-1,2-Dichloroethene	70	70	<1	<1	<4	<4
cis-1,3-Dichloropropene	NA	NA	<1	<1	<4	<4
Dibromochloromethane	80	80	<1	<1	<4	<4
Ethylbenzene	700	700	<1	**0.25J**	**10**	**4**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		SB-38	SB-538 (DUP of SB-38)	TW-03	TW-05
			RSB0789-01	RSB0789-02	A8169701/DL	A8175805
			2/24/09	2/24/09	2/18/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	Residential Scenario				
Isopropylbenzene (Cumene)	824	224	<1	<1	<4	**3J**
Methyl ethyl ketone (2-Butanone)	2800	820	<5	**2.4J**	<20	<20
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<20	<20
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	**450D**	<4
Methylene chloride	5	5	<1	<1	<4	**2J**
Naphthalene	9	3	<1	<1	**20D**	**7**
n-Butylbenzene	80	21	<1	<1	<4	<4
n-Propylbenzene	80	20	<1	<1	**4**	**4**
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<1	<4	<4
sec-Butylbenzene	80	22	<1	<1	<4	<4
Styrene	100	100	<1	<1	<4	<4
t-Butylbenzene	NA	NA	<1	<1	<4	<4
Tetrachloroethylene (PCE)	5	5	<1	<1	<4	<4
Toluene	1000	1000	<1	<1	**9D**	<4
Total 1,2-Dichloroethene	NA	NA	<2	<2	<8	<8
trans-1,2-Dichloroethene	100	100	<1	<1	<4	<4
trans-1,3-Dichloropropene	NA	NA	<1	<1	<4	<4
Trichloroethylene (TCE)	5	5	<1	<1	<4	<4
Vinyl chloride	2	2	<1	<1	<4	<4
Xylenes,total	10000	10000	<2	<2	**230**	<12

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-07	TW-10	TW-11	TW-12	TW-13
			A8169705	A8175806	A8175803	A8169703	A8175802
			2/18/08	2/19/08	2/19/08	2/18/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<4	<4	<20	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<4*	*<4*	*<20*	*<1*
1,1,2-Trichloroethane	5	5	<1	<4	<4	*<20*	<1
1,1-Dichloroethane	1300	340	<1	<4	<4	<20	<1
1,1-Dichloroethene	7	7	<1	<4	<4	*<20*	<1
1,2,4-Trimethylbenzene	17	5	<1	<4	<4	**130**	**8**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<1	<4	<4	<20	<1
1,2-Dichloroethane	5	5	<1	<4	<4	*<20*	<1
1,2-Dichloropropane	5	5	<1	<4	<4	*<20*	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<4	<4	**110**	**3**
1,3-Dichlorobenzene	NA	NA	<1	<4	<4	<20	<1
1,4-Dichlorobenzene	75	75	<1	<4	<4	<20	<1
1,4-Dioxane (p-dioxane)	260	80	<40	*<160*	*<160*	<800	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<20	<20	<100	<5
Acetone	930	260	<5	<20	<20	<100	<5
Benzene	5	5	<1	<4	<4	**1400**	**560D**
Bromodichloromethane	80	80	<1	<4	<4	<20	<1
Bromoform	80	80	<1	<4	<4	<20	<1
Bromomethane	10	4	<1	<4	<4	*<20*	<1
Carbon disulfide	30	9	<1	<4	<4	*<20*	<1
Carbon tetrachloride	5	5	<1	<4	<4	*<20*	<1
Chlorobenzene	100	100	<1	<4	<4	<20	<1
Chloroethane	89	48	<1	<4	<4	<20	<1
Chloroform	80	80	<1	<4	<4	<20	<1
Chloromethane	40	20	<1	<4	<4	<20	<1
cis-1,2-Dichloroethene	70	70	<1	<4	<4	<20	<1
cis-1,3-Dichloropropene	NA	NA	<1	<4	<4	<20	<1
Dibromochloromethane	80	80	<1	<4	<4	<20	<1
Ethylbenzene	700	700	<1	<4	<4	**170**	**3**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-07	TW-10	TW-11	TW-12	TW-13
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A8169705	A8175806	A8175803	A8169703	A8175802
Date Collected			2/18/08	2/19/08	2/19/08	2/18/08	2/19/08
Isopropylbenzene (Cumene)	824	224	<1	**2J**	<4	<20	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<20	<20	<100	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<20	<20	*<100*	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**45**	**66**	<4	<20	**170D**
Methylene chloride	5	5	<1	<4	<4	*<20*	<1
Naphthalene	9	3	<1	**3J**	**2J**	**18J**	**2**
n-Butylbenzene	80	21	<1	<4	<4	<20	<1
n-Propylbenzene	80	20	<1	<4	<4	<20	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<4	<4	<20	**0.7J**
sec-Butylbenzene	80	22	<1	<4	<4	<20	<1
Styrene	100	100	<1	<4	<4	<20	<1
t-Butylbenzene	NA	NA	**0.7J**	<4	<4	<20	<1
Tetrachloroethylene (PCE)	5	5	<1	<4	<4	*<20*	<1
Toluene	1000	1000	<1	<4	<4	**32**	**3**
Total 1,2-Dichloroethene	NA	NA	<2	<8	<8	<40	<2
trans-1,2-Dichloroethene	100	100	<1	<4	<4	<20	<1
trans-1,3-Dichloropropene	NA	NA	<1	<4	<4	<20	<1
Trichloroethylene (TCE)	5	5	<1	<4	<4	*<20*	<1
Vinyl chloride	2	2	<1	*<4*	*<4*	*<20*	<1
Xylenes,total	10000	10000	<3	<12	<12	**380**	**8**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-14	TW-14-50 (DUP of TW-14)	TW-15	TW-16	TW-17
			A8175807	A8175808	A8175818	A8175804	A8169707
			2/19/08	2/19/08	2/19/08	2/19/08	2/18/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<1	<4	<4	<4
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<4*	*<4*	*<4*
1,1,2-Trichloroethane	5	5	<1	<1	<4	<4	<4
1,1-Dichloroethane	1300	340	<1	<1	<4	<4	<4
1,1-Dichloroethene	7	7	<1	<1	<4	<4	<4
1,2,4-Trimethylbenzene	17	5	**0.7J**	**0.6J**	<4	**17**	<4
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<1	<1	<4	<4	<4
1,2-Dichloroethane	5	5	<1	<1	<4	<4	<4
1,2-Dichloropropane	5	5	<1	<1	<4	<4	<4
1,3,5-Trimethylbenzene (Mesitylene)	17	5	**2**	**2**	<4	**7**	<4
1,3-Dichlorobenzene	NA	NA	<1	<1	<4	<4	<4
1,4-Dichlorobenzene	75	75	<1	<1	<4	<4	<4
1,4-Dioxane (p-dioxane)	260	80	<40	<40	*<160*	*<160*	*<160*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<20	<20	<20
Acetone	930	260	<5	<5	<20	<20	<20
Benzene	5	5	**32**	**35D**	**10**	**3000D**	<4
Bromodichloromethane	80	80	<1	<1	<4	<4	<4
Bromoform	80	80	<1	<1	<4	<4	<4
Bromomethane	10	4	<1	<1	<4	<4	<4
Carbon disulfide	30	9	<1	<1	<4	<4	<4
Carbon tetrachloride	5	5	<1	<1	<4	<4	<4
Chlorobenzene	100	100	<1	<1	<4	<4	<4
Chloroethane	89	48	<1	<1	<4	<4	<4
Chloroform	80	80	**2**	<1	<4	<4	<4
Chloromethane	40	20	<1	<1	<4	<4	<4
cis-1,2-Dichloroethene	70	70	<1	<1	<4	<4	<4
cis-1,3-Dichloropropene	NA	NA	<1	<1	<4	<4	<4
Dibromochloromethane	80	80	<1	<1	<4	<4	<4
Ethylbenzene	700	700	**89**	**100D**	<4	**15**	<4

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-14	TW-14-50 (DUP of TW-14)	TW-15	TW-16	TW-17
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A8175807	A8175808	A8175818	A8175804	A8169707
Date Collected			2/19/08	2/19/08	2/19/08	2/19/08	2/18/08
Isopropylbenzene (Cumene)	824	224	**22**	**29D**	<4	**5**	<4
Methyl ethyl ketone (2-Butanone)	2800	820	**3J**	<5	<20	<20	<20
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<20	<20	<20
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	<4	**1900D**	<4
Methylene chloride	5	5	<1	<1	<4	<4	<4
Naphthalene	9	3	**37**	**48**	**2J**	**66**	<4
n-Butylbenzene	80	21	**9**	**11**	<4	<4	<4
n-Propylbenzene	80	20	**65**	**86D**	<4	**7**	<4
P-Cymene (p-Isopropyltoluene)	NA	NA	**1**	**1**	<4	<4	<4
sec-Butylbenzene	80	22	**6**	**8**	<4	<4	<4
Styrene	100	100	<1	<1	<4	<4	<4
t-Butylbenzene	NA	NA	<1	<1	<4	<4	<4
Tetrachloroethylene (PCE)	5	5	<1	<1	<4	<4	<4
Toluene	1000	1000	**4**	**4**	<4	**20**	<4
Total 1,2-Dichloroethene	NA	NA	<2	<2	<8	<8	<8
trans-1,2-Dichloroethene	100	100	<1	<1	<4	<4	<4
trans-1,3-Dichloropropene	NA	NA	<1	<1	<4	<4	<4
Trichloroethylene (TCE)	5	5	<1	<1	<4	<4	<4
Vinyl chloride	2	2	<1	<1	<4	<4	<4
Xylenes,total	10000	10000	**27**	**33**	<12	**80**	<12

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-18	TW-19	TW-20	TW-21	TW-22
	Laboratory Sample Identification		A8175817	A8169702/DL	A8169710	A8169708	A8175903
	Date Collected		2/19/08	2/18/08	2/18/08	2/18/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	Residential Scenario					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<4	<4	<4	<4
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<4*	*<4*	*<4*	*<4*
1,1,2-Trichloroethane	5	5	<1	<4	<4	<4	<4
1,1-Dichloroethane	1300	340	<1	<4	<4	<4	<4
1,1-Dichloroethene	7	7	<1	<4	<4	<4	<4
1,2,4-Trimethylbenzene	17	5	<1	**310**	<4	<4	<4
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<1	<4	<4	<4	<4
1,2-Dichloroethane	5	5	<1	<4	<4	<4	<4
1,2-Dichloropropane	5	5	<1	<4	<4	<4	<4
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	**78D**	<4	<4	<4
1,3-Dichlorobenzene	NA	NA	<1	<4	<4	<4	<4
1,4-Dichlorobenzene	75	75	<1	<4	<4	<4	<4
1,4-Dioxane (p-dioxane)	260	80	<40	*<160*	*<160*	*<160*	*<160*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<20	<20	<20	<20
Acetone	930	260	<5	<20	<20	<20	<20
Benzene	5	5	<1	**2300D**	<4	<4	<4
Bromodichloromethane	80	80	<1	<4	<4	<4	<4
Bromoform	80	80	<1	<4	<4	<4	<4
Bromomethane	10	4	<1	<4	<4	<4	<4
Carbon disulfide	30	9	<1	<4	<4	<4	<4
Carbon tetrachloride	5	5	<1	<4	<4	<4	<4
Chlorobenzene	100	100	<1	<4	<4	<4	<4
Chloroethane	89	48	<1	<4	<4	<4	<4
Chloroform	80	80	<1	<4	<4	<4	<4
Chloromethane	40	20	<1	<4	<4	<4	<4
cis-1,2-Dichloroethene	70	70	<1	<4	<4	<4	<4
cis-1,3-Dichloropropene	NA	NA	<1	<4	<4	<4	<4
Dibromochloromethane	80	80	<1	<4	<4	<4	<4
Ethylbenzene	700	700	<1	**240D**	<4	<4	<4

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-18	TW-19	TW-20	TW-21	TW-22
	Laboratory Sample Identification		A8175817	A8169702/DL	A8169710	A8169708	A8175903
	Date Collected		2/19/08	2/18/08	2/18/08	2/18/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	<1	**21**	<4	<4	<4
Methyl ethyl ketone (2-Butanone)	2800	820	<5	**16J**	<20	<20	<20
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<20	<20	<20	<20
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<4	<4	<4	<4
Methylene chloride	5	5	<1	<4	<4	<4	<4
Naphthalene	9	3	**1**	**110**	<4	<4	<4
n-Butylbenzene	80	21	<1	**14**	<4	<4	<4
n-Propylbenzene	80	20	<1	**51**	<4	<4	<4
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<4	<4	<4	<4
sec-Butylbenzene	80	22	<1	**6**	<4	<4	<4
Styrene	100	100	<1	<4	<4	<4	<4
t-Butylbenzene	NA	NA	<1	<4	<4	<4	<4
Tetrachloroethylene (PCE)	5	5	<1	<4	<4	<4	<4
Toluene	1000	1000	<1	**55D**	<4	<4	<4
Total 1,2-Dichloroethene	NA	NA	<2	<8	<8	<8	<8
trans-1,2-Dichloroethene	100	100	<1	<4	<4	<4	<4
trans-1,3-Dichloropropene	NA	NA	<1	<4	<4	<4	<4
Trichloroethylene (TCE)	5	5	<1	<4	<4	<4	<4
Vinyl chloride	2	2	<1	<4	<4	<4	<4
Xylenes,total	10000	10000	<3	**730D**	<12	<12	<12

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-23D	TW-24	TW-24D	TW-524 (DUP of TW-24D)	TW-25
			RSB0691-05	A8175902	RSB0604-01	RSB0604-02	A8169709
			2/20/09	2/19/08	2/18/09	2/18/09	2/18/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<4D	<4	<1	<1	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<4D*	*<4*	*<1*	*<1*	*<1*
1,1,2-Trichloroethane	5	5	<4D	<4	<1	<1	<1
1,1-Dichloroethane	1300	340	<4D	<4	<1	<1	<1
1,1-Dichloroethene	7	7	<4D	<4	<1	<1	<1
1,2,4-Trimethylbenzene	17	5	<4D	<4	<1	<1	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<4D*	<0.01	*<1*	*<1*	<0.01
1,2-Dichlorobenzene	600	600	<4D	<4	<1	<1	<1
1,2-Dichloroethane	5	5	<4D	<4	<1	<1	<1
1,2-Dichloropropane	5	5	<4D	<4	<1	<1	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<4D	<4	<1	<1	<1
1,3-Dichlorobenzene	NA	NA	<4D	<4	<1	<1	<1
1,4-Dichlorobenzene	75	75	<4D	<4	<1	<1	<1
1,4-Dioxane (p-dioxane)	260	80	*<160D*	*<160*	<40	<40	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<20D	<20	<5	<5	<5
Acetone	930	260	<20D	<20	<5	<5	<5
Benzene	5	5	**1.8DJ**	<4	<1	<1	<1
Bromodichloromethane	80	80	<4D	<4	<1	<1	<1
Bromoform	80	80	<4D	<4	<1	<1	<1
Bromomethane	10	4	<4D	<4	<1	<1	<1
Carbon disulfide	30	9	<4D	<4	<1	<1	<1
Carbon tetrachloride	5	5	<4D	<4	<1	<1	<1
Chlorobenzene	100	100	<4D	<4	<1	<1	<1
Chloroethane	89	48	<4D	<4	<1	<1	<1
Chloroform	80	80	<4D	<4	<1	<1	<1
Chloromethane	40	20	<4D	<4	<1	<1	<1
cis-1,2-Dichloroethene	70	70	<4D	<4	<1	<1	<1
cis-1,3-Dichloropropene	NA	NA	<4D	<4	<1	<1	<1
Dibromochloromethane	80	80	<4D	<4	<1	<1	<1
Ethylbenzene	700	700	<4D	<4	<1	<1	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-23D	TW-24	TW-24D	TW-524 (DUP of TW-24D)	TW-25
			RSB0691-05	A8175902	RSB0604-01	RSB0604-02	A8169709
			2/20/09	2/19/08	2/18/09	2/18/09	2/18/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	<4D	<4	<1	<1	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<20D	<20	<5	<5	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<20D	<20	<5	<5	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<4D	**14**	**11**	**11**	**0.6J**
Methylene chloride	5	5	<4D	<4	<1	<1	<1
Naphthalene	9	3	*<4D*	*<4*	**0.5J**	**0.47J**	<1
n-Butylbenzene	80	21	<4D	<4	<1	<1	<1
n-Propylbenzene	80	20	<4D	<4	<1	<1	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	<4D	<4	<1	<1	<1
sec-Butylbenzene	80	22	<4D	<4	<1	<1	<1
Styrene	100	100	<4D	<4	<1	<1	<1
t-Butylbenzene	NA	NA	<4D	<4	<1	<1	<1
Tetrachloroethylene (PCE)	5	5	<4D	<4	<1	<1	<1
Toluene	1000	1000	<4D	<4	<1	<1	<1
Total 1,2-Dichloroethene	NA	NA	<8D	<8	<2	<2	<2
trans-1,2-Dichloroethene	100	100	<4D	<4	<1	<1	<1
trans-1,3-Dichloropropene	NA	NA	<4D	<4	<1	<1	<1
Trichloroethylene (TCE)	5	5	<4D	<4	<1	<1	<1
Vinyl chloride	2	2	*<4D*	*<4*	<1	<1	<1
Xylenes,total	10000	10000	<8D	<12	<2	<2	<3

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-25D RSB0535-08 2/17/09	TW-27 A8175904 2/19/08	TW-27D RSB0385-04 2/11/09	TW-29 A8169711 2/18/08	TW-31 A8175901 2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<4	<1	<4	<4
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<4*	*<1*	*<4*	*<4*
1,1,2-Trichloroethane	5	5	<1	<4	<1	<4	<4
1,1-Dichloroethane	1300	340	<1	<4	<1	<4	<4
1,1-Dichloroethene	7	7	<1	<4	<1	<4	<4
1,2,4-Trimethylbenzene	17	5	<1	<4	<1	<4	<4
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	<0.01	*<1*	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<1	<4	<1	<4	<4
1,2-Dichloroethane	5	5	<1	<4	<1	<4	<4
1,2-Dichloropropane	5	5	<1	<4	<1	<4	<4
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<4	<1	<4	<4
1,3-Dichlorobenzene	NA	NA	<1	<4	<1	<4	<4
1,4-Dichlorobenzene	75	75	<1	<4	<1	<4	<4
1,4-Dioxane (p-dioxane)	260	80	<40	*<160*	<40	*<160*	*<160*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<20	<5	<20	<20
Acetone	930	260	<5	<20	<5	<20	<20
Benzene	5	5	<1	<4	**0.25J**	<4	<4
Bromodichloromethane	80	80	<1	<4	<1	<4	<4
Bromoform	80	80	<1	<4	<1	<4	<4
Bromomethane	10	4	<1	<4	<1	<4	<4
Carbon disulfide	30	9	<1	<4	<1	<4	<4
Carbon tetrachloride	5	5	<1	<4	<1	<4	<4
Chlorobenzene	100	100	<1	<4	<1	<4	<4
Chloroethane	89	48	<1	<4	<1	<4	<4
Chloroform	80	80	<1	<4	<1	<4	<4
Chloromethane	40	20	<1	<4	<1	<4	<4
cis-1,2-Dichloroethene	70	70	<1	<4	<1	<4	<4
cis-1,3-Dichloropropene	NA	NA	<1	<4	<1	<4	<4
Dibromochloromethane	80	80	<1	<4	<1	<4	<4
Ethylbenzene	700	700	<1	<4	<1	<4	<4

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-25D	TW-27	TW-27D	TW-29	TW-31
			RSB0535-08	A8175904	RSB0385-04	A8169711	A8175901
			2/17/09	2/19/08	2/11/09	2/18/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	<1	<4	<1	**4**	<4
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<20	<5	<20	<20
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<20	<5	<20	<20
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**1.3**	<4	<1	**28**	**2J**
Methylene chloride	5	5	<1	<4	<1	<4	<4
Naphthalene	9	3	<1	**2J**	<1	**4**	<4
n-Butylbenzene	80	21	<1	<4	<1	<4	<4
n-Propylbenzene	80	20	<1	<4	<1	**4**	<4
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<4	<1	<4	<4
sec-Butylbenzene	80	22	<1	<4	<1	<4	<4
Styrene	100	100	<1	<4	<1	<4	<4
t-Butylbenzene	NA	NA	<1	<4	<1	<4	<4
Tetrachloroethylene (PCE)	5	5	<1	<4	<1	<4	<4
Toluene	1000	1000	<1	<4	<1	<4	<4
Total 1,2-Dichloroethene	NA	NA	<2	<8	<2	<8	<8
trans-1,2-Dichloroethene	100	100	<1	<4	<1	<4	<4
trans-1,3-Dichloropropene	NA	NA	<1	<4	<1	<4	<4
Trichloroethylene (TCE)	5	5	<1	<4	<1	<4	<4
Vinyl chloride	2	2	<1	<4	<1	<4	<4
Xylenes,total	10000	10000	<2	<12	<2	<12	<12

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-31D	TW-32	TW-32D	TW-34	TW-35
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			RSB0535-10	A8183904	RSB0691-07	A8184008	A8169706
Date Collected			2/17/09	2/20/08	2/20/09	2/22/08	2/18/08
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<5	<4D	<1	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<5*	*<4D*	*<1*	*<1*
1,1,2-Trichloroethane	5	5	<1	<5	<4D	<1	<1
1,1-Dichloroethane	1300	340	<1	<5	<4D	<1	<1
1,1-Dichloroethene	7	7	<1	<5	<4D	<1	<1
1,2,4-Trimethylbenzene	17	5	<1	<5	<4D	<1	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	<0.01	*<4D*	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<1	<5	<4D	<1	<1
1,2-Dichloroethane	5	5	<1	<5	<4D	<1	<1
1,2-Dichloropropane	5	5	<1	<5	<4D	<1	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<5	<4D	<1	<1
1,3-Dichlorobenzene	NA	NA	<1	<5	<4D	<1	<1
1,4-Dichlorobenzene	75	75	<1	<5	<4D	<1	<1
1,4-Dioxane (p-dioxane)	260	80	<40	*<200*	*<160D*	<40	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<25	<20D	<5	<5
Acetone	930	260	<5	<25	**38D**	<5	<5
Benzene	5	5	<1	<5	**2.9DJ**	**0.5J**	<1
Bromodichloromethane	80	80	<1	<5	<4D	<1	<1
Bromoform	80	80	<1	<5	<4D	<1	<1
Bromomethane	10	4	<1	<5	<4D	<1	<1
Carbon disulfide	30	9	<1	<5	**2.2DJ**	<1	<1
Carbon tetrachloride	5	5	<1	<5	<4D	<1	<1
Chlorobenzene	100	100	<1	<5	<4D	<1	<1
Chloroethane	89	48	<1	<5	<4D	<1	<1
Chloroform	80	80	<1	<5	<4D	<1	<1
Chloromethane	40	20	<1	<5	<4D	<1	<1
cis-1,2-Dichloroethene	70	70	<1	<5	<4D	<1	<1
cis-1,3-Dichloropropene	NA	NA	<1	<5	<4D	<1	<1
Dibromochloromethane	80	80	<1	<5	<4D	<1	<1
Ethylbenzene	700	700	<1	<5	<4D	<1	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-31D	TW-32	TW-32D	TW-34	TW-35
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			RSB0535-10	A8183904	RSB0691-07	A8184008	A8169706
Date Collected			2/17/09	2/20/08	2/20/09	2/22/08	2/18/08
Isopropylbenzene (Cumene)	824	224	<1	<5	<4D	<1	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<25	<20D	<5	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<25	<20D	<5	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**38**	**490**	**230D**	**29**	**4**
Methylene chloride	5	5	<1	<5	<4D	<1	<1
Naphthalene	9	3	<1	*<5*	*<4D*	<1	<1
n-Butylbenzene	80	21	<1	<5	<4D	<1	<1
n-Propylbenzene	80	20	<1	<5	<4D	<1	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<5	<4D	<1	<1
sec-Butylbenzene	80	22	<1	<5	<4D	<1	<1
Styrene	100	100	<1	<5	<4D	<1	<1
t-Butylbenzene	NA	NA	<1	<5	<4D	<1	<1
Tetrachloroethylene (PCE)	5	5	<1	<5	<4D	<1	<1
Toluene	1000	1000	<1	<5	<4D	<1	<1
Total 1,2-Dichloroethene	NA	NA	<2	<10	<8D	<2	<2
trans-1,2-Dichloroethene	100	100	<1	<5	<4D	<1	<1
trans-1,3-Dichloropropene	NA	NA	<1	<5	<4D	<1	<1
Trichloroethylene (TCE)	5	5	<1	<5	<4D	<1	<1
Vinyl chloride	2	2	<1	*<5*	*<4D*	<1	<1
Xylenes,total	10000	10000	<2	<15	<8D	<3	<3

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-36	TW-36	TW-36	TW-38
			A8034301/DL	RSA0614/K5503	RSB0835-05	A8169704/DL
			1/9/08	1/21/09	2/25/09	2/18/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<4	*<500*	<40DUJ	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<4*	*<500*	*<40DUJ*	*<1*
1,1,2-Trichloroethane	5	5	<4	*<500*	*<40DUJ*	<1
1,1-Dichloroethane	1300	340	**13**	*<500*	<40DUJ	<1
1,1-Dichloroethene	7	7	<4	*<500*	*<40DUJ*	<1
1,2,4-Trimethylbenzene	17	5	**13**	*<500*	**30DJ**	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<4*	*<500*	*<40DUJ*	<0.01
1,2-Dichlorobenzene	600	600	<4	<500	<40DUJ	<1
1,2-Dichloroethane	5	5	<4	*<500*	*<40DUJ*	<1
1,2-Dichloropropane	5	5	<4	*<500*	*<40DUJ*	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	**3J**	*<500*	**21DJ**	<1
1,3-Dichlorobenzene	NA	NA	<4	<500	<40DUJ	<1
1,4-Dichlorobenzene	75	75	<4	*<500*	<40DUJ	<1
1,4-Dioxane (p-dioxane)	260	80	*<160*	*<25000*	*<1600DUJ*	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<20	<2500	<200DUJ	<5
Acetone	930	260	<20	*<2500*	<200DUJ	<5
Benzene	5	5	**1000D**	**1200**	**990DJ**	<1
Bromodichloromethane	80	80	<4	*<500*	<40DUJ	<1
Bromoform	80	80	<4	*<500*	<40DUJ	<1
Bromomethane	10	4	<4	*<500*	*<40DUJ*	<1
Carbon disulfide	30	9	<4	*<500*	*<40DUJ*	<1
Carbon tetrachloride	5	5	<4	*<500*	*<40DUJ*	<1
Chlorobenzene	100	100	<4	*<500*	<40DUJ	<1
Chloroethane	89	48	**36**	*<500*	<40DUJ	<1
Chloroform	80	80	<4	*<500*	<40DUJ	<1
Chloromethane	40	20	<4	*<500*	*<40DUJ*	<1
cis-1,2-Dichloroethene	70	70	<4	*<500*	<40DUJ	<1
cis-1,3-Dichloropropene	NA	NA	<4	<500	<40DUJ	<1
Dibromochloromethane	80	80	<4	*<500*	<40DUJ	<1
Ethylbenzene	700	700	**76**	**180J**	**270DJ**	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-36	TW-36	TW-36	TW-38
			A8034301/DL	RSA0614/K5503	RSB0835-05	A8169704/DL
			1/9/08	1/21/09	2/25/09	2/18/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Isopropylbenzene (Cumene)	824	224	**24**	*<500*	**40DJ**	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<20	*<2500*	<200DUJ	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<20	*<2500*	<200DUJ	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**10000D**	**7400**	**6800DJ**	**38000D**
Methylene chloride	5	5	<4	**400JB**	*<40DUJ*	<1
Naphthalene	9	3	**24**	*<500*	**120DJ**	**0.4J**
n-Butylbenzene	80	21	**4**	*<500*	*<40DUJ*	<1
n-Propylbenzene	80	20	**45**	*<500*	**90DJ**	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	<4	<500	<40DUJ	<1
sec-Butylbenzene	80	22	**5J**	*<500*	*<40DUJ*	<1
Styrene	100	100	<4	*<500*	<40DUJ	<1
t-Butylbenzene	NA	NA	<4	<500	<40DUJ	<1
Tetrachloroethylene (PCE)	5	5	<4	*<500*	*<40DUJ*	<1
Toluene	1000	1000	**21**	<500	<40DUJ	<1
Total 1,2-Dichloroethene	NA	NA	<8	<1000	<40DUJ	<2
trans-1,2-Dichloroethene	100	100	<4	*<500*	<40DUJ	<1
trans-1,3-Dichloropropene	NA	NA	<4	<500	<40DUJ	<1
Trichloroethylene (TCE)	5	5	<4	*<500*	*<40DUJ*	<1
Vinyl chloride	2	2	**8**	*<500*	*<40DUJ*	<1
Xylenes,total	10000	10000	**46**	<1000	**90DJ**	<3

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface)		TW-39	TW-40	TW-41	TW-42	TW-43
	Laboratory Sample Identification		A8183901	A8184009	A8184007	A8184003/DL	A8184002
	Date Collected		2/20/08	2/22/08	2/22/08	2/22/08	2/22/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	Residential Scenario					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<4	<1	<2	<2	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<4*	*<1*	*<2*	*<2*	*<1*
1,1,2-Trichloroethane	5	5	<4	<1	<2	<2	<1
1,1-Dichloroethane	1300	340	<4	<1	<2	<2	<1
1,1-Dichloroethene	7	7	<4	<1	<2	<2	<1
1,2,4-Trimethylbenzene	17	5	<4	<1	<2	**2**	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<4	<1	<2	<2	<1
1,2-Dichloroethane	5	5	<4	<1	<2	<2	<1
1,2-Dichloropropane	5	5	<4	<1	<2	<2	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<4	<1	<2	<2	<1
1,3-Dichlorobenzene	NA	NA	<4	<1	<2	<2	<1
1,4-Dichlorobenzene	75	75	<4	<1	<2	<2	<1
1,4-Dioxane (p-dioxane)	260	80	*<160*	<40	<80	<80	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<20	<5	<10	<10	<5
Acetone	930	260	<20	**4J**	<10	<10	**3J**
Benzene	5	5	<4	<1	**1J**	**260D**	<1
Bromodichloromethane	80	80	<4	<1	<2	<2	<1
Bromoform	80	80	<4	<1	<2	<2	<1
Bromomethane	10	4	<4	<1	<2	<2	<1
Carbon disulfide	30	9	<4	<1	<2	<2	<1
Carbon tetrachloride	5	5	<4	<1	<2	<2	<1
Chlorobenzene	100	100	<4	<1	<2	<2	<1
Chloroethane	89	48	<4	<1	<2	<2	<1
Chloroform	80	80	<4	<1	<2	<2	<1
Chloromethane	40	20	<4	<1	<2	<2	<1
cis-1,2-Dichloroethene	70	70	<4	<1	<2	<2	<1
cis-1,3-Dichloropropene	NA	NA	<4	<1	<2	<2	<1
Dibromochloromethane	80	80	<4	<1	<2	<2	<1
Ethylbenzene	700	700	<4	<1	<2	**4**	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-39	TW-40	TW-41	TW-42	TW-43
			A8183901	A8184009	A8184007	A8184003/DL	A8184002
			2/20/08	2/22/08	2/22/08	2/22/08	2/22/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	<4	**0.4J**	**2**	**13**	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<20	<5	<10	<10	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<20	<5	<10	<10	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**140**	**3**	**1J**	**7100D**	**73**
Methylene chloride	5	5	<4	<1	<2	<2	<1
Naphthalene	9	3	<4	<1	**1J**	**120**	**0.5J**
n-Butylbenzene	80	21	<4	<1	<2	**2**	<1
n-Propylbenzene	80	20	<4	**0.4J**	**1J**	**22**	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	<4	<1	<2	**0.9J**	<1
sec-Butylbenzene	80	22	<4	**0.4J**	**2**	**3**	<1
Styrene	100	100	<4	<1	<2	<2	<1
t-Butylbenzene	NA	NA	<4	**0.4J**	**1J**	<2	<1
Tetrachloroethylene (PCE)	5	5	<4	<1	<2	<2	<1
Toluene	1000	1000	<4	<1	<2	**13**	<1
Total 1,2-Dichloroethene	NA	NA	<8	<2	<4	<4	<2
trans-1,2-Dichloroethene	100	100	<4	<1	<2	<2	<1
trans-1,3-Dichloropropene	NA	NA	<4	<1	<2	<2	<1
Trichloroethylene (TCE)	5	5	<4	<1	<2	<2	<1
Vinyl chloride	2	2	<4	<1	<2	<2	<1
Xylenes,total	10000	10000	<12	<3	<6	**12**	<3

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-45	TW-46	TW-47	TW-48	TW-51
			A8183914/DL	A8183912/DL	A8183913	A8169712	A8184012
			2/20/08	2/20/08	2/20/08	2/18/08	2/22/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<10	<10	<4	<1	<2
1,1,2,2-Tetrachloroethane	1	0.7	*<10*	*<10*	*<4*	*<1*	*<2*
1,1,2-Trichloroethane	5	5	*<10*	*<10*	<4	<1	<2
1,1-Dichloroethane	1300	340	<10	<10	<4	<1	<2
1,1-Dichloroethene	7	7	*<10*	*<10*	<4	<1	<2
1,2,4-Trimethylbenzene	17	5	*<10*	**250D**	<4	<1	**6**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<10	<10	<4	<1	<2
1,2-Dichloroethane	5	5	*<10*	*<10*	<4	<1	<2
1,2-Dichloropropane	5	5	*<10*	*<10*	<4	<1	<2
1,3,5-Trimethylbenzene (Mesitylene)	17	5	*<10*	**67D**	<4	<1	**2**
1,3-Dichlorobenzene	NA	NA	<10	<10	<4	<1	<2
1,4-Dichlorobenzene	75	75	<10	<10	<4	<1	<2
1,4-Dioxane (p-dioxane)	260	80	*<400*	*<400*	*<160*	<40	<80
2-Hexanone (Methyl butyl ketone)	NA	NA	<50	<50	<20	<5	<10
Acetone	930	260	**59**	**47J**	**13J**	<5	<10
Benzene	5	5	**3100D**	**2800D**	**24**	<1	**230D**
Bromodichloromethane	80	80	<10	<10	<4	<1	<2
Bromoform	80	80	<10	<10	<4	<1	<2
Bromomethane	10	4	*<10*	*<10*	<4	<1	<2
Carbon disulfide	30	9	*<10*	*<10*	<4	<1	<2
Carbon tetrachloride	5	5	*<10*	*<10*	<4	<1	<2
Chlorobenzene	100	100	<10	<10	<4	<1	<2
Chloroethane	89	48	<10	<10	<4	<1	<2
Chloroform	80	80	<10	<10	<4	<1	<2
Chloromethane	40	20	<10	<10	<4	<1	<2
cis-1,2-Dichloroethene	70	70	<10	<10	<4	<1	<2
cis-1,3-Dichloropropene	NA	NA	<10	<10	<4	<1	<2
Dibromochloromethane	80	80	<10	<10	<4	<1	<2
Ethylbenzene	700	700	**64**	**740D**	**24**	<1	**8**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-45	TW-46	TW-47	TW-48	TW-51
			A8183914/DL	A8183912/DL	A8183913	A8169712	A8184012
			2/20/08	2/20/08	2/20/08	2/18/08	2/22/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	**23**	**58D**	**34**	<1	**15**
Methyl ethyl ketone (2-Butanone)	2800	820	<50	<50	<20	<5	<10
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<50	<50	<20	<5	<10
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**5300D**	**3200D**	<4	**28**	<2
Methylene chloride	5	5	*<10*	*<10*	<4	<1	<2
Naphthalene	9	3	**630D**	**360D**	**270**	<1	**89**
n-Butylbenzene	80	21	<10	**25**	**15**	<1	**5**
n-Propylbenzene	80	20	**34**	**130**	**110**	<1	**38**
P-Cymene (p-Isopropyltoluene)	NA	NA	<10	**6J**	<4	<1	<2
sec-Butylbenzene	80	22	<10	**12**	**3J**	<1	**4**
Styrene	100	100	<10	<10	<4	<1	<2
t-Butylbenzene	NA	NA	<10	<10	<4	<1	**1J**
Tetrachloroethylene (PCE)	5	5	*<10*	*<10*	<4	<1	<2
Toluene	1000	1000	**28**	**84D**	**3J**	<1	**6**
Total 1,2-Dichloroethene	NA	NA	<20	<20	<8	<2	<4
trans-1,2-Dichloroethene	100	100	<10	<10	<4	<1	<2
trans-1,3-Dichloropropene	NA	NA	<10	<10	<4	<1	<2
Trichloroethylene (TCE)	5	5	*<10*	*<10*	<4	<1	<2
Vinyl chloride	2	2	*<10*	*<10*	*<4*	<1	<2
Xylenes,total	10000	10000	**64**	**660D**	**9J**	<3	**27**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-52	TW-53	TW-55	TW-56	TW-56
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A8184011	A8187801	A8184010	A8169715	RSB0789-04
Date Collected			2/22/08	2/23/08	2/22/08	2/18/08	2/24/09
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<1	<40	<1	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<40*	*<1*	*<1*
1,1,2-Trichloroethane	5	5	<1	<1	*<40*	<1	<1
1,1-Dichloroethane	1300	340	<1	<1	<40	<1	<1
1,1-Dichloroethene	7	7	<1	<1	*<40*	<1	<1
1,2,4-Trimethylbenzene	17	5	**11**	**6**	**19J**	**2**	**1.4**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	<0.01	<0.01	*<1*
1,2-Dichlorobenzene	600	600	<1	<1	<40	<1	<1
1,2-Dichloroethane	5	5	<1	<1	*<40*	<1	<1
1,2-Dichloropropane	5	5	<1	<1	*<40*	<1	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	**7**	**8**	*<40*	**3**	**1.8**
1,3-Dichlorobenzene	NA	NA	<1	<1	<40	<1	<1
1,4-Dichlorobenzene	75	75	<1	<1	<40	<1	<1
1,4-Dioxane (p-dioxane)	260	80	<40	<40	*<1600*	<40	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<200	<5	<5
Acetone	930	260	<5	**28**	**920**	<5	**8.4B**
Benzene	5	5	**87**	**670D**	**79000D**	**18**	**11B**
Bromodichloromethane	80	80	<1	<1	<40	<1	<1
Bromoform	80	80	<1	<1	<40	<1	<1
Bromomethane	10	4	<1	<1	*<40*	<1	<1
Carbon disulfide	30	9	<1	<1	*<40*	<1	<1
Carbon tetrachloride	5	5	<1	<1	*<40*	<1	<1
Chlorobenzene	100	100	<1	<1	<40	<1	<1
Chloroethane	89	48	<1	<1	<40	<1	<1
Chloroform	80	80	<1	<1	<40	<1	<1
Chloromethane	40	20	<1	<1	*<40*	<1	<1
cis-1,2-Dichloroethene	70	70	<1	<1	<40	<1	<1
cis-1,3-Dichloropropene	NA	NA	<1	<1	<40	<1	<1
Dibromochloromethane	80	80	<1	<1	<40	<1	<1
Ethylbenzene	700	700	**6**	**8**	<40	**2**	**1.7J**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-52	TW-53	TW-55	TW-56	TW-56
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A8184011	A8187801	A8184010	A8169715	RSB0789-04
Date Collected			2/22/08	2/23/08	2/22/08	2/18/08	2/24/09
Isopropylbenzene (Cumene)	824	224	**11**	**0.6J**	<40	**4**	**7.4**
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	**430**	<5	**5.2**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	4J	*<200*	<5	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	*<40*	<1	<1
Methylene chloride	5	5	<1	<1	*<40*	<1	<1
Naphthalene	9	3	**29**	<1	**54**	**22**	**9.8J**
n-Butylbenzene	80	21	**6**	**6**	*<40*	<1	**2.4**
n-Propylbenzene	80	20	**18**	<1	*<40*	**4**	**7.7**
P-Cymene (p-Isopropyltoluene)	NA	NA	**7**	**4**	<40	**5**	**1.9**
sec-Butylbenzene	80	22	**4**	**0.3J**	*<40*	**1**	**2.2**
Styrene	100	100	<1	<1	<40	<1	<1
t-Butylbenzene	NA	NA	**0.9J**	**0.9J**	<40	**0.8J**	**1**
Tetrachloroethylene (PCE)	5	5	<1	<1	*<40*	<1	<1
Toluene	1000	1000	**14**	**28**	**77**	**2**	**1.3JB**
Total 1,2-Dichloroethene	NA	NA	<2	<2	<80	<2	<2
trans-1,2-Dichloroethene	100	100	<1	<1	<40	<1	<1
trans-1,3-Dichloropropene	NA	NA	<1	<1	<40	<1	<1
Trichloroethylene (TCE)	5	5	<1	<1	*<40*	<1	<1
Vinyl chloride	2	2	<1	<1	*<40*	<1	<1
Xylenes,total	10000	10000	**49**	**62**	**47J**	**9**	**5.3J**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-58	TW-60	TW-63	TW-63-51 (DUP of TW-63)	TW-64
			A8169716	A8169718/DL	A8175811	A8175812	A8169717
			2/18/08	2/18/08	2/19/08	2/19/08	2/18/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<1	<1	<1	<4
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<1*	*<1*	*<4*
1,1,2-Trichloroethane	5	5	<1	<1	<1	<1	<4
1,1-Dichloroethane	1300	340	<1	<1	<1	<1	<4
1,1-Dichloroethene	7	7	<1	<1	<1	<1	<4
1,2,4-Trimethylbenzene	17	5	**42**	**3**	<1	<1	<4
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1	<4
1,2-Dichloroethane	5	5	<1	<1	<1	<1	<4
1,2-Dichloropropane	5	5	<1	<1	<1	<1	<4
1,3,5-Trimethylbenzene (Mesitylene)	17	5	**35**	**2**	<1	<1	<4
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1	<4
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1	<4
1,4-Dioxane (p-dioxane)	260	80	<40	<40	<40	<40	*<160*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<5	<5	<20
Acetone	930	260	**45**	**8**	<5	<5	**32**
Benzene	5	5	**110D**	**250D**	<1	<1	**2J**
Bromodichloromethane	80	80	<1	<1	<1	<1	<4
Bromoform	80	80	<1	<1	<1	<1	<4
Bromomethane	10	4	<1	<1	<1	<1	<4
Carbon disulfide	30	9	**0.5J**	<1	<1	<1	<4
Carbon tetrachloride	5	5	<1	<1	<1	<1	<4
Chlorobenzene	100	100	<1	<1	<1	<1	<4
Chloroethane	89	48	<1	<1	<1	<1	<4
Chloroform	80	80	<1	<1	<1	<1	<4
Chloromethane	40	20	<1	<1	<1	<1	<4
cis-1,2-Dichloroethene	70	70	<1	<1	<1	<1	<4
cis-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1	<4
Dibromochloromethane	80	80	<1	<1	<1	<1	<4
Ethylbenzene	700	700	**99**	**17**	<1	<1	<4

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-58	TW-60	TW-63	TW-63-51 (DUP of TW-63)	TW-64
			A8169716	A8169718/DL	A8175811	A8175812	A8169717
			2/18/08	2/18/08	2/19/08	2/19/08	2/18/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	**11**	**18**	<1	<1	<4
Methyl ethyl ketone (2-Butanone)	2800	820	**10**	<5	<5	<5	**29**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<5	<5	**29**
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	<1	<1	<4
Methylene chloride	5	5	<1	<1	<1	<1	<4
Naphthalene	9	3	**59**	**98**	**1**	<1	<4
n-Butylbenzene	80	21	**8**	**4**	<1	<1	<4
n-Propylbenzene	80	20	**19**	**20**	<1	<1	<4
P-Cymene (p-Isopropyltoluene)	NA	NA	**4**	**3**	<1	<1	<4
sec-Butylbenzene	80	22	**3**	**2**	<1	<1	<4
Styrene	100	100	<1	<1	<1	<1	<4
t-Butylbenzene	NA	NA	**1**	<1	<1	<1	<4
Tetrachloroethylene (PCE)	5	5	<1	<1	<1	<1	<4
Toluene	1000	1000	**52D**	**14**	<1	<1	<4
Total 1,2-Dichloroethene	NA	NA	<2	<2	<2	<2	<8
trans-1,2-Dichloroethene	100	100	<1	<1	<1	<1	<4
trans-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1	<4
Trichloroethylene (TCE)	5	5	<1	<1	<1	<1	<4
Vinyl chloride	2	2	<1	<1	<1	<1	<4
Xylenes,total	10000	10000	**190**	**38**	<3	<3	<12

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-65	TW-67	TW-69	TW-73	TW-74
			A8169714	A8175813	A8169713	A8183902	A8184001
			2/18/08	2/19/08	2/18/08	2/20/08	2/22/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<4	<4	<1	<4	<2
1,1,2,2-Tetrachloroethane	1	0.7	*<4*	*<4*	*<1*	*<4*	*<2*
1,1,2-Trichloroethane	5	5	<4	<4	<1	<4	<2
1,1-Dichloroethane	1300	340	<4	<4	<1	<4	<2
1,1-Dichloroethene	7	7	<4	<4	<1	<4	<2
1,2,4-Trimethylbenzene	17	5	<4	**6**	<1	<4	<2
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	600	600	<4	<4	<1	<4	<2
1,2-Dichloroethane	5	5	<4	<4	<1	<4	<2
1,2-Dichloropropane	5	5	<4	<4	<1	<4	<2
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<4	<4	<1	<4	<2
1,3-Dichlorobenzene	NA	NA	<4	<4	<1	<4	<2
1,4-Dichlorobenzene	75	75	<4	<4	<1	<4	<2
1,4-Dioxane (p-dioxane)	260	80	*<160*	*<160*	<40	*<160*	<80
2-Hexanone (Methyl butyl ketone)	NA	NA	<20	**1100**	<5	<20	<10
Acetone	930	260	<20	**1300**	<5	<20	**10**
Benzene	5	5	<4	**76**	<1	<4	<2
Bromodichloromethane	80	80	<4	<4	<1	<4	<2
Bromoform	80	80	<4	<4	<1	<4	<2
Bromomethane	10	4	<4	<4	<1	<4	<2
Carbon disulfide	30	9	<4	**22**	<1	<4	<2
Carbon tetrachloride	5	5	<4	<4	<1	<4	<2
Chlorobenzene	100	100	<4	<4	<1	<4	<2
Chloroethane	89	48	<4	<4	<1	<4	<2
Chloroform	80	80	<4	<4	<1	<4	<2
Chloromethane	40	20	<4	<4	<1	<4	<2
cis-1,2-Dichloroethene	70	70	<4	<4	<1	<4	<2
cis-1,3-Dichloropropene	NA	NA	<4	<4	<1	<4	<2
Dibromochloromethane	80	80	<4	<4	<1	<4	<2
Ethylbenzene	700	700	<4	**7**	<1	<4	<2

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-65	TW-67	TW-69	TW-73	TW-74
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A8169714	A8175813	A8169713	A8183902	A8184001
Date Collected			2/18/08	2/19/08	2/18/08	2/20/08	2/22/08
Isopropylbenzene (Cumene)	824	224	<4	<4	<1	<4	<2
Methyl ethyl ketone (2-Butanone)	2800	820	<20	**1900**	<5	<20	<10
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<20	**100**	<5	<20	<10
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<4	<4	<1	<4	**1J**
Methylene chloride	5	5	<4	<4	<1	<4	<2
Naphthalene	9	3	*<4*	**18**	<1	*<4*	<2
n-Butylbenzene	80	21	<4	<4	<1	<4	<2
n-Propylbenzene	80	20	<4	<4	<1	<4	<2
P-Cymene (p-Isopropyltoluene)	NA	NA	<4	<4	<1	<4	<2
sec-Butylbenzene	80	22	<4	<4	<1	<4	<2
Styrene	100	100	<4	<4	<1	<4	<2
t-Butylbenzene	NA	NA	<4	<4	<1	<4	<2
Tetrachloroethylene (PCE)	5	5	<4	<4	<1	<4	<2
Toluene	1000	1000	<4	**100**	<1	<4	<2
Total 1,2-Dichloroethene	NA	NA	<8	<8	<2	<8	<4
trans-1,2-Dichloroethene	100	100	<4	<4	<1	<4	<2
trans-1,3-Dichloropropene	NA	NA	<4	<4	<1	<4	<2
Trichloroethylene (TCE)	5	5	<4	<4	<1	<4	<2
Vinyl chloride	2	2	*<4*	*<4*	<1	*<4*	<2
Xylenes,total	10000	10000	<12	**43**	<3	<12	<6

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-75	TW-75	TW-76	TW-77	TW-78
			A8184006	RSB0732-02	A8184005	A7E64002	A7E64001
			2/22/08	2/23/09	2/22/08	12/17/07	12/17/07
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<1	<1	<1	n/a
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1UJ*	*<1*	*<1*	n/a
1,1,2-Trichloroethane	5	5	<1	<1UJ	<1	<1	n/a
1,1-Dichloroethane	1300	340	<1	<1	<1	<1	n/a
1,1-Dichloroethene	7	7	<1	<1	<1	<1	n/a
1,2,4-Trimethylbenzene	17	5	**310D**	<1	**1**	<1	n/a
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	*<1*	<0.01	*<1*	n/a
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1	n/a
1,2-Dichloroethane	5	5	<1	<1	<1	<1	n/a
1,2-Dichloropropane	5	5	<1	<1	<1	<1	n/a
1,3,5-Trimethylbenzene (Mesitylene)	17	5	**98**	<1	<1	<1	n/a
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1	n/a
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1	n/a
1,4-Dioxane (p-dioxane)	260	80	<40	<40	<40	<40	n/a
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5UJ	<5	<5	n/a
Acetone	930	260	<5	**1.7JB**	<5	<5	n/a
Benzene	5	5	**7**	<1	<1	<1	<1
Bromodichloromethane	80	80	<1	<1	<1	<1	n/a
Bromoform	80	80	<1	<1UJ	<1	<1	n/a
Bromomethane	10	4	<1	<1	<1	<1	n/a
Carbon disulfide	30	9	<1	**0.2JB**	<1	<1	n/a
Carbon tetrachloride	5	5	<1	<1	<1	<1	n/a
Chlorobenzene	100	100	<1	<1UJ	<1	<1	n/a
Chloroethane	89	48	<1	<1	<1	<1	n/a
Chloroform	80	80	<1	<1	<1	<1	n/a
Chloromethane	40	20	<1	<1	<1	<1	n/a
cis-1,2-Dichloroethene	70	70	<1	<1	<1	<1	n/a
cis-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1	n/a
Dibromochloromethane	80	80	<1	<1UJ	<1	<1	n/a
Ethylbenzene	700	700	**38D**	<1UJ	<1	<1	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-75	TW-75	TW-76	TW-77	TW-78
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A8184006	RSB0732-02	A8184005	A7E64002	A7E64001
Date Collected			2/22/08	2/23/09	2/22/08	12/17/07	12/17/07
Isopropylbenzene (Cumene)	824	224	**0.9J**	<1UJ	<1	<1	n/a
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	<5	<5	n/a
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<5	<5	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	<1	<1	n/a
Methylene chloride	5	5	<1	<1	<1	<1	n/a
Naphthalene	9	3	**70**	<1	**0.6J**	<1	n/a
n-Butylbenzene	80	21	**0.5J**	<1	<1	<1	n/a
n-Propylbenzene	80	20	**2**	<1	<1	<1	n/a
P-Cymene (p-Isopropyltoluene)	NA	NA	**1**	<1	<1	<1	n/a
sec-Butylbenzene	80	22	**0.4J**	<1	<1	**0.7J**	n/a
Styrene	100	100	<1	<1UJ	<1	<1	n/a
t-Butylbenzene	NA	NA	<1	<1	<1	<1	n/a
Tetrachloroethylene (PCE)	5	5	<1	<1UJ	<1	<1	n/a
Toluene	1000	1000	**460D**	<1UJ	**0.6J**	<1	<1
Total 1,2-Dichloroethene	NA	NA	<2	<2	<2	<2	n/a
trans-1,2-Dichloroethene	100	100	<1	<1	<1	<1	n/a
trans-1,3-Dichloropropene	NA	NA	<1	<1UJ	<1	<1	n/a
Trichloroethylene (TCE)	5	5	<1	<1	<1	<1	n/a
Vinyl chloride	2	2	<1	<1	<1	<1	n/a
Xylenes,total	10000	10000	**1300D**	<2UJ	**2J**	<3	<3

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-78	TW-578 (DUP of TW-78)	TW-79	TW-79
			RSB0732-01	RSB0732-03	A8100901	RSA0614/K58CV
			2/23/09	2/23/09	1/29/08	1/22/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<1*	*<1*
1,1,2-Trichloroethane	5	5	<1	<1	<1	<1
1,1-Dichloroethane	1300	340	<1	<1	<1	<1
1,1-Dichloroethene	7	7	<1	<1	<1	<1
1,2,4-Trimethylbenzene	17	5	<1	<1	<1	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	*<1*	*<1*
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1
1,2-Dichloroethane	5	5	<1	<1	<1	<1
1,2-Dichloropropane	5	5	<1	<1	<1	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<1	<1	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1
1,4-Dioxane (p-dioxane)	260	80	<40	<40	<40	<50
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<5	<5
Acetone	930	260	**1.6JB**	**1.7JB**	**30**	**1.3JB**
Benzene	5	5	<1	<1	<1	**0.94J**
Bromodichloromethane	80	80	<1	<1	<1	<1
Bromoform	80	80	<1	<1	<1	<1
Bromomethane	10	4	<1	<1	<1	<1
Carbon disulfide	30	9	<1	<1	<1	<1
Carbon tetrachloride	5	5	<1	<1	<1	<1
Chlorobenzene	100	100	<1	<1	<1	<1
Chloroethane	89	48	<1	<1	<1	<1
Chloroform	80	80	<1	<1	<1	<1
Chloromethane	40	20	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	70	<1	<1	<1	<1
cis-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1
Dibromochloromethane	80	80	<1	<1	<1	<1
Ethylbenzene	700	700	<1	<1	<1	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-78	TW-578 (DUP of TW-78)	TW-79	TW-79
			RSB0732-01	RSB0732-03	A8100901	RSA0614/K58CV
			2/23/09	2/23/09	1/29/08	1/22/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Isopropylbenzene (Cumene)	824	224	<1	<1	**0.5J**	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	**3J**	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<5	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	**1**	**0.98J**
Methylene chloride	5	5	<1	<1	<1	<1
Naphthalene	9	3	<1	<1	<1	<1
n-Butylbenzene	80	21	<1	<1	**0.6J**	<1
n-Propylbenzene	80	20	<1	<1	<1	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<1	<1	<1
sec-Butylbenzene	80	22	**1.2**	**1.3**	**2**	**0.33J**
Styrene	100	100	<1	**0.58J**	<1	<1
t-Butylbenzene	NA	NA	**0.83J**	**0.82J**	**2**	**0.99J**
Tetrachloroethylene (PCE)	5	5	<1	<1	<1	<1
Toluene	1000	1000	<1	<1	<1	<1
Total 1,2-Dichloroethene	NA	NA	<2	<2	<2	<2
trans-1,2-Dichloroethene	100	100	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1
Trichloroethylene (TCE)	5	5	<1	<1	<1	<1
Vinyl chloride	2	2	<1	<1	<1	<1
Xylenes,total	10000	10000	<2	<2	<3	<2

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-79	TW-81	TW-82	TW-83
			RSB0835-06	6042857001	6042857002	RSB0438-09
			2/25/09	7/2/08	7/2/08	2/12/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1UJ	<1	<5	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1UJ*	*<1*	<5	*<1*
1,1,2-Trichloroethane	5	5	<1UJ	<1	<5	<1
1,1-Dichloroethane	1300	340	<1UJ	**11.1**	<5	<1
1,1-Dichloroethene	7	7	<1UJ	<1	<5	<1
1,2,4-Trimethylbenzene	17	5	<1UJ	**2.1**	<5	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1UJ*	*<1*	<5	*<1*
1,2-Dichlorobenzene	600	600	<1UJ	<1	<5	<1
1,2-Dichloroethane	5	5	<1UJ	<1	<5	<1
1,2-Dichloropropane	5	5	<1UJ	<1	<5	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1UJ	<1	<5	**0.83J**
1,3-Dichlorobenzene	NA	NA	<1UJ	<1	<5	<1
1,4-Dichlorobenzene	75	75	<1UJ	<1	<5	<1
1,4-Dioxane (p-dioxane)	260	80	<40UJ	n/a	n/a	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5UJ	<10	<50	<5
Acetone	930	260	<5UJ	<10	<50	**5**
Benzene	5	5	<1UJ	**742**	**753**	**32**
Bromodichloromethane	80	80	<1UJ	<1	<5	<1
Bromoform	80	80	<1UJ	<1	<5	<1
Bromomethane	10	4	<1UJ	<1	<5	<1
Carbon disulfide	30	9	<1UJ	<5	<25	<1
Carbon tetrachloride	5	5	<1UJ	<1	<5	<1
Chlorobenzene	100	100	<1UJ	<1	<5	<1
Chloroethane	89	48	<1UJ	**1.9**	**13.3**	<1
Chloroform	80	80	<1UJ	<1	**6**	<1
Chloromethane	40	20	<1UJ	<1	<5	<1
cis-1,2-Dichloroethene	70	70	<1UJ	**1.4**	<5	<1
cis-1,3-Dichloropropene	NA	NA	<1UJ	<1	<5	<1
Dibromochloromethane	80	80	<1UJ	<1	<5	<1
Ethylbenzene	700	700	<1UJ	**39.3**	**279**	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-79	TW-81	TW-82	TW-83
Location Identification and Sample Interval (Feet below ground surface)			TW-79	TW-81	TW-82	TW-83
Laboratory Sample Identification			RSB0835-06	6042857001	6042857002	RSB0438-09
Date Collected			2/25/09	7/2/08	7/2/08	2/12/09
Isopropylbenzene (Cumene)	824	224	<1UJ	**13**	**22.2**	**2.2**
Methyl ethyl ketone (2-Butanone)	2800	820	<5UJ	<10	<50	**1.8J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5UJ	<10	<50	**1.1J**
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**0.92J**	**3560**	**3680**	<1
Methylene chloride	5	5	<1UJ	<1	<5	<1
Naphthalene	9	3	<1UJ	<10	**218**	**34**
n-Butylbenzene	80	21	<1UJ	**2.7**	**5.6**	<1
n-Propylbenzene	80	20	<1UJ	**28.3**	**46.5**	**4.7**
P-Cymene (p-Isopropyltoluene)	NA	NA	<1UJ	<1	<5	<1
sec-Butylbenzene	80	22	<1UJ	**3.4**	**5.7**	<1
Styrene	100	100	<1UJ	<1	<5	<1
t-Butylbenzene	NA	NA	**0.58J**	**1.2**	<5	<1
Tetrachloroethylene (PCE)	5	5	<1UJ	<1	<5	<1
Toluene	1000	1000	<1UJ	**17.4**	**27.6**	**4.1**
Total 1,2-Dichloroethene	NA	NA	<2UJ	**1.4**	<5	<2
trans-1,2-Dichloroethene	100	100	<1UJ	<1	<5	<1
trans-1,3-Dichloropropene	NA	NA	<1UJ	<1	<5	<1
Trichloroethylene (TCE)	5	5	<1UJ	<1	<5	<1
Vinyl chloride	2	2	<1UJ	**15**	**6.8**	<1
Xylenes,total	10000	10000	<2UJ	**9**	**109**	**25**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-84	TW-85	TW-86	TW-87
			RSB0535-07	F468/K37FD	E858/K3QPG	RSB0691-01
			2/17/09	12/4/08	11/25/08	2/20/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	Residential Scenario				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	n/a	n/a	<10D
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	n/a	n/a	*<10D*
1,1,2-Trichloroethane	5	5	<1	n/a	n/a	*<10D*
1,1-Dichloroethane	1300	340	<1	<1	<33	<10D
1,1-Dichloroethene	7	7	<1	n/a	n/a	*<10D*
1,2,4-Trimethylbenzene	17	5	<1	n/a	n/a	**24D**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	*<33*	*<10D*
1,2-Dichlorobenzene	600	600	<1	<1	<33	<10D
1,2-Dichloroethane	5	5	<1	<1	*<33*	*<10D*
1,2-Dichloropropane	5	5	<1	n/a	n/a	*<10D*
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	n/a	n/a	**16D**
1,3-Dichlorobenzene	NA	NA	<1	n/a	n/a	<10D
1,4-Dichlorobenzene	75	75	<1	n/a	n/a	<10D
1,4-Dioxane (p-dioxane)	260	80	<40	<50	*<1700*	*<400D*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	n/a	n/a	<50D
Acetone	930	260	<5	n/a	n/a	**59D**
Benzene	5	5	<1	<1	**920**	**200D**
Bromodichloromethane	80	80	<1	n/a	n/a	<10D
Bromoform	80	80	<1	n/a	n/a	<10D
Bromomethane	10	4	<1	n/a	n/a	*<10D*
Carbon disulfide	30	9	<1	<1	*<33*	*<10D*
Carbon tetrachloride	5	5	<1	n/a	n/a	*<10D*
Chlorobenzene	100	100	<1	<1	<33	<10D
Chloroethane	89	48	<1	n/a	n/a	<10D
Chloroform	80	80	<1	<1	<33	<10D
Chloromethane	40	20	<1	n/a	n/a	<10D
cis-1,2-Dichloroethene	70	70	<1	n/a	n/a	<10D
cis-1,3-Dichloropropene	NA	NA	<1	n/a	n/a	<10D
Dibromochloromethane	80	80	<1	n/a	n/a	<10D
Ethylbenzene	700	700	<1	<1	**560**	**170DJ**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-84	TW-85	TW-86	TW-87
			RSB0535-07	F468/K37FD	E858/K3QPG	RSB0691-01
			2/17/09	12/4/08	11/25/08	2/20/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Isopropylbenzene (Cumene)	824	224	<1	n/a	n/a	**17D**
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	<170	<50D
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	n/a	n/a	<50D
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<5	*<170*	<10D
Methylene chloride	5	5	<1	n/a	n/a	*<10D*
Naphthalene	9	3	<1	n/a	n/a	**120DJ**
n-Butylbenzene	80	21	<1	n/a	n/a	**8.3DJ**
n-Propylbenzene	80	20	<1	n/a	n/a	**26D**
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	n/a	n/a	<10D
sec-Butylbenzene	80	22	<1	n/a	n/a	**8.8DJ**
Styrene	100	100	<1	<1	<33	<10D
t-Butylbenzene	NA	NA	<1	n/a	n/a	**6.1DJ**
Tetrachloroethylene (PCE)	5	5	<1	<1	*<33*	*<10D*
Toluene	1000	1000	<1	<1	**100**	**100DJ**
Total 1,2-Dichloroethene	NA	NA	<2	n/a	n/a	<20D
trans-1,2-Dichloroethene	100	100	<1	n/a	n/a	<10D
trans-1,3-Dichloropropene	NA	NA	<1	n/a	n/a	<10D
Trichloroethylene (TCE)	5	5	<1	<1	*<33*	*<10D*
Vinyl chloride	2	2	<1	n/a	n/a	*<10D*
Xylenes,total	10000	10000	<2	<2	**790**	**190DJ**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-88	TW-89	TW-90	TW-91	TW-92
			RSB0535-05	A8E85802	A8E85803	A8E85804/DL	RSB0604-08
			2/17/09	11/20/08	11/20/08	11/20/08	2/18/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<1*	*<1*	*<1*
1,1,2-Trichloroethane	5	5	<1	<1	<1	<1	<1
1,1-Dichloroethane	1300	340	<1	<1	<1	<1	<1
1,1-Dichloroethene	7	7	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	17	5	<1	<1	<1	<1	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	*<1*	*<1*	*<1*
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1	<1
1,2-Dichloroethane	5	5	<1	<1	<1	<1	**0.27J**
1,2-Dichloropropane	5	5	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1	<1
1,4-Dioxane (p-dioxane)	260	80	<40	<40	<40	<40	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<5	<5	<5
Acetone	930	260	<5	<5	<5	<5	**2.1J**
Benzene	5	5	<1	**2**	<1	<1	<1
Bromodichloromethane	80	80	<1	<1	<1	<1	<1
Bromoform	80	80	<1	<1	<1	<1	<1
Bromomethane	10	4	<1	<1	<1	<1	<1
Carbon disulfide	30	9	<1	<1	<1	<1	<1
Carbon tetrachloride	5	5	<1	<1	<1	<1	<1
Chlorobenzene	100	100	<1	<1	<1	<1	<1
Chloroethane	89	48	<1	<1	<1	<1	<1
Chloroform	80	80	<1	**0.7J**	<1	<1	<1
Chloromethane	40	20	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	70	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1	<1
Dibromochloromethane	80	80	<1	<1	<1	<1	<1
Ethylbenzene	700	700	<1	<1	<1	<1	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-88	TW-89	TW-90	TW-91	TW-92
			RSB0535-05	A8E85802	A8E85803	A8E85804/DL	RSB0604-08
			2/17/09	11/20/08	11/20/08	11/20/08	2/18/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	<1	<1	<1	<1	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	<5	<5	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<5	<5	<5UJ
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	**11**	**27**	**250D**	**1300**
Methylene chloride	5	5	<1	<1	<1	<1	<1
Naphthalene	9	3	<1	**24B**	**4B**	**2B**	<1
n-Butylbenzene	80	21	<1	<1	<1	<1	<1
n-Propylbenzene	80	20	<1	<1	<1	<1	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<1	<1	<1	<1
sec-Butylbenzene	80	22	<1	<1	<1	<1	<1
Styrene	100	100	<1	<1	<1	<1	<1
t-Butylbenzene	NA	NA	<1	<1	<1	<1	<1
Tetrachloroethylene (PCE)	5	5	<1	<1	<1	<1	<1
Toluene	1000	1000	<1	<1	<1	<1	<1
Total 1,2-Dichloroethene	NA	NA	<2	<2	<2	<2	<2
trans-1,2-Dichloroethene	100	100	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1	<1
Trichloroethylene (TCE)	5	5	<1	<1	<1	<1	<1
Vinyl chloride	2	2	<1	<1	<1	<1	<1
Xylenes,total	10000	10000	<2	<3	<3	<3	<2

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-93	TW-94	TW-96	TW-97
			E858/K3QPE	RSB0385-02	RSB0604-04	RSB0604-06
			11/25/08	2/11/09	2/18/09	2/18/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	n/a	<1	<5D	<1
1,1,2,2-Tetrachloroethane	1	0.7	n/a	*<1*	*<5D*	*<1*
1,1,2-Trichloroethane	5	5	n/a	<1	<5D	<1
1,1-Dichloroethane	1300	340	<2.5	<1	<5D	<1
1,1-Dichloroethene	7	7	n/a	<1	<5D	<1
1,2,4-Trimethylbenzene	17	5	n/a	<1	<5D	**4.1**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<2.5*	*<1*	*<5D*	*<1*
1,2-Dichlorobenzene	600	600	<2.5	<1	<5D	<1
1,2-Dichloroethane	5	5	<2.5	<1	<5D	<1
1,2-Dichloropropane	5	5	n/a	<1	<5D	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	n/a	<1	<5D	**2.7**
1,3-Dichlorobenzene	NA	NA	n/a	<1	<5D	<1
1,4-Dichlorobenzene	75	75	n/a	<1	<5D	<1
1,4-Dioxane (p-dioxane)	260	80	*<120*	<40	*<200D*	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	n/a	<5	<25D	<5
Acetone	930	260	n/a	8.5	<25D	**8.6J**
Benzene	5	5	<2.5	**9**	<5D	**63**
Bromodichloromethane	80	80	n/a	<1	<5D	<1
Bromoform	80	80	n/a	<1	<5D	<1
Bromomethane	10	4	n/a	<1	*<5D*	<1
Carbon disulfide	30	9	<2.5	<1	<5D	<1
Carbon tetrachloride	5	5	n/a	<1	<5D	<1
Chlorobenzene	100	100	<2.5	<1	<5D	<1
Chloroethane	89	48	n/a	<1	<5D	**0.66J**
Chloroform	80	80	<2.5	<1	<5D	<1
Chloromethane	40	20	n/a	<1	<5D	**0.42J**
cis-1,2-Dichloroethene	70	70	n/a	<1	<5D	<1
cis-1,3-Dichloropropene	NA	NA	n/a	<1	<5D	<1
Dibromochloromethane	80	80	n/a	<1	<5D	<1
Ethylbenzene	700	700	<2.5	<1	<5D	**4.6**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-93	TW-94	TW-96	TW-97
			E858/K3QPE	RSB0385-02	RSB0604-04	RSB0604-06
			11/25/08	2/11/09	2/18/09	2/18/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Isopropylbenzene (Cumene)	824	224	n/a	**0.79J**	<5D	**15J**
Methyl ethyl ketone (2-Butanone)	2800	820	<12	<5	<25D	**6.8J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	n/a	<5	<25D	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**83**	**11J**	<5D	<1
Methylene chloride	5	5	n/a	<1	<5D	<1
Naphthalene	9	3	n/a	<1	*<5D*	**68J**
n-Butylbenzene	80	21	n/a	<1	<5D	**2.1**
n-Propylbenzene	80	20	n/a	**1.2**	<5D	**31**
P-Cymene (p-Isopropyltoluene)	NA	NA	n/a	<1	<5D	**0.92J**
sec-Butylbenzene	80	22	n/a	<1	<5D	**1.8**
Styrene	100	100	<2.5	<1	<5D	<1
t-Butylbenzene	NA	NA	n/a	<1	<5D	**0.49J**
Tetrachloroethylene (PCE)	5	5	<2.5	<1	<5D	<1
Toluene	1000	1000	<2.5	<1	<5D	**7**
Total 1,2-Dichloroethene	NA	NA	n/a	<2	<10D	<2
trans-1,2-Dichloroethene	100	100	n/a	<1	<5D	<1
trans-1,3-Dichloropropene	NA	NA	n/a	<1	<5D	<1
Trichloroethylene (TCE)	5	5	<2.5	<1	<5D	<1
Vinyl chloride	2	2	n/a	<1	*<5D*	<1
Xylenes,total	10000	10000	<5	<2	<10D	**32**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-98	TW-99	TW-100	TW-101
			RSB0604-05	RSB0478-03	RSB0385-06	RSB0438-01
			2/18/09	2/13/09	2/11/09	2/12/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<1*	*<1*
1,1,2-Trichloroethane	5	5	<1	<1	<1	<1
1,1-Dichloroethane	1300	340	<1	<1	<1	<1
1,1-Dichloroethene	7	7	<1	<1	<1	<1
1,2,4-Trimethylbenzene	17	5	**0.35J**	<1	<1	**1.5**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	*<1*	*<1*
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1
1,2-Dichloroethane	5	5	<1	<1	<1	<1
1,2-Dichloropropane	5	5	<1	<1	<1	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<1	<1	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1
1,4-Dioxane (p-dioxane)	260	80	<40	<40	<40	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<5	<5
Acetone	930	260	**2.8J**	<5	<5	**9.8**
Benzene	5	5	**0.33J**	<1	<1	<1
Bromodichloromethane	80	80	<1	<1	<1	<1
Bromoform	80	80	<1	<1	<1	<1
Bromomethane	10	4	<1	<1	<1	<1
Carbon disulfide	30	9	<1	<1	<1	<1
Carbon tetrachloride	5	5	<1	<1	<1	<1
Chlorobenzene	100	100	<1	<1	<1	<1
Chloroethane	89	48	<1	<1	<1	<1
Chloroform	80	80	<1	<1	<1	<1
Chloromethane	40	20	**0.36J**	<1	<1	<1
cis-1,2-Dichloroethene	70	70	<1	<1	<1	<1
cis-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1
Dibromochloromethane	80	80	<1	<1	<1	<1
Ethylbenzene	700	700	**0.42J**	<1	<1	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-98	TW-99	TW-100	TW-101
Location Identification and Sample Interval (Feet below ground surface)						
Laboratory Sample Identification			RSB0604-05	RSB0478-03	RSB0385-06	RSB0438-01
Date Collected			2/18/09	2/13/09	2/11/09	2/12/09
Isopropylbenzene (Cumene)	824	224	**1.6J**	<1	<1	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	<5	**1.4J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<5	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	**2.8J**	**1.4**
Methylene chloride	5	5	<1	<1	<1	<1
Naphthalene	9	3	**4.6J**	<1	<1	**31**
n-Butylbenzene	80	21	**1.2**	<1	<1	<1
n-Propylbenzene	80	20	**3.1**	<1	<1	**1.1**
P-Cymene (p-Isopropyltoluene)	NA	NA	**0.48J**	<1	<1	<1
sec-Butylbenzene	80	22	**0.57J**	<1	<1	<1
Styrene	100	100	<1	<1	<1	<1
t-Butylbenzene	NA	NA	<1	<1	<1	<1
Tetrachloroethylene (PCE)	5	5	<1	<1	<1	<1
Toluene	1000	1000	**0.54J**	<1	<1	<1
Total 1,2-Dichloroethene	NA	NA	<2	<2	<2	<2
trans-1,2-Dichloroethene	100	100	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1
Trichloroethylene (TCE)	5	5	<1	<1	<1	<1
Vinyl chloride	2	2	<1	<1	<1	<1
Xylenes,total	10000	10000	**1.7J**	<2	<2	<2

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-102S	TW-102D	TW-103	TW-104
Location Identification and Sample Interval (Feet below ground surface)			TW-102S	TW-102D	TW-103	TW-104
Laboratory Sample Identification			RSB0385-03	RSB0385-01/RE	E858/K3QPF	F468/K37D8
Date Collected			2/11/09	2/11/09	11/25/08	12/4/08
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	<1	n/a	n/a
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	n/a	n/a
1,1,2-Trichloroethane	5	5	<1	<1	n/a	n/a
1,1-Dichloroethane	1300	340	<1	<1	<11	<1.7
1,1-Dichloroethene	7	7	<1	<1	n/a	n/a
1,2,4-Trimethylbenzene	17	5	<1	**1.8**	n/a	n/a
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	*<11*	*<1.7*
1,2-Dichlorobenzene	600	600	<1	<1	<11	<1.7
1,2-Dichloroethane	5	5	<1	<1	*<11*	<1.7
1,2-Dichloropropane	5	5	<1	<1	n/a	n/a
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<1	n/a	n/a
1,3-Dichlorobenzene	NA	NA	<1	<1	n/a	n/a
1,4-Dichlorobenzene	75	75	<1	<1	n/a	n/a
1,4-Dioxane (p-dioxane)	260	80	<40	<40	*<560*	*<84*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	n/a	n/a
Acetone	930	260	<5	**8.8DJ**	n/a	n/a
Benzene	5	5	<1	**5.2**	*<11*	<1.7
Bromodichloromethane	80	80	<1	<1	n/a	n/a
Bromoform	80	80	<1	<1	n/a	n/a
Bromomethane	10	4	<1	<1	n/a	n/a
Carbon disulfide	30	9	<1	<1	*<11*	<1.7
Carbon tetrachloride	5	5	<1	<1	n/a	n/a
Chlorobenzene	100	100	<1	<1	<11	<1.7
Chloroethane	89	48	<1	<1	n/a	n/a
Chloroform	80	80	<1	<1	<11	<1.7
Chloromethane	40	20	<1	<1	n/a	n/a
cis-1,2-Dichloroethene	70	70	<1	<1	n/a	n/a
cis-1,3-Dichloropropene	NA	NA	<1	<1	n/a	n/a
Dibromochloromethane	80	80	<1	<1	n/a	n/a
Ethylbenzene	700	700	<1	**7.6**	<11	<1.7

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-102S	TW-102D	TW-103	TW-104
			RSB0385-03	RSB0385-01/RE	E858/K3QPF	F468/K37D8
			2/11/09	2/11/09	11/25/08	12/4/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Isopropylbenzene (Cumene)	824	224	<1	**2.7**	n/a	n/a
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	<56	<8.4
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	**110**	**370**	**45**
Methylene chloride	5	5	<1	**1.5DJ**	n/a	n/a
Naphthalene	9	3	<1	**1.2**	n/a	n/a
n-Butylbenzene	80	21	<1	<1	n/a	n/a
n-Propylbenzene	80	20	<1	**3.1**	n/a	n/a
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<1	n/a	n/a
sec-Butylbenzene	80	22	<1	**0.84J**	n/a	n/a
Styrene	100	100	<1	<1	<11	<1.7
t-Butylbenzene	NA	NA	<1	**0.56J**	n/a	n/a
Tetrachloroethylene (PCE)	5	5	<1	<1	*<11*	<1.7
Toluene	1000	1000	<1	<1	<11	<1.7
Total 1,2-Dichloroethene	NA	NA	<2	<2	n/a	n/a
trans-1,2-Dichloroethene	100	100	<1	<1	n/a	n/a
trans-1,3-Dichloropropene	NA	NA	<1	<1	n/a	n/a
Trichloroethylene (TCE)	5	5	<1	<1	*<11*	<1.7
Vinyl chloride	2	2	<1	<1	n/a	n/a
Xylenes,total	10000	10000	<2	**2.9**	<22	<3.3

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-104D RSB0535-09 2/17/09	TW-105D RSB0535-11 2/17/09	TW-106S RSB0604-03 2/18/09	TW-107 RSA0614/K53CL 1/20/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	<1	<50D	<83
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<50D*	*<83*
1,1,2-Trichloroethane	5	5	<1	<1	*<50D*	*<83*
1,1-Dichloroethane	1300	340	<1	<1	<50D	<83
1,1-Dichloroethene	7	7	<1	<1	*<50D*	*<83*
1,2,4-Trimethylbenzene	17	5	<1	<1	**1300D**	*<83*
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	*<50D*	*<83*
1,2-Dichlorobenzene	600	600	<1	<1	<50D	<83
1,2-Dichloroethane	5	5	<1	<1	*<50D*	*<83*
1,2-Dichloropropane	5	5	<1	<1	*<50D*	*<83*
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<1	**410D**	*<83*
1,3-Dichlorobenzene	NA	NA	<1	<1	<50D	<83
1,4-Dichlorobenzene	75	75	<1	<1	<50D	*<83*
1,4-Dioxane (p-dioxane)	260	80	<40	<40	*<2000D*	*<4200*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<250D	<420
Acetone	930	260	<5	<5	<250D	**130J**
Benzene	5	5	**4.3**	<1	**4900D**	*<83*
Bromodichloromethane	80	80	<1	<1	<50D	*<83*
Bromoform	80	80	<1	<1	<50D	*<83*
Bromomethane	10	4	<1	<1	*<50D*	*<83*
Carbon disulfide	30	9	<1	**0.66J**	*<50D*	*<83*
Carbon tetrachloride	5	5	<1	<1	*<50D*	*<83*
Chlorobenzene	100	100	<1	<1	<50D	<83
Chloroethane	89	48	<1	<1	*<50D*	*<83*
Chloroform	80	80	<1	<1	<50D	*<83*
Chloromethane	40	20	<1	<1	*<50D*	*<83*
cis-1,2-Dichloroethene	70	70	<1	<1	<50D	*<83*
cis-1,3-Dichloropropene	NA	NA	<1	<1	<50D	<83
Dibromochloromethane	80	80	<1	<1	<50D	*<83*
Ethylbenzene	700	700	<1	<1	**220D**	<83

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-104D	TW-105D	TW-106S	TW-107
Location Identification and Sample Interval (Feet below ground surface)			TW-104D	TW-105D	TW-106S	TW-107
Laboratory Sample Identification			RSB0535-09	RSB0535-11	RSB0604-03	RSA0614/K53CL
Date Collected			2/17/09	2/17/09	2/18/09	1/20/09
Isopropylbenzene (Cumene)	824	224	<1	<1	**14DJ**	<83
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	<250D	*<420*
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	*<250D*	*<420*
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**21**	<1	**9400D**	**2200**
Methylene chloride	5	5	<1	<1	*<50D*	*<83*
Naphthalene	9	3	<1	<1	**150DJ**	*<83*
n-Butylbenzene	80	21	<1	<1	*<50D*	*<83*
n-Propylbenzene	80	20	<1	<1	**23DJ**	*<83*
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<1	<50D	<83
sec-Butylbenzene	80	22	<1	<1	*<50D*	*<83*
Styrene	100	100	<1	<1	<50D	<83
t-Butylbenzene	NA	NA	<1	<1	<50D	<83
Tetrachloroethylene (PCE)	5	5	<1	<1	*<50D*	*<83*
Toluene	1000	1000	<1	<1	**630D**	<83
Total 1,2-Dichloroethene	NA	NA	<2	<2	<100D	<170
trans-1,2-Dichloroethene	100	100	<1	<1	<50D	<83
trans-1,3-Dichloropropene	NA	NA	<1	<1	<50D	<83
Trichloroethylene (TCE)	5	5	<1	<1	*<50D*	*<83*
Vinyl chloride	2	2	<1	<1	*<50D*	*<83*
Xylenes,total	10000	10000	<2	<2	**5600D**	<170

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-107 RSB0835-04 2/25/09	TW-108 RSA0614/K53CJ 1/20/09	TW-108 RSB0835-03 2/25/09	TW-109 RSA0614/K53CM 1/20/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<10DUJ	*<330*	<100D	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<10DUJ*	*<330*	*<100D*	*<1*
1,1,2-Trichloroethane	5	5	*<10DUJ*	*<330*	*<100D*	<1
1,1-Dichloroethane	1300	340	**32DJ**	<330	<100D	<1
1,1-Dichloroethene	7	7	*<10DUJ*	*<330*	*<100D*	<1
1,2,4-Trimethylbenzene	17	5	*<10DUJ*	**260J**	**320D**	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<10DUJ*	*<330*	*<100D*	*<1*
1,2-Dichlorobenzene	600	600	<10DUJ	<330	<100D	<1
1,2-Dichloroethane	5	5	*<10DUJ*	*<330*	*<100D*	<1
1,2-Dichloropropane	5	5	*<10DUJ*	*<330*	*<100D*	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	*<10DUJ*	**71J**	**67DJ**	<1
1,3-Dichlorobenzene	NA	NA	<10DUJ	<330	<100D	<1
1,4-Dichlorobenzene	75	75	<10DUJ	*<330*	*<100D*	<1
1,4-Dioxane (p-dioxane)	260	80	*<400DUJ*	*<17000*	*<4000D*	<50
2-Hexanone (Methyl butyl ketone)	NA	NA	<50DUJ	<1700	<500D	<5
Acetone	930	260	<50DUJ	**560J**	*<500D*	<5
Benzene	5	5	**2.6DJ**	**1200**	**1600D**	<1
Bromodichloromethane	80	80	<10DUJ	*<330*	*<100D*	<1
Bromoform	80	80	<10DUJ	*<330*	*<100D*	<1
Bromomethane	10	4	*<10DUJ*	*<330*	*<100D*	<1
Carbon disulfide	30	9	*<10DUJ*	*<330*	*<100D*	<1
Carbon tetrachloride	5	5	*<10DUJ*	*<330*	*<100D*	<1
Chlorobenzene	100	100	<10DUJ	*<330*	<100D	<1
Chloroethane	89	48	<10DUJ	*<330*	*<100D*	<1
Chloroform	80	80	<10DUJ	*<330*	*<100D*	**0.18J**
Chloromethane	40	20	<10DUJ	*<330*	*<100D*	<1
cis-1,2-Dichloroethene	70	70	**33DJ**	*<330*	*<100D*	<1
cis-1,3-Dichloropropene	NA	NA	<10DUJ	<330	<100	<1
Dibromochloromethane	80	80	<10DUJ	*<330*	*<100D*	<1
Ethylbenzene	700	700	<10DUJ	**500**	**610D**	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-107	TW-108	TW-108	TW-109
Location Identification and Sample Interval (Feet below ground surface)			TW-107	TW-108	TW-108	TW-109
Laboratory Sample Identification			RSB0835-04	RSA0614/K53CJ	RSB0835-03	RSA0614/K53CM
Date Collected			2/25/09	1/20/09	2/25/09	1/20/09
Isopropylbenzene (Cumene)	824	224	<10DUJ	*<330*	<100D	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<50UJ	*<1700*	<500D	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<50UJ	*<1700*	*<500D*	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**780DJ**	**9900**	**6900D**	<1
Methylene chloride	5	5	*<10UJ*	*<330*	*<100D*	<1
Naphthalene	9	3	*<10DUJ*	*<330*	**71DJ**	<1
n-Butylbenzene	80	21	<10DUJ	*<330*	*<100D*	<1
n-Propylbenzene	80	20	<10DUJ	**76J**	**72DJ**	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	<10DUJ	<330	<100D	<1
sec-Butylbenzene	80	22	<10DUJ	*<330*	*<100D*	<1
Styrene	100	100	<10DUJ	*<330*	<100D	<1
t-Butylbenzene	NA	NA	<10DUJ	<330	<100D	<1
Tetrachloroethylene (PCE)	5	5	*<10DUJ*	*<330*	*<100D*	<1
Toluene	1000	1000	<10DUJ	**72J**	**82DJ**	<1
Total 1,2-Dichloroethene	NA	NA	**33DJ**	<670	<200D	<2
trans-1,2-Dichloroethene	100	100	<10DUJ	*<330*	<100D	<1
trans-1,3-Dichloropropene	NA	NA	<10DUJ	<330	<100D	<1
Trichloroethylene (TCE)	5	5	*<10DUJ*	*<330*	*<100D*	<1
Vinyl chloride	2	2	*<10DUJ*	*<330*	**56DJ**	<1
Xylenes,total	10000	10000	<20DUJ	**480J**	**570D**	<2

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-110	TW-111	TW-112	TW-113
			RSB0385-07	A8E71701/DL	A8E85801/DL	RSA0614/K53CG
			2/11/09	11/18/08	11/20/08	1/20/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	Residential Scenario				
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	<25	<1	<67
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<25*	*<1*	*<67*
1,1,2-Trichloroethane	5	5	<1	*<25*	<1	*<67*
1,1-Dichloroethane	1300	340	<1	<25	**1**	<67
1,1-Dichloroethene	7	7	<1	*<25*	<1	*<67*
1,2,4-Trimethylbenzene	17	5	**6.6**	n/a	**5**	*<67*
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<25*	*<1*	*<67*
1,2-Dichlorobenzene	600	600	<1	<25	<1	<67
1,2-Dichloroethane	5	5	<1	*<25*	<1	*<67*
1,2-Dichloropropane	5	5	<1	*<25*	<1	*<67*
1,3,5-Trimethylbenzene (Mesitylene)	17	5	**2.9**	n/a	**2**	*<67*
1,3-Dichlorobenzene	NA	NA	<1	<25	<1	<67
1,4-Dichlorobenzene	75	75	<1	<25	<1	<67
1,4-Dioxane (p-dioxane)	260	80	<40	*<200*	<40	*<3300*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	n/a	<5	<670
Acetone	930	260	<5	<120	**14**	**140J**
Benzene	5	5	**0.59J**	**890D**	**940D**	**410**
Bromodichloromethane	80	80	<1	<25	<1	<67
Bromoform	80	80	<1	<25	<1	<67
Bromomethane	10	4	<1	*<25*	<1	*<67*
Carbon disulfide	30	9	<1	*<25*	<1	*<67*
Carbon tetrachloride	5	5	<1	*<25*	<1	*<67*
Chlorobenzene	100	100	<1	<25	<1	<67
Chloroethane	89	48	<1	**14J**	**28**	*<67*
Chloroform	80	80	<1	<25	<1	<67
Chloromethane	40	20	<1	*<25*	<1	*<67*
cis-1,2-Dichloroethene	70	70	<1	<25	<1	<67
cis-1,3-Dichloropropene	NA	NA	<1	<25	<1	<67
Dibromochloromethane	80	80	<1	<25	<1	<67
Ethylbenzene	700	700	**1.4**	**26**	**65**	<67

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-110	TW-111	TW-112	TW-113
Location Identification and Sample Interval (Feet below ground surface)			TW-110	TW-111	TW-112	TW-113
Laboratory Sample Identification			RSB0385-07	A8E71701/DL	A8E85801/DL	RSA0614/K53CG
Date Collected			2/11/09	11/18/08	11/20/08	1/20/09
Isopropylbenzene (Cumene)	824	224	**1.2**	n/a	**22**	**12J**
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<120	**6**	<330
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	*<120*	<5	*<670*
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	**6200D**	**6900D**	**1800**
Methylene chloride	5	5	<1	*<25*	<1	*<67*
Naphthalene	9	3	**2.8**	n/a	**110EB**	*<67*
n-Butylbenzene	80	21	**0.89J**	n/a	**4**	*<67*
n-Propylbenzene	80	20	**1.1**	n/a	**29**	**17J**
P-Cymene (p-Isopropyltoluene)	NA	NA	**1**	n/a	**3**	<67
sec-Butylbenzene	80	22	**0.69J**	n/a	**4**	*<67*
Styrene	100	100	<1	<25	<1	<67
t-Butylbenzene	NA	NA	<1	n/a	**2**	<67
Tetrachloroethylene (PCE)	5	5	<1	*<25*	<1	*<67*
Toluene	1000	1000	**1**	**30**	**26**	**13J**
Total 1,2-Dichloroethene	NA	NA	<2	n/a	<2	<130
trans-1,2-Dichloroethene	100	100	<1	<25	<1	<67
trans-1,3-Dichloropropene	NA	NA	<1	<25	<1	<67
Trichloroethylene (TCE)	5	5	<1	*<25*	<1	*<67*
Vinyl chloride	2	2	<1	*<25*	<1	*<67*
Xylenes,total	10000	10000	**8.3**	**50**	**74**	<130

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-114	TW-115	TW-116S	TW-116D	TW-118
			RSA0614/K53CF	RSB0438-05/RE	RSB0691-06	RSB0643-07	RSB0385-08
			1/20/09	2/12/09	2/20/09	2/19/09	2/11/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<33	<1	<4D	<1	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<33*	*<1*	*<4D*	*<1*	*<1*
1,1,2-Trichloroethane	5	5	*<33*	<1	<4D	<1	<1
1,1-Dichloroethane	1300	340	<33	<1	<4D	<1	<1
1,1-Dichloroethene	7	7	*<33*	<1	<4D	<1	<1
1,2,4-Trimethylbenzene	17	5	*<33*	**430**	<4D	<1	**0.83J**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<33*	*<1*	*<4D*	*<1*	*<1*
1,2-Dichlorobenzene	600	600	<33	<1	<4D	<1	<1
1,2-Dichloroethane	5	5	*<33*	<1	<4D	<1	<1
1,2-Dichloropropane	5	5	*<33*	<1	<4D	<1	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	*<33*	**55**	<4D	<1	**0.79J**
1,3-Dichlorobenzene	NA	NA	<33	<1	<4D	<1	<1
1,4-Dichlorobenzene	75	75	<33	<1	<4D	<1	<1
1,4-Dioxane (p-dioxane)	260	80	*<1700*	<40	*<160D*	<40	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<170	**4.4J**	<20D	<5	<5
Acetone	930	260	**59J**	**37**	<20D	<5	**2.3J**
Benzene	5	5	**33**	**4700DJ**	**1.6DJ**	**0.68J**	**1.6**
Bromodichloromethane	80	80	<33	<1	<4D	<1	<1
Bromoform	80	80	<33	<1	<4D	<1	<1
Bromomethane	10	4	*<33*	<1	<4D	<1	<1
Carbon disulfide	30	9	*<33*	<1	<4D	<1	<1
Carbon tetrachloride	5	5	*<33*	<1	<4D	<1	<1
Chlorobenzene	100	100	<33	<1	<4D	<1	<1
Chloroethane	89	48	<33	<1	<4D	<1	<1
Chloroform	80	80	<33	<1	<4D	<1	**0.74J**
Chloromethane	40	20	*<33*	<1	<4D	<1	<1
cis-1,2-Dichloroethene	70	70	<33	<1	<4D	<1	<1
cis-1,3-Dichloropropene	NA	NA	<33	<1	<4D	<1	<1
Dibromochloromethane	80	80	<33	<1	<4D	<1	<1
Ethylbenzene	700	700	<33	**320**	<4D	<1	**1.1**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-114	TW-115	TW-116S	TW-116D	TW-118
			RSA0614/K53CF	RSB0438-05/RE	RSB0691-06	RSB0643-07	RSB0385-08
			1/20/09	2/12/09	2/20/09	2/19/09	2/11/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	<33	**17**	**3.5DJ**	**1.1**	**6.1**
Methyl ethyl ketone (2-Butanone)	2800	820	<170	**20**	<20D	<5	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	*<170*	**1.3J**	<20D	<5	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**960**	**15000DJ**	**380D**	**270**	<1
Methylene chloride	5	5	*<33*	<1	<4D	<1	<1
Naphthalene	9	3	*<33*	**170**	**7.3DJ**	<1	**8.6**
n-Butylbenzene	80	21	*<33*	**26**	<4D	<1	**3.2**
n-Propylbenzene	80	20	*<33*	**23**	<4D	**1.3**	**7.1**
P-Cymene (p-Isopropyltoluene)	NA	NA	<33	**2.3**	<4D	**0.69J**	**2.7**
sec-Butylbenzene	80	22	*<33*	**330**	<4D	**1.3**	**1.6**
Styrene	100	100	<33	**3.2**	<4D	<1	<1
t-Butylbenzene	NA	NA	<33	<1	<4D	**0.78J**	<1
Tetrachloroethylene (PCE)	5	5	*<33*	<1	<4D	<1	<1
Toluene	1000	1000	<33	**140**	<4D	<1	**1.6**
Total 1,2-Dichloroethene	NA	NA	<67	<2	<8D	<2	<2
trans-1,2-Dichloroethene	100	100	<33	<1	<4D	<1	<1
trans-1,3-Dichloropropene	NA	NA	<33	<1	<4D	<1	<1
Trichloroethylene (TCE)	5	5	*<33*	<1	<4D	<1	<1
Vinyl chloride	2	2	*<33*	<1	*<4D*	<1	<1
Xylenes,total	10000	10000	<67	**860**	<8D	<2	**7.4**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-120	TW-123	TW-523 (DUP of TW-123)	TW-124
Location Identification and Sample Interval (Feet below ground surface)						
Laboratory Sample Identification			RSB0478-02	RSB0438-02	RSB0438-03	RSB0438-08
Date Collected			2/13/09	2/12/09	2/12/09	2/12/09
Volatile Organic Compounds (ug/L)						
1,1,1-Trichloroethane	200	200	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<1*	*<1*
1,1,2-Trichloroethane	5	5	<1	<1	<1	<1
1,1-Dichloroethane	1300	340	<1	<1	<1	<1
1,1-Dichloroethene	7	7	<1	<1	<1	<1
1,2,4-Trimethylbenzene	17	5	<1	**12**	**13**	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	*<1*	*<1*
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1
1,2-Dichloroethane	5	5	<1	<1	<1	<1
1,2-Dichloropropane	5	5	<1	<1	<1	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	**4.3**	**4.5**	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1
1,4-Dioxane (p-dioxane)	260	80	<40	<40	<40	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<5	<5
Acetone	930	260	<5	**55**	**66**	**8.3**
Benzene	5	5	**0.54J**	**340**	**350**	**69**
Bromodichloromethane	80	80	<1	<1	<1	<1
Bromoform	80	80	<1	<1	<1	<1
Bromomethane	10	4	<1	<1	<1	<1
Carbon disulfide	30	9	<1	<1	<1	<1
Carbon tetrachloride	5	5	<1	<1	<1	<1
Chlorobenzene	100	100	<1	<1	<1	<1
Chloroethane	89	48	<1	<1	<1	<1
Chloroform	80	80	<1	<1	<1	<1
Chloromethane	40	20	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	70	<1	<1	<1	<1
cis-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1
Dibromochloromethane	80	80	<1	<1	<1	<1
Ethylbenzene	700	700	<1	**21**	**21**	**2.8**

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-120	TW-123	TW-523 (DUP of TW-123)	TW-124
			RSB0478-02	RSB0438-02	RSB0438-03	RSB0438-08
			2/13/09	2/12/09	2/12/09	2/12/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]					
	Non-Residental Scenario	**Residential Scenario**				
Isopropylbenzene (Cumene)	824	224	<1	**27**	**27**	**1.1**
Methyl ethyl ketone (2-Butanone)	2800	820	<5	**16**	**20**	**4.3J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<5	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	<1	<1
Methylene chloride	5	5	<1	<1	<1	<1
Naphthalene	9	3	<1	**280**	**280**	**3.6**
n-Butylbenzene	80	21	<1	**6.6**	**8.8**	<1
n-Propylbenzene	80	20	<1	**30**	**30**	**3.1**
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	**5**	**5.9**	<1
sec-Butylbenzene	80	22	<1	**4.1**	**4.9**	<1
Styrene	100	100	<1	<1	<1	<1
t-Butylbenzene	NA	NA	<1	<1	<1	<1
Tetrachloroethylene (PCE)	5	5	<1	<1	<1	<1
Toluene	1000	1000	<1	**32**	**29**	**1.7**
Total 1,2-Dichloroethene	NA	NA	<2	<2	<2	<2
trans-1,2-Dichloroethene	100	100	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	NA	<1	<1	<1	<1
Trichloroethylene (TCE)	5	5	<1	<1	<1	<1
Vinyl chloride	2	2	<1	<1	<1	<1
Xylenes,total	10000	10000	<2	**75**	**71**	<2

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-125	TW-126	TW-128	TW-129	TW-130
			RSB0385-05	RSB0438-07	RSB0438-06	RSB0535-06	RSB0604-07
			2/11/09	2/12/09	2/12/09	2/17/09	2/18/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<1	<1UJ	<1	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	*<1UJ*	*<1*	*<1*
1,1,2-Trichloroethane	5	5	<1	<1	<1UJ	<1	<1
1,1-Dichloroethane	1300	340	<1	<1	<1UJ	<1	<1
1,1-Dichloroethene	7	7	<1	<1	<1UJ	<1	<1
1,2,4-Trimethylbenzene	17	5	<1	<1	<1UJ	**0.65J**	**0.67J**
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	*<1UJ*	*<1*	*<1*
1,2-Dichlorobenzene	600	600	<1	<1	<1UJ	<1	<1
1,2-Dichloroethane	5	5	<1	<1	<1UJ	<1	<1
1,2-Dichloropropane	5	5	<1	<1	<1UJ	<1	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<1	<1UJ	<1	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	<1UJ	<1	<1
1,4-Dichlorobenzene	75	75	<1	<1	<1UJ	<1	<1
1,4-Dioxane (p-dioxane)	260	80	<40	<40	<40UJ	<40	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	<5UJ	<5	<5
Acetone	930	260	<5	**2.7J**	<5UJ	**8.7**	<5
Benzene	5	5	<1	<1	<1UJ	**10**	<1
Bromodichloromethane	80	80	<1	<1	<1UJ	<1	<1
Bromoform	80	80	<1	<1	<1UJ	<1	<1
Bromomethane	10	4	<1	<1	<1UJ	<1	<1
Carbon disulfide	30	9	<1	<1	<1UJ	<1	<1
Carbon tetrachloride	5	5	<1	<1	<1UJ	<1	<1
Chlorobenzene	100	100	<1	<1	<1UJ	<1	<1
Chloroethane	89	48	<1	<1	<1UJ	<1	<1
Chloroform	80	80	<1	<1	<1UJ	<1	<1
Chloromethane	40	20	<1	<1	<1UJ	<1	<1
cis-1,2-Dichloroethene	70	70	<1	<1	<1UJ	<1	<1
cis-1,3-Dichloropropene	NA	NA	<1	<1	<1UJ	<1	<1
Dibromochloromethane	80	80	<1	<1	<1UJ	<1	<1
Ethylbenzene	700	700	<1	<1	<1UJ	**1.4**	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-125	TW-126	TW-128	TW-129	TW-130
			RSB0385-05	RSB0438-07	RSB0438-06	RSB0535-06	RSB0604-07
			2/11/09	2/12/09	2/12/09	2/17/09	2/18/09
	Kansas Tier II Risk-Based Standards GW Pathway(A)						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	<1	**1.1**	<1UJ	**11J**	**0.31J**
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	<5UJ	**3.4J**	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	<5UJ	<5	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	<1UJ	**3**	<1
Methylene chloride	5	5	<1	<1	<1UJ	<1	<1
Naphthalene	9	3	<1	<1	<1UJ	**4.6**	**1.4J**
n-Butylbenzene	80	21	<1	<1	<1UJ	**2.6**	<1
n-Propylbenzene	80	20	<1	**2.1**	<1UJ	**20**	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<1	<1UJ	<1	<1
sec-Butylbenzene	80	22	<1	<1	<1UJ	**2.3**	<1
Styrene	100	100	<1	<1	<1UJ	<1	<1
t-Butylbenzene	NA	NA	<1	<1	<1UJ	<1	<1
Tetrachloroethylene (PCE)	5	5	<1	<1	<1UJ	<1	<1
Toluene	1000	1000	<1	<1	<1UJ	**3.6**	<1
Total 1,2-Dichloroethene	NA	NA	<2	<2	<2UJ	<2	<2
trans-1,2-Dichloroethene	100	100	<1	<1	<1UJ	<1	<1
trans-1,3-Dichloropropene	NA	NA	<1	<1	<1UJ	<1	<1
Trichloroethylene (TCE)	5	5	<1	<1	<1UJ	<1	<1
Vinyl chloride	2	2	<1	<1	<1UJ	<1	<1
Xylenes,total	10000	10000	<2	<2	<2UJ	**9.2**	**0.72J**

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-131	TW-531 (DUP of TW-131)	W-01S	W-01S	W-01S
			RSB0535-01	RSB0535-04	A8164016	A7C56902	RSB0438-04
			2/17/09	2/17/09	2/16/08	10/30/07	2/12/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	<1	n/a	<1	<1
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	*<1*	n/a	*<1*	*<1*
1,1,2-Trichloroethane	5	5	<1	<1	n/a	**6**	<1
1,1-Dichloroethane	1300	340	<1	<1	n/a	**0.6J**	<1
1,1-Dichloroethene	7	7	<1	<1	n/a	**0.6J**	<1
1,2,4-Trimethylbenzene	17	5	<1	<1	n/a	<1	<1
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	*<1*	*<1*	n/a	*<1*	*<1*
1,2-Dichlorobenzene	600	600	<1	<1	n/a	<1	<1
1,2-Dichloroethane	5	5	<1	<1	n/a	**4**	<1
1,2-Dichloropropane	5	5	<1	<1	n/a	<1	<1
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	<1	n/a	<1	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	n/a	<1	<1
1,4-Dichlorobenzene	75	75	<1	<1	n/a	<1	<1
1,4-Dioxane (p-dioxane)	260	80	<40	<40	n/a	<40	<40
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	<5	n/a	<5	<5
Acetone	930	260	<5	<5	n/a	**3J**	**1.4J**
Benzene	5	5	<1	<1	**0.56J**	<1	<1
Bromodichloromethane	80	80	<1	<1	n/a	<1	<1
Bromoform	80	80	<1	<1	n/a	<1	<1
Bromomethane	10	4	<1	<1	n/a	<1	<1
Carbon disulfide	30	9	<1	<1	n/a	<1	<1
Carbon tetrachloride	5	5	<1	<1	n/a	<1	<1
Chlorobenzene	100	100	<1	<1	n/a	<1	<1
Chloroethane	89	48	<1	<1	n/a	<1	<1
Chloroform	80	80	<1	<1	n/a	<1	<1
Chloromethane	40	20	<1	<1	n/a	<1	<1
cis-1,2-Dichloroethene	70	70	<1	<1	n/a	<1	<1
cis-1,3-Dichloropropene	NA	NA	<1	<1	n/a	<1	<1
Dibromochloromethane	80	80	<1	<1	n/a	<1	<1
Ethylbenzene	700	700	<1	<1	n/a	<1	<1

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		TW-131 RSB0535-01 2/17/09	TW-531 (DUP of TW-131) RSB0535-04 2/17/09	W-01S A8164016 2/16/08	W-01S A7C56902 10/30/07	W-01S RSB0438-04 2/12/09
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	<1	<1	n/a	<1	<1
Methyl ethyl ketone (2-Butanone)	2800	820	<5	<5	n/a	<5	<5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	<5	n/a	<5	<5
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	<1	**3**	<1
Methylene chloride	5	5	<1	<1	n/a	<1	<1
Naphthalene	9	3	<1	<1	n/a	<1	<1
n-Butylbenzene	80	21	<1	<1	n/a	<1	<1
n-Propylbenzene	80	20	<1	<1	n/a	<1	<1
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	<1	n/a	<1	<1
sec-Butylbenzene	80	22	<1	<1	n/a	<1	<1
Styrene	100	100	<1	<1	n/a	<1	<1
t-Butylbenzene	NA	NA	<1	<1	n/a	<1	<1
Tetrachloroethylene (PCE)	5	5	<1	<1	n/a	<1	<1
Toluene	1000	1000	<1	<1	n/a	<1	<1
Total 1,2-Dichloroethene	NA	NA	<2	<2	n/a	<2	<2
trans-1,2-Dichloroethene	100	100	<1	<1	n/a	<1	<1
trans-1,3-Dichloropropene	NA	NA	<1	<1	n/a	<1	<1
Trichloroethylene (TCE)	5	5	<1	<1	n/a	<1	<1
Vinyl chloride	2	2	<1	<1	n/a	**14**	<1
Xylenes,total	10000	10000	<2	<2	n/a	<3	<2

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 85 of 86)

Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		W-16S	W-22	W-22	W-24	W-26
			A8183903	A8164010	RSB0478-01	A8160508DL	A8175801
			2/20/08	2/16/08	2/13/09	2/15/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Volatile Organic Compounds (ug/L)							
1,1,1-Trichloroethane	200	200	<1	n/a	<2DUJ	n/a	<4
1,1,2,2-Tetrachloroethane	1	0.7	*<1*	n/a	*<2DUJ*	n/a	*<4*
1,1,2-Trichloroethane	5	5	<1	n/a	<2DUJ	n/a	<4
1,1-Dichloroethane	1300	340	<1	n/a	<2DUJ	n/a	<4
1,1-Dichloroethene	7	7	<1	n/a	<2DUJ	n/a	<4
1,2,4-Trimethylbenzene	17	5	<1	n/a	<2DUJ	n/a	<4
1,2-Dibromoethane (Ethylene dibromide)	0.05	0.05	<0.01	n/a	*<2DUJ*	n/a	<0.01
1,2-Dichlorobenzene	600	600	<1	n/a	<2DUJ	n/a	<4
1,2-Dichloroethane	5	5	<1	n/a	<2DUJ	n/a	<4
1,2-Dichloropropane	5	5	<1	n/a	<2DUJ	n/a	<4
1,3,5-Trimethylbenzene (Mesitylene)	17	5	<1	n/a	<2DUJ	n/a	<4
1,3-Dichlorobenzene	NA	NA	<1	n/a	<2DUJ	n/a	<4
1,4-Dichlorobenzene	75	75	<1	n/a	<2DUJ	n/a	<4
1,4-Dioxane (p-dioxane)	260	80	<40	n/a	<80DUJ	n/a	*<160*
2-Hexanone (Methyl butyl ketone)	NA	NA	<5	n/a	<10DUJ	n/a	<20
Acetone	930	260	<5	n/a	<10DUJ	n/a	<20
Benzene	5	5	<1	**92**	**120DJ**	**170D**	<4
Bromodichloromethane	80	80	<1	n/a	<2DUJ	n/a	<4
Bromoform	80	80	<1	n/a	<2DUJ	n/a	<4
Bromomethane	10	4	<1	n/a	<2DUJ	n/a	<4
Carbon disulfide	30	9	<1	n/a	<2DUJ	n/a	<4
Carbon tetrachloride	5	5	<1	n/a	<2DUJ	n/a	<4
Chlorobenzene	100	100	<1	n/a	<2DUJ	n/a	<4
Chloroethane	89	48	<1	n/a	<2DUJ	n/a	<4
Chloroform	80	80	<1	n/a	<2DUJ	n/a	<4
Chloromethane	40	20	<1	n/a	<2DUJ	n/a	<4
cis-1,2-Dichloroethene	70	70	<1	n/a	<2DUJ	n/a	<4
cis-1,3-Dichloropropene	NA	NA	<1	n/a	<2DUJ	n/a	<4
Dibromochloromethane	80	80	<1	n/a	<2DUJ	n/a	<4
Ethylbenzene	700	700	<1	n/a	**1.6DJ**	n/a	<4

Table 10b

Groundwater Sample Analytical Data - VOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected		W-16S	W-22	W-22	W-24	W-26
			A8183903	A8164010	RSB0478-01	A8160508DL	A8175801
			2/20/08	2/16/08	2/13/09	2/15/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
Isopropylbenzene (Cumene)	824	224	<1	n/a	**21DJ**	n/a	<4
Methyl ethyl ketone (2-Butanone)	2800	820	<5	n/a	<10DUJ	n/a	<20
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	230	70	<5	n/a	<10DUJ	n/a	<20
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<1	<1	**38DJ**	<1	<4
Methylene chloride	5	5	<1	n/a	<2DUJ	n/a	<4
Naphthalene	9	3	<1	n/a	**1.1DJ**	n/a	<4
n-Butylbenzene	80	21	<1	n/a	**1.7DJ**	n/a	<4
n-Propylbenzene	80	20	<1	n/a	**21DJ**	n/a	<4
P-Cymene (p-Isopropyltoluene)	NA	NA	<1	n/a	**1.4DJ**	n/a	<4
sec-Butylbenzene	80	22	<1	n/a	**3DJ**	n/a	<4
Styrene	100	100	<1	n/a	<2DUJ	n/a	<4
t-Butylbenzene	NA	NA	<1	n/a	**2.3DJ**	n/a	<4
Tetrachloroethylene (PCE)	5	5	<1	n/a	<2DUJ	n/a	<4
Toluene	1000	1000	<1	n/a	**7.3DJ**	n/a	<4
Total 1,2-Dichloroethene	NA	NA	<2	n/a	<4DUJ	n/a	<8
trans-1,2-Dichloroethene	100	100	<1	n/a	<2DUJ	n/a	<4
trans-1,3-Dichloropropene	NA	NA	<1	n/a	<2DUJ	n/a	<4
Trichloroethylene (TCE)	5	5	<1	n/a	<2DUJ	n/a	<4
Vinyl chloride	2	2	<1	n/a	<2DUJ	n/a	<4
Xylenes,total	10000	10000	<3	n/a	**11DJ**	n/a	<12

(mg/L)	milligrams per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
n/a	Not analyzed
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
UJ	Potential false negative due to low QC recoveries.
B	Analyte detected in the associated blank, as well as the sample.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	FINA/MW-38	FINA/MW-38-53 (DUP of FINA/MW-38)	N4-2	N5-1	N5-2	N5-3
Location Identification and Sample Interval (Feet below ground surface)								
Laboratory Sample Identification			A8183908	A8183909	A8183911	A8184004	A8183905	A8183906
Date Collected			2/20/08	2/20/08	2/20/08	2/22/08	2/20/08	2/20/08
Semivolatile Organic Compounds (ug/L)								
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1	<1	<5
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1	<1	<5
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1	<1	<5
2,4-Dimethylphenol	1800	280	<1	<1	<1	<1	<1	<5
2,4-Dinitrophenol	200	30	<5	<5	<5	<5	<5	<24
2-Methylphenol (o-cresol)	4700	740	<1	<1	<1	<1	<1	<5
3+4-Methylphenol (m&p-cresols) [(B)]	470	80	<5	<5	<5	<5	<5	<24
4-Nitrophenol	NA	NA	<5	<5	<5	<5	<5	<24
Acenaphthene	490	130	<1	<1	<1	<1	<1	<5
Anthracene	2300	620	<1	<1	<1	<1	<1	<5
Benzo(a)anthracene	0.4	0.1	*<1*	*<1*	*<1*	*<1*	*<1*	*<5*
Benzo(a)pyrene	0.2	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<5*
Benzo(b)fluoranthene	0.3	0.09	*<1*	*<1*	*<1*	*<1*	*<1*	*<5*
Benzo(k)fluoranthene	3	1	<1	<1	<1	<1	<1	*<5*
Bis(2-ethylhexyl)phthalate	6	6	<5	<5	<5	<5	<5	*<24*
Chrysene	40	10	<1	<1	<1	<1	<1	<5
Dibenz(a,h)anthracene	0.01	0.004	*<1*	*<1*	*<1*	*<1*	*<1*	*<5*
Diethyl phthalate	78000	12000	<1	<1	<1	<1	<1	<5
Dimethyl phthalate	1005000	156000	<1	<1	<1	<1	<1	<5
Di-n-butyl phthalate	6390	1500	<1	<1	<1	<1	<1	<5
Fluoranthene	890	180	<1	<1	<1	<1	<1	<5
Fluorene	280	70	<1	<1	<1	<1	<1	<5
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<1*	*<1*	*<1*	*<1*	*<1*	*<5*
Naphthalene	9	3	<1	**9**	<1	<1	<1	*<5*

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**FINA/MW-38**	**FINA/MW-38-53 (DUP of FINA/MW-38)**	**N4-2**	**N5-1**	**N5-2**	**N5-3**
	Laboratory Sample Identification		**A8183908**	**A8183909**	**A8183911**	**A8184004**	**A8183905**	**A8183906**
	Date Collected		**2/20/08**	**2/20/08**	**2/20/08**	**2/22/08**	**2/20/08**	**2/20/08**
Analyte (Units)	**Kansas Tier II Risk-Based Standards GW Pathway[(A)]**							
	Non-Residental Scenario	**Residential Scenario**						
Phenanthrene	NA	NA	<1	<1	<1	<1	<1	<5
Phenol	58000	900	<1	<1	<1	<1	<1	<5
Pyrene	720	140	<1	<1	<1	<1	<1	<5
Pyridine	9	3	*<5*	*<5*	*<5*	*<5*	*<5*	*<24*
Quinoline	NA	NA	<5	<5	<5	<5	<5	<24

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	KDHE standards for 4-methylphenol used for 3+4-methylphenol.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	N5-3-52 (DUP of N5-3)	OW-23T	OW-26	SB-08	SB-09	SB-11	SB-17
Location Identification and Sample Interval (Feet below ground surface)			N5-3-52 (DUP of N5-3)	OW-23T	OW-26	SB-08	SB-09	SB-11	SB-17
Laboratory Sample Identification			A8183907	A8183910	A8183915	A8184013	A8175810	A8175814	A8183916
Date Collected			2/20/08	2/20/08	2/20/08	2/22/08	2/19/08	2/19/08	2/20/08
Semivolatile Organic Compounds (ug/L)									
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1	<0.9	<0.9	<5
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1	<0.9	<0.9	<5
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1	<0.9	<0.9	<5
2,4-Dimethylphenol	1800	280	<1	<1	<1	**1**	**79**	<0.9	**5**
2,4-Dinitrophenol	200	30	<5	<5	<5	<5	<5	<5	<24
2-Methylphenol (o-cresol)	4700	740	<1	<1	<1	<1	**6**	**1**	<5
3+4-Methylphenol (m&p-cresols) [(B)]	470	80	<5	<5	<5	<5	<5	<5	<24
4-Nitrophenol	NA	NA	<5	<5	<5	<5	<5	<5	<24
Acenaphthene	490	130	<1	<1	<1	<1	**2**	<0.9	<5
Anthracene	2300	620	<1	<1	<1	<1	**0.9**	<0.9	<5
Benzo(a)anthracene	0.4	0.1	*<1*	*<1*	*<1*	*<1*	**1**	*<0.9*	*<5*
Benzo(a)pyrene	0.2	0.2	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<0.9*	*<5*
Benzo(b)fluoranthene	0.3	0.09	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<0.9*	*<5*
Benzo(k)fluoranthene	3	1	<1	<1	<1	<1	<0.9	<0.9	*<5*
Bis(2-ethylhexyl)phthalate	6	6	<5	<5	<5	<5	<5	<5	*<24*
Chrysene	40	10	<1	<1	<1	<1	**1**	<0.9	<5
Dibenz(a,h)anthracene	0.01	0.004	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<0.9*	*<5*
Diethyl phthalate	78000	12000	<1	<1	<1	<1	<0.9	<0.9	<5
Dimethyl phthalate	1005000	156000	<1	<1	<1	<1	<0.9	<0.9	<5
Di-n-butyl phthalate	6390	1500	<1	<1	<1	<1	<0.9	<0.9	<5
Fluoranthene	890	180	<1	<1	<1	<1	<0.9	<0.9	<5
Fluorene	280	70	<1	<1	<1	<1	**2**	<0.9	<5
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<0.9*	*<5*
Naphthalene	9	3	<1	<1	<1	<1	**3**	**6**	**39**

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**N5-3-52 (DUP of N5-3)**	**OW-23T**	**OW-26**	**SB-08**	**SB-09**	**SB-11**	**SB-17**
	Laboratory Sample Identification		**A8183907**	**A8183910**	**A8183915**	**A8184013**	**A8175810**	**A8175814**	**A8183916**
	Date Collected		**2/20/08**	**2/20/08**	**2/20/08**	**2/22/08**	**2/19/08**	**2/19/08**	**2/20/08**
Analyte (Units)	**Kansas Tier II Risk-Based Standards GW Pathway[(A)]**								
	Non-Residental Scenario	**Residential Scenario**							
Phenanthrene	NA	NA	<1	<1	<1	<1	**4**	<0.9	<5
Phenol	58000	900	<1	<1	<1	<1	**6**	**1**	**5**
Pyrene	720	140	<1	<1	<1	<1	<0.9	**1**	<5
Pyridine	9	3	*<5*	*<5*	*<5*	*<5*	*<5*	*<5*	*<24*
Quinoline	NA	NA	<5	<5	<5	<5	<5	<5	<24

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	KDHE standards for 4-methylphenol used for 3+4-methylphenol.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	SB-30	SB-36	SB-37	SB-38	TW-03	TW-05	TW-07	TW-10
Location Identification and Sample Interval (Feet below ground surface)										
Laboratory Sample Identification			A8175905	A8175816	A8175815	A8175809	A8169701	A8175805	A8169705	A8175806
Date Collected			2/19/08	2/19/08	2/19/08	2/19/08	2/18/08	2/19/08	2/18/08	2/19/08
Semivolatile Organic Compounds (ug/L)										
1,2-Dichlorobenzene	600	600	<1	<1	<1	<0.9	<1	<1	<1	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<0.9	<1	<1	<1	<1
1,4-Dichlorobenzene	75	75	<1	<1	<1	<0.9	<1	<1	<1	<1
2,4-Dimethylphenol	1800	280	<1	<1	<1	<0.9	**64**	<1	<1	<1
2,4-Dinitrophenol	200	30	<5	<5	<5	<5	<5	<5	<5	<5
2-Methylphenol (o-cresol)	4700	740	<1	<1	<1	<0.9	**28**	<1	<1	<1
3+4-Methylphenol (m&p-cresols) [(B)]	470	80	<5	<5	<5	<5	<5	<5	<5	<5
4-Nitrophenol	NA	NA	<5	<5	<5	<5	<5	<5	<5	<5
Acenaphthene	490	130	<1	<1	**2**	<0.9	**1**	<1	<1	<1
Anthracene	2300	620	<1	<1	<1	<0.9	<1	<1	<1	<1
Benzo(a)anthracene	0.4	0.1	*<1*	*<1*	*<1*	*<0.9*	*<1*	*<1*	*<1*	*<1*
Benzo(a)pyrene	0.2	0.2	*<1*	*<1*	*<1*	*<0.9*	*<1*	*<1*	*<1*	*<1*
Benzo(b)fluoranthene	0.3	0.09	*<1*	*<1*	*<1*	*<0.9*	*<1*	*<1*	*<1*	*<1*
Benzo(k)fluoranthene	3	1	<1	<1	<1	<0.9	<1	<1	<1	<1
Bis(2-ethylhexyl)phthalate	6	6	<5	<5	<5	<5	<5	<5	<5	<5
Chrysene	40	10	<1	<1	<1	<0.9	<1	<1	<1	<1
Dibenz(a,h)anthracene	0.01	0.004	*<1*	*<1*	*<1*	*<0.9*	*<1*	*<1*	*<1*	*<1*
Diethyl phthalate	78000	12000	<1	<1	<1	<0.9	<1	<1	<1	<1
Dimethyl phthalate	1005000	156000	<1	<1	<1	<0.9	<1	<1	<1	<1
Di-n-butyl phthalate	6390	1500	<1	<1	<1	<0.9	<1	<1	<1	<1
Fluoranthene	890	180	<1	<1	<1	<0.9	<1	<1	<1	<1
Fluorene	280	70	<1	<1	<1	<0.9	<1	<1	<1	<1
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<1*	*<1*	*<1*	*<0.9*	*<1*	*<1*	*<1*	*<1*
Naphthalene	9	3	<1	**2**	**27**	<0.9	**4**	<1	<1	<1

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	SB-30	SB-36	SB-37	SB-38	TW-03	TW-05	TW-07	TW-10
Location Identification and Sample Interval (Feet below ground surface)										
Laboratory Sample Identification			**A8175905**	**A8175816**	**A8175815**	**A8175809**	**A8169701**	**A8175805**	**A8169705**	**A8175806**
Date Collected			**2/19/08**	**2/19/08**	**2/19/08**	**2/19/08**	**2/18/08**	**2/19/08**	**2/18/08**	**2/19/08**
Phenanthrene	NA	NA	<1	<1	**2**	<0.9	<1	<1	<1	<1
Phenol	58000	900	<1	**7**	**7**	<0.9	**4**	<1	<1	<1
Pyrene	720	140	<1	<1	<1	<0.9	<1	<1	<1	<1
Pyridine	9	3	*<5*	*<5*	*<5*	*<5*	*<5*	*<5*	*<5*	*<5*
Quinoline	NA	NA	<5	<5	<5	<5	<5	<5	<5	<5

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	KDHE standards for 4-methylphenol used for 3+4-methylphenol.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-11	TW-12	TW-13	TW-14	TW-14-50 (DUP of TW-14)	TW-15	TW-16
Location Identification and Sample Interval (Feet below ground surface)			TW-11	TW-12	TW-13	TW-14	TW-14-50 (DUP of TW-14)	TW-15	TW-16
Laboratory Sample Identification			A8175803	A8169703	A8175802	A8175807	A8175808	A8175818	A8175804
Date Collected			2/19/08	2/18/08	2/19/08	2/19/08	2/19/08	2/19/08	2/19/08
Semivolatile Organic Compounds (ug/L)									
1,2-Dichlorobenzene	600	600	<1	<0.9	<0.9	<1	<0.9	<5	<1
1,3-Dichlorobenzene	NA	NA	<1	<0.9	<0.9	<1	<0.9	<5	<1
1,4-Dichlorobenzene	75	75	<1	<0.9	<0.9	<1	<0.9	<5	<1
2,4-Dimethylphenol	1800	280	<1	**6**	<0.9	<1	<0.9	**190**	**4**
2,4-Dinitrophenol	200	30	<5	<5	<5	<5	<5	<24	<5
2-Methylphenol (o-cresol)	4700	740	<1	<0.9	<0.9	<1	<0.9	<5	<1
3+4-Methylphenol (m&p-cresols) [(B)]	470	80	<5	<5	<5	<5	<5	<24	<5
4-Nitrophenol	NA	NA	<5	<5	<5	<5	<5	<24	<5
Acenaphthene	490	130	<1	<0.9	<0.9	<1	<0.9	<5	**2**
Anthracene	2300	620	<1	<0.9	<0.9	<1	<0.9	<5	<1
Benzo(a)anthracene	0.4	0.1	*<1*	*<0.9*	*<0.9*	*<1*	*<0.9*	*<5*	*<1*
Benzo(a)pyrene	0.2	0.2	*<1*	*<0.9*	*<0.9*	*<1*	*<0.9*	*<5*	*<1*
Benzo(b)fluoranthene	0.3	0.09	*<1*	*<0.9*	*<0.9*	*<1*	*<0.9*	*<5*	*<1*
Benzo(k)fluoranthene	3	1	<1	<0.9	<0.9	<1	<0.9	*<5*	<1
Bis(2-ethylhexyl)phthalate	6	6	<5	<5	<5	<5	<5	*<24*	<5
Chrysene	40	10	<1	<0.9	<0.9	<1	<0.9	<5	<1
Dibenz(a,h)anthracene	0.01	0.004	*<1*	*<0.9*	*<0.9*	*<1*	*<0.9*	*<5*	*<1*
Diethyl phthalate	78000	12000	<1	<0.9	<0.9	<1	<0.9	<5	<1
Dimethyl phthalate	1005000	156000	<1	<0.9	<0.9	<1	<0.9	<5	<1
Di-n-butyl phthalate	6390	1500	<1	<0.9	<0.9	<1	<0.9	<5	<1
Fluoranthene	890	180	<1	<0.9	<0.9	<1	<0.9	<5	<1
Fluorene	280	70	<1	<0.9	<0.9	<1	<0.9	<5	**1**
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<1*	*<0.9*	*<0.9*	*<1*	*<0.9*	*<5*	*<1*
Naphthalene	9	3	<1	**2**	**2**	**24**	**30**	*<5*	**28**

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-11**	**TW-12**	**TW-13**	**TW-14**	**TW-14-50 (DUP of TW-14)**	**TW-15**	**TW-16**
	Laboratory Sample Identification		**A8175803**	**A8169703**	**A8175802**	**A8175807**	**A8175808**	**A8175818**	**A8175804**
	Date Collected		**2/19/08**	**2/18/08**	**2/19/08**	**2/19/08**	**2/19/08**	**2/19/08**	**2/19/08**
Analyte (Units)									
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]								
	Non-Residental Scenario	**Residential Scenario**							
Phenanthrene	NA	NA	<1	<0.9	<0.9	<1	<0.9	<5	<1
Phenol	58000	900	<1	**9**	**28**	<1	<0.9	<5	**31**
Pyrene	720	140	<1	<0.9	<0.9	<1	<0.9	<5	<1
Pyridine	9	3	*<5*	*<5*	*<5*	*<5*	*<5*	*<24*	*<5*
Quinoline	NA	NA	<5	<5	<5	<5	<5	<24	<5

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	KDHE standards for 4-methylphenol used for 3+4-methylphenol.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-17	TW-18	TW-19	TW-20	TW-21	TW-22	TW-24S	TW-25S
Location Identification and Sample Interval (Feet below ground surface)			**TW-17**	**TW-18**	**TW-19**	**TW-20**	**TW-21**	**TW-22**	**TW-24S**	**TW-25S**
Laboratory Sample Identification			**A8169707**	**A8175817**	**A8169702**	**A8169710**	**A8169708**	**A8175903**	**A8175902**	**A8169709**
Date Collected			**2/18/08**	**2/19/08**	**2/18/08**	**2/18/08**	**2/18/08**	**2/19/08**	**2/19/08**	**2/18/08**
Semivolatile Organic Compounds (ug/L)										
1,2-Dichlorobenzene	600	600	<1	<1	<0.9	<1	<0.9	<1	<1	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	<0.9	<1	<0.9	<1	<1	<1
1,4-Dichlorobenzene	75	75	<1	<1	<0.9	<1	<0.9	<1	<1	<1
2,4-Dimethylphenol	1800	280	<1	<1	**3**	<1	<0.9	<1	<1	<1
2,4-Dinitrophenol	200	30	<5	<5	<5	<5	<5	<5	<5	<5
2-Methylphenol (o-cresol)	4700	740	<1	<1	<0.9	<1	<0.9	<1	<1	<1
3+4-Methylphenol (m&p-cresols) [(B)]	470	80	<5	<5	<5	<5	<5	<5	<5	<5
4-Nitrophenol	NA	NA	<5	<5	<5	<5	<5	<5	<5	<5
Acenaphthene	490	130	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Anthracene	2300	620	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Benzo(a)anthracene	0.4	0.1	*<1*	*<1*	*<0.9*	*<1*	*<0.9*	*<1*	*<1*	*<1*
Benzo(a)pyrene	0.2	0.2	*<1*	*<1*	*<0.9*	*<1*	*<0.9*	*<1*	*<1*	*<1*
Benzo(b)fluoranthene	0.3	0.09	*<1*	*<1*	*<0.9*	*<1*	*<0.9*	*<1*	*<1*	*<1*
Benzo(k)fluoranthene	3	1	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Bis(2-ethylhexyl)phthalate	6	6	<5	<5	<5	<5	<5	<5	<5	<5
Chrysene	40	10	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Dibenz(a,h)anthracene	0.01	0.004	*<1*	*<1*	*<0.9*	*<1*	*<0.9*	*<1*	*<1*	*<1*
Diethyl phthalate	78000	12000	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Dimethyl phthalate	1005000	156000	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Di-n-butyl phthalate	6390	1500	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Fluoranthene	890	180	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Fluorene	280	70	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<1*	*<1*	*<0.9*	*<1*	*<0.9*	*<1*	*<1*	*<1*
Naphthalene	9	3	<1	<1	**94**	<1	<0.9	<1	<1	<1

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-17	TW-18	TW-19	TW-20	TW-21	TW-22	TW-24S	TW-25S
Location Identification and Sample Interval (Feet below ground surface)			TW-17	TW-18	TW-19	TW-20	TW-21	TW-22	TW-24S	TW-25S
Laboratory Sample Identification			A8169707	A8175817	A8169702	A8169710	A8169708	A8175903	A8175902	A8169709
Date Collected			2/18/08	2/19/08	2/18/08	2/18/08	2/18/08	2/19/08	2/19/08	2/18/08
Phenanthrene	NA	NA	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Phenol	58000	900	<1	<1	**6**	<1	<0.9	<1	<1	<1
Pyrene	720	140	<1	<1	<0.9	<1	<0.9	<1	<1	<1
Pyridine	9	3	*<5*	*<5*	*<5*	*<5*	*<5*	*<5*	*<5*	*<5*
Quinoline	NA	NA	<5	<5	<5	<5	<5	<5	<5	<5

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	KDHE standards for 4-methylphenol used for 3+4-methylphenol.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-27S	TW-29	TW-31S	TW-32S	TW-34	TW-35	TW-36	TW-38
Location Identification and Sample Interval (Feet below ground surface)			TW-27S	TW-29	TW-31S	TW-32S	TW-34	TW-35	TW-36	TW-38
Laboratory Sample Identification			A8175904	A8169711	A8175901	A8183904	A8184008	A8169706	A8034301RE	A8169704
Date Collected			2/19/08	2/18/08	2/19/08	2/20/08	2/22/08	2/18/08	1/9/08	2/18/08
Semivolatile Organic Compounds (ug/L)										
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1	<1	<0.9	<10	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1	<1	<0.9	<10	<1
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1	<1	<0.9	<10	<1
2,4-Dimethylphenol	1800	280	<1	<1	<1	<1	<1	<0.9	<10	<1
2,4-Dinitrophenol	200	30	<5	<5	<5	<5	<5	<5	*<48*	<5
2-Methylphenol (o-cresol)	4700	740	<1	<1	<1	<1	<1	<0.9	<10	<1
3+4-Methylphenol (m&p-cresols) [(B)]	470	80	<5	<5	<5	<5	<5	<5	<19	<5
4-Nitrophenol	NA	NA	<5	<5	<5	<5	<5	<5	<10	<5
Acenaphthene	490	130	<1	<1	<1	<1	<1	<0.9	<5	<1
Anthracene	2300	620	<1	<1	<1	<1	<1	<0.9	<5	<1
Benzo(a)anthracene	0.4	0.1	*<1*	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<5*	*<1*
Benzo(a)pyrene	0.2	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<5*	*<1*
Benzo(b)fluoranthene	0.3	0.09	*<1*	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<5*	*<1*
Benzo(k)fluoranthene	3	1	<1	<1	<1	<1	<1	<0.9	*<5*	<1
Bis(2-ethylhexyl)phthalate	6	6	**6**	<5	<5	<5	<5	<5	*<10*	<5
Chrysene	40	10	<1	<1	<1	<1	<1	<0.9	<5	<1
Dibenz(a,h)anthracene	0.01	0.004	*<1*	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<5*	*<1*
Diethyl phthalate	78000	12000	<1	<1	<1	<1	<1	<0.9	<10	<1
Dimethyl phthalate	1005000	156000	<1	<1	<1	<1	<1	<0.9	<10	<1
Di-n-butyl phthalate	6390	1500	<1	<1	<1	<1	<1	<0.9	<10	<1
Fluoranthene	890	180	<1	<1	<1	<1	<1	<0.9	<5	<1
Fluorene	280	70	<1	<1	<1	<1	<1	<0.9	<5	<1
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<1*	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<5*	*<1*
Naphthalene	9	3	<1	**2**	<1	<1	<1	<0.9	**22**	<1

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-27S	TW-29	TW-31S	TW-32S	TW-34	TW-35	TW-36	TW-38
Location Identification and Sample Interval (Feet below ground surface)			**TW-27S**	**TW-29**	**TW-31S**	**TW-32S**	**TW-34**	**TW-35**	**TW-36**	**TW-38**
Laboratory Sample Identification			**A8175904**	**A8169711**	**A8175901**	**A8183904**	**A8184008**	**A8169706**	**A8034301RE**	**A8169704**
Date Collected			**2/19/08**	**2/18/08**	**2/19/08**	**2/20/08**	**2/22/08**	**2/18/08**	**1/9/08**	**2/18/08**
Phenanthrene	NA	NA	<1	<1	<1	<1	<1	<0.9	<5	<1
Phenol	58000	900	<1	<1	<1	<1	<1	<0.9	<10	<1
Pyrene	720	140	<1	<1	<1	<1	<1	<0.9	<5	<1
Pyridine	9	3	*<5*	*<5*	*<5*	*<5*	*<5*	*<5*	*<24*	*<5*
Quinoline	NA	NA	<5	<5	<5	<5	<5	<5	<10	<5

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	KDHE standards for 4-methylphenol used for 3+4-methylphenol.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[A] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[A] Residential Scenario	TW-39	TW-40	TW-41	TW-42	TW-43	TW-45	TW-46
Location Identification and Sample Interval (Feet below ground surface)			TW-39	TW-40	TW-41	TW-42	TW-43	TW-45	TW-46
Laboratory Sample Identification			A8183901	A8184009	A8184007	A8184003	A8184002	A8183914	A8183912
Date Collected			2/20/08	2/22/08	2/22/08	2/22/08	2/22/08	2/20/08	2/20/08
Semivolatile Organic Compounds (ug/L)									
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1	<0.9	<1	<5
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1	<0.9	<1	<5
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1	<0.9	<1	<5
2,4-Dimethylphenol	1800	280	<1	<1	<1	<1	<0.9	<1	**6**
2,4-Dinitrophenol	200	30	<5	<5	<5	<5	<5	<5	<24
2-Methylphenol (o-cresol)	4700	740	<1	<1	<1	<1	<0.9	<1	<5
3+4-Methylphenol (m&p-cresols) [B]	470	80	<5	<5	<5	<5	<5	<5	<24
4-Nitrophenol	NA	NA	<5	<5	<5	<5	<5	<5	<24
Acenaphthene	490	130	<1	<1	<1	**5**	<0.9	**2**	**7**
Anthracene	2300	620	<1	<1	<1	**2**	<0.9	<1	<5
Benzo(a)anthracene	0.4	0.1	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<1*	*<5*
Benzo(a)pyrene	0.2	0.2	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<1*	*<5*
Benzo(b)fluoranthene	0.3	0.09	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<1*	*<5*
Benzo(k)fluoranthene	3	1	<1	<1	<1	<1	<0.9	<1	*<5*
Bis(2-ethylhexyl)phthalate	6	6	**6**	<5	<5	<5	<5	<5	*<24*
Chrysene	40	10	<1	<1	<1	<1	<0.9	<1	<5
Dibenz(a,h)anthracene	0.01	0.004	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<1*	*<5*
Diethyl phthalate	78000	12000	<1	<1	<1	<1	<0.9	<1	<5
Dimethyl phthalate	1005000	156000	<1	<1	<1	<1	<0.9	<1	<5
Di-n-butyl phthalate	6390	1500	<1	<1	<1	<1	<0.9	<1	<5
Fluoranthene	890	180	<1	<1	<1	<1	<0.9	<1	<5
Fluorene	280	70	<1	<1	**1**	**4**	<0.9	**2**	**7**
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<1*	*<1*	*<1*	*<1*	*<0.9*	*<1*	*<5*
Naphthalene	9	3	<1	<1	<1	**61**	<0.9	**110**	**260**

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-39**	**TW-40**	**TW-41**	**TW-42**	**TW-43**	**TW-45**	**TW-46**
	Laboratory Sample Identification		**A8183901**	**A8184009**	**A8184007**	**A8184003**	**A8184002**	**A8183914**	**A8183912**
	Date Collected		**2/20/08**	**2/22/08**	**2/22/08**	**2/22/08**	**2/22/08**	**2/20/08**	**2/20/08**
Analyte (Units)	**Kansas Tier II Risk-Based Standards GW Pathway[(A)]**								
	Non-Residental Scenario	**Residential Scenario**							
Phenanthrene	NA	NA	<1	<1	**1**	**10**	<0.9	**2**	**13**
Phenol	58000	900	<1	<1	<1	**5**	<0.9	<1	**18**
Pyrene	720	140	<1	<1	<1	**2**	<0.9	<1	<5
Pyridine	9	3	*<5*	*<5*	*<5*	*<5*	*<5*	*<5*	*<24*
Quinoline	NA	NA	<5	<5	<5	<5	<5	<5	<24

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	KDHE standards for 4-methylphenol used for 3+4-methylphenol.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 15 of 20)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-47	TW-48	TW-51	TW-52	TW-53	TW-55	TW-56	TW-58
Location Identification and Sample Interval (Feet below ground surface)			TW-47	TW-48	TW-51	TW-52	TW-53	TW-55	TW-56	TW-58
Laboratory Sample Identification			A8183913/DL	A8169712	A8184012	A8184011	A8187801	A8184010	A8169715	A8169716
Date Collected			2/20/08	2/18/08	2/22/08	2/22/08	2/23/08	2/22/08	2/18/08	2/18/08
Semivolatile Organic Compounds (ug/L)										
1,2-Dichlorobenzene	600	600	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
1,3-Dichlorobenzene	NA	NA	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
1,4-Dichlorobenzene	75	75	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
2,4-Dimethylphenol	1800	280	<1	<0.9	**1**	<1	**6**	**14000D**	**1**	**0.9**
2,4-Dinitrophenol	200	30	<5	<5	<5	<5	<5	*<48*	<5	<5
2-Methylphenol (o-cresol)	4700	740	<1	<0.9	<1	<1	<1	**6200D**	<0.9	<0.9
3+4-Methylphenol (m&p-cresols) [(B)]	470	80	<5	<5	<5	<5	<5	**7200D**	<5	<5
4-Nitrophenol	NA	NA	<5	<5	<5	<5	<5	<48	<5	<5
Acenaphthene	490	130	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
Anthracene	2300	620	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
Benzo(a)anthracene	0.4	0.1	*<1*	*<0.9*	*<1*	*<1*	*<1*	*<10*	*<0.9*	*<0.9*
Benzo(a)pyrene	0.2	0.2	*<1*	*<0.9*	*<1*	*<1*	*<1*	*<10*	*<0.9*	*<0.9*
Benzo(b)fluoranthene	0.3	0.09	*<1*	*<0.9*	*<1*	*<1*	*<1*	*<10*	*<0.9*	*<0.9*
Benzo(k)fluoranthene	3	1	<1	<0.9	<1	<1	<1	*<10*	<0.9	<0.9
Bis(2-ethylhexyl)phthalate	6	6	<5	<5	<5	<5	<5	*<48*	<5	<5
Chrysene	40	10	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
Dibenz(a,h)anthracene	0.01	0.004	*<1*	*<0.9*	*<1*	*<1*	*<1*	*<10*	*<0.9*	*<0.9*
Diethyl phthalate	78000	12000	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
Dimethyl phthalate	1005000	156000	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
Di-n-butyl phthalate	6390	1500	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
Fluoranthene	890	180	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
Fluorene	280	70	1	<0.9	<1	<1	<1	<10	<0.9	<0.9
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<1*	*<0.9*	*<1*	*<1*	*<1*	*<10*	*<0.9*	*<0.9*
Naphthalene	9	3	**210D**	<0.9	**17**	**16**	<1	**82**	**22**	**34**

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-47	TW-48	TW-51	TW-52	TW-53	TW-55	TW-56	TW-58
Location Identification and Sample Interval (Feet below ground surface)			TW-47	TW-48	TW-51	TW-52	TW-53	TW-55	TW-56	TW-58
Laboratory Sample Identification			A8183913/DL	A8169712	A8184012	A8184011	A8187801	A8184010	A8169715	A8169716
Date Collected			2/20/08	2/18/08	2/22/08	2/22/08	2/23/08	2/22/08	2/18/08	2/18/08
Phenanthrene	NA	NA	**2**	<0.9	<1	**2**	<1	<10	**1**	<0.9
Phenol	58000	900	<1	<0.9	**1**	<1	**11**	**2000D**	<0.9	<0.9
Pyrene	720	140	<1	<0.9	<1	<1	<1	<10	<0.9	<0.9
Pyridine	9	3	*<5*	*<5*	*<5*	*<5*	*<5*	*<48*	*<5*	*<5*
Quinoline	NA	NA	<5	<5	<5	<5	<5	<48	<5	<5

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	KDHE standards for 4-methylphenol used for 3+4-methylphenol.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 17 of 20)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-60	TW-63	TW-63-51 (DUP of TW-63)	TW-64	TW-65	TW-67	TW-69
Location Identification and Sample Interval (Feet below ground surface)			TW-60	TW-63	TW-63-51 (DUP of TW-63)	TW-64	TW-65	TW-67	TW-69
Laboratory Sample Identification			A8169718	A8175811	A8175812	A8169717	A8169714	A8175813/DL	A8169713
Date Collected			2/18/08	2/19/08	2/19/08	2/18/08	2/18/08	2/19/08	2/18/08
Semivolatile Organic Compounds (ug/L)									
1,2-Dichlorobenzene	600	600	<0.9	<1	<0.9	<0.9	<0.9	<1	<0.9
1,3-Dichlorobenzene	NA	NA	<0.9	<1	<0.9	<0.9	<0.9	<1	<0.9
1,4-Dichlorobenzene	75	75	<0.9	<1	<0.9	<0.9	<0.9	<1	<0.9
2,4-Dimethylphenol	1800	280	<0.9	<1	<0.9	<0.9	<0.9	**1300D**	<0.9
2,4-Dinitrophenol	200	30	<5	<5	<5	<5	<5	<5	<5
2-Methylphenol (o-cresol)	4700	740	<0.9	<1	<0.9	<0.9	<0.9	**6300D**	<0.9
3+4-Methylphenol (m&p-cresols) [(B)]	470	80	<5	<5	<5	<5	<5	**9400D**	<5
4-Nitrophenol	NA	NA	<5	<5	<5	<5	<5	<5	<5
Acenaphthene	490	130	**6**	**2**	<0.9	**1**	<0.9	<1	<0.9
Anthracene	2300	620	**1**	<1	<0.9	**3**	<0.9	<1	<0.9
Benzo(a)anthracene	0.4	0.1	*<0.9*	*<1*	*<0.9*	*<0.9*	*<0.9*	*<1*	*<0.9*
Benzo(a)pyrene	0.2	0.2	*<0.9*	*<1*	*<0.9*	*<0.9*	*<0.9*	*<1*	*<0.9*
Benzo(b)fluoranthene	0.3	0.09	*<0.9*	*<1*	*<0.9*	*<0.9*	*<0.9*	*<1*	*<0.9*
Benzo(k)fluoranthene	3	1	<0.9	<1	<0.9	<0.9	<0.9	<1	<0.9
Bis(2-ethylhexyl)phthalate	6	6	<5	<5	<5	<5	<5	<5	<5
Chrysene	40	10	<0.9	<1	<0.9	<0.9	<0.9	<1	<0.9
Dibenz(a,h)anthracene	0.01	0.004	*<0.9*	*<1*	*<0.9*	*<0.9*	*<0.9*	*<1*	*<0.9*
Diethyl phthalate	78000	12000	<0.9	<1	<0.9	<0.9	<0.9	<1	<0.9
Dimethyl phthalate	1005000	156000	<0.9	<1	<0.9	<0.9	<0.9	<1	<0.9
Di-n-butyl phthalate	6390	1500	<0.9	<1	<0.9	<0.9	<0.9	<1	<0.9
Fluoranthene	890	180	<0.9	<1	<0.9	<0.9	<0.9	<1	<0.9
Fluorene	280	70	**6**	<1	<0.9	<0.9	<0.9	**1**	<0.9
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<0.9*	*<1*	*<0.9*	*<0.9*	*<0.9*	*<1*	*<0.9*
Naphthalene	9	3	**66**	<1	<0.9	<0.9	<0.9	**13**	<0.9

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-60	TW-63	TW-63-51 (DUP of TW-63)	TW-64	TW-65	TW-67	TW-69
Location Identification and Sample Interval (Feet below ground surface)			TW-60	TW-63	TW-63-51 (DUP of TW-63)	TW-64	TW-65	TW-67	TW-69
Laboratory Sample Identification			A8169718	A8175811	A8175812	A8169717	A8169714	A8175813/DL	A8169713
Date Collected			2/18/08	2/19/08	2/19/08	2/18/08	2/18/08	2/19/08	2/18/08
Phenanthrene	NA	NA	**14**	<1	<0.9	**3**	<0.9	<1	<0.9
Phenol	58000	900	**1**	<1	<0.9	**13**	<0.9	**5900D**	<0.9
Pyrene	720	140	<0.9	<1	<0.9	**3**	<0.9	<1	<0.9
Pyridine	9	3	*<5*	*<5*	*<5*	*<5*	*<5*	**40**	*<5*
Quinoline	NA	NA	<5	<5	<5	<5	<5	<480	<5

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	KDHE standards for 4-methylphenol used for 3+4-methylphenol.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-73	TW-74	TW-75	TW-76	TW-77	TW-79	W-16S	W-26
Location Identification and Sample Interval (Feet below ground surface)			**TW-73**	**TW-74**	**TW-75**	**TW-76**	**TW-77**	**TW-79**	**W-16S**	**W-26**
Laboratory Sample Identification			**A8183902**	**A8184001**	**A8184006**	**A8184005**	**A7E64002**	**A8100901**	**A8183903**	**A8175801**
Date Collected			**2/20/08**	**2/22/08**	**2/22/08**	**2/22/08**	**12/17/07**	**1/29/08**	**2/20/08**	**2/19/08**
Semivolatile Organic Compounds (ug/L)										
1,2-Dichlorobenzene	600	600	<1	<1	<1	<1	<48	<1	<1	<1
1,3-Dichlorobenzene	NA	NA	<1	<1	<1	<1	<48	<1	<1	<1
1,4-Dichlorobenzene	75	75	<1	<1	<1	<1	<48	<1	<1	<1
2,4-Dimethylphenol	1800	280	<1	<1	**31**	<1	<48	<1	<1	<1
2,4-Dinitrophenol	200	30	<5	<5	<5	<5	*<240*	<5	<5	<5
2-Methylphenol (o-cresol)	4700	740	<1	<1	**7**	<1	<48	<1	<1	<1
3+4-Methylphenol (m&p-cresols) [(B)]	470	80	<5	<5	<5	<5	*<95*	<5	<5	<5
4-Nitrophenol	NA	NA	<5	<5	<5	<5	<48	<5	<5	<5
Acenaphthene	490	130	<1	<1	<1	<1	<24	<1	<1	<1
Anthracene	2300	620	<1	<1	<1	<1	<24	<1	<1	<1
Benzo(a)anthracene	0.4	0.1	*<1*	*<1*	*<1*	*<1*	*<24*	*<1*	*<1*	*<1*
Benzo(a)pyrene	0.2	0.2	*<1*	*<1*	*<1*	*<1*	*<24*	*<1*	*<1*	*<1*
Benzo(b)fluoranthene	0.3	0.09	*<1*	*<1*	*<1*	*<1*	*<24*	*<1*	*<1*	*<1*
Benzo(k)fluoranthene	3	1	<1	<1	<1	<1	*<24*	<1	<1	<1
Bis(2-ethylhexyl)phthalate	6	6	<5	<5	<5	<5	*<48*	<5	<5	<5
Chrysene	40	10	<1	<1	<1	<1	*<24*	<1	<1	<1
Dibenz(a,h)anthracene	0.01	0.004	*<1*	*<1*	*<1*	*<1*	*<24*	*<1*	*<1*	*<1*
Diethyl phthalate	78000	12000	<1	<1	<1	<1	<48	<1	<1	<1
Dimethyl phthalate	1005000	156000	<1	<1	<1	<1	<48	<1	<1	<1
Di-n-butyl phthalate	6390	1500	<1	<1	<1	<1	<48	<1	<1	<1
Fluoranthene	890	180	<1	<1	<1	<1	<24	<1	<1	<1
Fluorene	280	70	<1	<1	<1	<1	<24	<1	<1	<1
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<1*	*<1*	*<1*	*<1*	*<24*	*<1*	*<1*	*<1*
Naphthalene	9	3	<1	<1	**25**	<1	*<24*	<1	<1	<1

Table 10c

Groundwater Sample Analytical Data - SVOCs
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 20 of 20)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-73	TW-74	TW-75	TW-76	TW-77	TW-79	W-16S	W-26
Location Identification and Sample Interval (Feet below ground surface)			TW-73	TW-74	TW-75	TW-76	TW-77	TW-79	W-16S	W-26
Laboratory Sample Identification			A8183902	A8184001	A8184006	A8184005	A7E64002	A8100901	A8183903	A8175801
Date Collected			2/20/08	2/22/08	2/22/08	2/22/08	12/17/07	1/29/08	2/20/08	2/19/08
Phenanthrene	NA	NA	<1	<1	<1	<1	<24	<1	<1	<1
Phenol	58000	900	<1	<1	<1	<1	<48	<1	<1	<1
Pyrene	720	140	<1	<1	<1	<1	<24	<1	<1	<1
Pyridine	9	3	*<5*	*<5*	*<5*	*<5*	*<120*	*<5*	*<5*	*<5*
Quinoline	NA	NA	<5	<5	<5	<5	<48	<5	<5	<5

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
(B)	KDHE standards for 4-methylphenol used for 3+4-methylphenol.
D	Analyte reported from secondary dilution.
DUP	Duplicate sample

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	ES-03	FINA/MW-38	FINA/MW-38-53 (DUP of FINA/MW-38)	N2-4	N2-4	N3-2
Location Identification and Sample Interval (Feet below ground surface)								
Laboratory Sample Identification			RSB0643-05	A8183908	A8183909	A8164001	RSA0674-01	A8160505
Date Collected			2/19/09	2/20/08	2/20/08	2/15/08	1/21/09	2/15/08
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**0.67**	**0.14**	**0.58**	**0.88**	**1.3**	**0.72**
Gasoline range organics	0.5	0.5	**0.33**	**0.16**	**1.4**	**0.8**	**1.9**	**0.21**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**ES-03**	**FINA/MW-38**	**FINA/MW-38-53 (DUP of FINA/MW-38)**	**N2-4**	**N2-4**	**N3-2**
	Laboratory Sample Identification		**RSB0643-05**	**A8183908**	**A8183909**	**A8164001**	**RSA0674-01**	**A8160505**
	Date Collected		**2/19/09**	**2/20/08**	**2/20/08**	**2/15/08**	**1/21/09**	**2/15/08**
Analyte (Units)	**Kansas Tier II Risk-Based Standards GW Pathway[(A)]**							
	Non-Residental Scenario	**Residential Scenario**						
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**N3-2**	**N3-3**	**N3-3**	**N3-4**	**N4-1**	**N4-1**
	Laboratory Sample Identification		**RSB0691-04**	**A8164002**	**RSB0691-02**	**RSB0789-03**	**A8164008**	**RSA0674-03**
	Date Collected		**2/20/09**	**2/15/08**	**2/20/09**	**2/24/09**	**2/16/08**	**1/21/09**
Analyte (Units)								
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]							
	Non-Residental Scenario	**Residential Scenario**						
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**0.29JB**	**0.45**	**0.68B**	**0.87B**	<0.096	<0.47
Gasoline range organics	0.5	0.5	**0.081**	**0.64**	**0.49**	**0.019J**	**0.033J**	**0.017J**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	N3-2	N3-3	N3-3	N3-4	N4-1	N4-1
Location Identification and Sample Interval (Feet below ground surface)			**N3-2**	**N3-3**	**N3-3**	**N3-4**	**N4-1**	**N4-1**
Laboratory Sample Identification			**RSB0691-04**	**A8164002**	**RSB0691-02**	**RSB0789-03**	**A8164008**	**RSA0674-03**
Date Collected			**2/20/09**	**2/15/08**	**2/20/09**	**2/24/09**	**2/16/08**	**1/21/09**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	N4-1-51 (DUP of N4-1)	N4-2	N4-2	N5-1	N5-2	N5-3
Location Identification and Sample Interval (Feet below ground surface)								
Laboratory Sample Identification			**A8164009**	**A8183911**	**RSA0706-01**	**A8184004**	**A8183905**	**A8183906**
Date Collected			**2/16/08**	**2/20/08**	**1/22/09**	**2/22/08**	**2/20/08**	**2/20/08**
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	<0.096	<0.096	<0.48	<0.096	<0.098	**0.23**
Gasoline range organics	0.5	0.5	**0.048J**	**0.026J**	**0.02**	<0.05	<0.05	**0.008J**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**N4-1-51 (DUP of N4-1)**	**N4-2**	**N4-2**	**N5-1**	**N5-2**	**N5-3**
	Laboratory Sample Identification		**A8164009**	**A8183911**	**RSA0706-01**	**A8184004**	**A8183905**	**A8183906**
	Date Collected		**2/16/08**	**2/20/08**	**1/22/09**	**2/22/08**	**2/20/08**	**2/20/08**
Analyte (Units)	**Kansas Tier II Risk-Based Standards GW Pathway[(A)]**							
	Non-Residental Scenario	**Residential Scenario**						
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	N5-3-52 (DUP of N5-3)	OW-01	OW-02	OW-03	OW-04	OW-04-50 (DUP of OW-04)	OW-05
Location Identification and Sample Interval (Feet below ground surface)									
Laboratory Sample Identification			A8183907	A8160507	A8164014	A8164011	A8160503	A8160504	A8164007
Date Collected			2/20/08	2/15/08	2/16/08	2/16/08	2/15/08	2/15/08	2/16/08
DRO/GRO (mg/L)									
Diesel range organics	0.72	0.5	**0.19**	**0.3**	8.7	<0.096	<0.094	<0.095	<0.094
Gasoline range organics	0.5	0.5	**0.019J**	<0.05	1.6	<0.05	<0.05	<0.05	<0.05
TPH (mg/L)									
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)									
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	N5-3-52 (DUP of N5-3)	OW-01	OW-02	OW-03	OW-04	OW-04-50 (DUP of OW-04)	OW-05
Location Identification and Sample Interval (Feet below ground surface)									
Laboratory Sample Identification			A8183907	A8160507	A8164014	A8164011	A8160503	A8160504	A8164007
Date Collected			2/20/08	2/15/08	2/16/08	2/16/08	2/15/08	2/15/08	2/16/08
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)									
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	OW-08	OW-09	OW-10	OW-12	OW-13	OW-14	OW-21
Location Identification and Sample Interval (Feet below ground surface)			OW-08	OW-09	OW-10	OW-12	OW-13	OW-14	OW-21
Laboratory Sample Identification			A8164005	A8164003	A8164006	A8164015	RSA0674-02	A8160501	RSB0789-05
Date Collected			2/16/08	2/15/08	2/16/08	2/16/08	1/21/09	2/15/08	2/24/09
DRO/GRO (mg/L)									
Diesel range organics	0.72	0.5	**3.2**	**0.75**	**1.4**	**2.4**	**8.4**	**0.24**	**1.4B**
Gasoline range organics	0.5	0.5	**1.7**	**1.1**	**0.096**	**0.024J**	**9.1**	**0.015J**	**0.13**
TPH (mg/L)									
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)									
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	OW-08	OW-09	OW-10	OW-12	OW-13	OW-14	OW-21
Location Identification and Sample Interval (Feet below ground surface)									
Laboratory Sample Identification			A8164005	A8164003	A8164006	A8164015	RSA0674-02	A8160501	RSB0789-05
Date Collected			2/16/08	2/15/08	2/16/08	2/16/08	1/21/09	2/15/08	2/24/09
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)									
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**OW-23T**	**OW-26**	**OW-27T**	**OW-28T**	**OW-29**	**OW-29**
	Laboratory Sample Identification		**A8183910**	**A8183915**	**RSB0732-04**	**RSB0732-05**	**A8164012**	**RSB0643-01**
	Date Collected		**2/20/08**	**2/20/08**	**2/23/09**	**2/23/09**	**2/16/08**	**2/19/09**
Analyte (Units)								
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]							
	Non-Residental Scenario	**Residential Scenario**						
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**2**	**0.29**	**1.4B**	**2.9B**	**4.4**	**3.1**
Gasoline range organics	0.5	0.5	**0.94**	**0.058**	**0.45**	**1**	**2.7**	**3.6**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	OW-23T	OW-26	OW-27T	OW-28T	OW-29	OW-29
Location Identification and Sample Interval (Feet below ground surface)			**OW-23T**	**OW-26**	**OW-27T**	**OW-28T**	**OW-29**	**OW-29**
Laboratory Sample Identification			**A8183910**	**A8183915**	**RSB0732-04**	**RSB0732-05**	**A8164012**	**RSB0643-01**
Date Collected			**2/20/08**	**2/20/08**	**2/23/09**	**2/23/09**	**2/16/08**	**2/19/09**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		OW-30	OW-31	OW-31	OW-32	OW-32	OW-33
	Laboratory Sample Identification		RSB0643-02	A8160506	RSB0643-03	A8160502	RSB0643-04	RSB0643-06
	Date Collected		2/19/09	2/15/08	2/19/09	2/15/08	2/19/09	2/19/09
Analyte (Units)	**Kansas Tier II Risk-Based Standards GW Pathway[(A)]**							
	Non-Residental Scenario	**Residential Scenario**						
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**0.85**	**2.1**	**1.9**	**1.4**	**1.4**	**1**
Gasoline range organics	0.5	0.5	**0.39**	**4.1**	**3.1**	**1.7**	**0.83**	**0.36**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	OW-30	OW-31	OW-31	OW-32	OW-32	OW-33
Location Identification and Sample Interval (Feet below ground surface)			**OW-30**	**OW-31**	**OW-31**	**OW-32**	**OW-32**	**OW-33**
Laboratory Sample Identification			**RSB0643-02**	**A8160506**	**RSB0643-03**	**A8160502**	**RSB0643-04**	**RSB0643-06**
Date Collected			**2/19/09**	**2/15/08**	**2/19/09**	**2/15/08**	**2/19/09**	**2/19/09**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 15 of 62)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	OW-35	OW-36	OW-37	OW-39	SB-08	SB-09	SB-11
Location Identification and Sample Interval (Feet below ground surface)			OW-35	OW-36	OW-37	OW-39	SB-08	SB-09	SB-11
Laboratory Sample Identification			RSB0789-06	RSB0691-03	A8164004	A8164013	A8184013	A8175810	A8175814
Date Collected			2/24/09	2/20/09	2/15/08	2/16/08	2/22/08	2/19/08	2/19/08
DRO/GRO (mg/L)									
Diesel range organics	0.72	0.5	**0.77B**	**3.4B**	**5.6**	<0.096	**1.1**	**9.2**	**1.2**
Gasoline range organics	0.5	0.5	**0.51**	**3.5**	**6.7**	<0.05	**0.14**	**2.2**	**0.62**
TPH (mg/L)									
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)									
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 16 of 62)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	OW-35	OW-36	OW-37	OW-39	SB-08	SB-09	SB-11
Location Identification and Sample Interval (Feet below ground surface)									
Laboratory Sample Identification			**RSB0789-06**	**RSB0691-03**	**A8164004**	**A8164013**	**A8184013**	**A8175810**	**A8175814**
Date Collected			**2/24/09**	**2/20/09**	**2/15/08**	**2/16/08**	**2/22/08**	**2/19/08**	**2/19/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)									
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 17 of 62)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	SB-17	SB-30	SB-36	SB-37	SB-38	SB-38	SB-538 (DUP of SB-38)
Location Identification and Sample Interval (Feet below ground surface)			SB-17	SB-30	SB-36	SB-37	SB-38	SB-38	SB-538 (DUP of SB-38)
Laboratory Sample Identification			A8183916	A8175905	A8175816	A8175815	A8175809	RSB0789-01	RSB0789-02
Date Collected			2/20/08	2/19/08	2/19/08	2/19/08	2/19/08	2/24/09	2/24/09
DRO/GRO (mg/L)									
Diesel range organics	0.72	0.5	**6.9**	**4.5**	**1.6**	**100**	**0.16**	**0.47JB**	**0.34JB**
Gasoline range organics	0.5	0.5	**4.8**	**0.47J**	**4.6**	**5.9**	**0.017J**	**0.018J**	**0.03**
TPH (mg/L)									
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)									
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	SB-17	SB-30	SB-36	SB-37	SB-38	SB-38	SB-538 (DUP of SB-38)
Location Identification and Sample Interval (Feet below ground surface)									
Laboratory Sample Identification			A8183916	A8175905	A8175816	A8175815	A8175809	RSB0789-01	RSB0789-02
Date Collected			2/20/08	2/19/08	2/19/08	2/19/08	2/19/08	2/24/09	2/24/09
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)									
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-03	TW-05	TW-07	TW-10	TW-11
Location Identification and Sample Interval (Feet below ground surface)			**TW-03**	**TW-05**	**TW-07**	**TW-10**	**TW-11**
Laboratory Sample Identification			**A8169701/360-15169-5**	**A8175805**	**A8169705**	**A8175806**	**A8175803**
Date Collected			**2/18/08**	**2/19/08**	**2/18/08**	**2/19/08**	**2/19/08**
DRO/GRO (mg/L)							
Diesel range organics	0.72	0.5	**5.4**	**4.4**	<0.097	**7.5**	**2.4**
Gasoline range organics	0.5	0.5	**2.4**	**0.67**	**0.059**	**0.59**	**0.027J**
TPH (mg/L)							
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)							
2-Methylnaphthalene	33	9	*<10*	n/a	n/a	n/a	n/a
Acenaphthene	490	130	<10	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	<10	n/a	n/a	n/a	n/a
Anthracene	2,300	620	<10	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	*<10*	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	*<10*	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	*<10*	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<10	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	*<10*	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**230**	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**230**	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	<100	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	<100	n/a	n/a	n/a	n/a
Chrysene	40	10	<10	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	*<10*	n/a	n/a	n/a	n/a
Fluoranthene	890	180	<10	n/a	n/a	n/a	n/a
Fluorene	280	70	<10	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-03	TW-05	TW-07	TW-10	TW-11
Location Identification and Sample Interval (Feet below ground surface)			**TW-03**	**TW-05**	**TW-07**	**TW-10**	**TW-11**
Laboratory Sample Identification			**A8169701/360-15169-5**	**A8175805**	**A8169705**	**A8175806**	**A8175803**
Date Collected			**2/18/08**	**2/19/08**	**2/18/08**	**2/19/08**	**2/19/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<10*	n/a	n/a	n/a	n/a
Naphthalene	9	3	*<10*	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	<10	n/a	n/a	n/a	n/a
Pyrene	720	140	<10	n/a	n/a	n/a	n/a
Total EPH	NA	NA	**230**	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)							
Benzene	5	5	**150**	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	<500	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	**720**	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	**1200**	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<500	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**930**	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	<25	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	**210**	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	**450**	n/a	n/a	n/a	n/a
Naphthalene	9	3	*<50*	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	**25**	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	<25	n/a	n/a	n/a	n/a
Total VPH	NA	NA	**1200**	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-12	TW-13	TW-14	TW-14-50 (DUP of TW-14)	TW-15	TW-16
Location Identification and Sample Interval (Feet below ground surface)			TW-12	TW-13	TW-14	TW-14-50 (DUP of TW-14)	TW-15	TW-16
Laboratory Sample Identification			A8169703/360-15169-6	A8175802	A8175807	A8175808	A8175818	A8175804
Date Collected			2/18/08	2/19/08	2/19/08	2/19/08	2/19/08	2/19/08
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**3.8**	**0.27**	**0.9**	**1**	**19**	**3.6**
Gasoline range organics	0.5	0.5	**7.2**	**0.96**	**3.5**	**3.8**	**0.28J**	**6**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	*<10*	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	<10	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	<10	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	<10	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	*<10*	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	*<10*	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	*<10*	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<10	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	*<10*	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**380**	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**380**	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	100	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	<10	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	*<10*	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	<10	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	<10	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-12	TW-13	TW-14	TW-14-50 (DUP of TW-14)	TW-15	TW-16
Location Identification and Sample Interval (Feet below ground surface)			**TW-12**	**TW-13**	**TW-14**	**TW-14-50 (DUP of TW-14)**	**TW-15**	**TW-16**
Laboratory Sample Identification			**A8169703/360-15169-6**	**A8175802**	**A8175807**	**A8175808**	**A8175818**	**A8175804**
Date Collected			**2/18/08**	**2/19/08**	**2/19/08**	**2/19/08**	**2/19/08**	**2/19/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<10*	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	*<10*	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	<10	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	<10	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	**480**	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	**930**	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	**1600**	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	**2500**	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	**2300**	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<500	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	**1700**	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	**130**	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	**290**	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	*<25*	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	*<50*	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	<25	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	<25	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	**3800**	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-17	TW-18	TW-19	TW-20	TW-21	TW-22	TW-23D
Location Identification and Sample Interval (Feet below ground surface)			TW-17	TW-18	TW-19	TW-20	TW-21	TW-22	TW-23D
Laboratory Sample Identification			A8169707	A8175817	A8169702	A8169710	A8169708	A8175903	RSB0691-05
Date Collected			2/18/08	2/19/08	2/18/08	2/18/08	2/18/08	2/19/08	2/20/09
DRO/GRO (mg/L)									
Diesel range organics	0.72	0.5	**0.51**	<0.096	**3.1**	**0.46**	**2.9**	**0.37**	<0.47
Gasoline range organics	0.5	0.5	<0.05	<0.05	**12**	<0.05	**0.024J**	**0.037J**	<0.025
TPH (mg/L)									
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)									
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-17	TW-18	TW-19	TW-20	TW-21	TW-22	TW-23D
Location Identification and Sample Interval (Feet below ground surface)			**TW-17**	**TW-18**	**TW-19**	**TW-20**	**TW-21**	**TW-22**	**TW-23D**
Laboratory Sample Identification			**A8169707**	**A8175817**	**A8169702**	**A8169710**	**A8169708**	**A8175903**	**RSB0691-05**
Date Collected			**2/18/08**	**2/19/08**	**2/18/08**	**2/18/08**	**2/18/08**	**2/19/08**	**2/20/09**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)									
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-24S	TW-24D	TW-524 (DUP of TW-24D)	TW-25S	TW-25D	TW-27S
Location Identification and Sample Interval (Feet below ground surface)			**TW-24S**	**TW-24D**	**TW-524 (DUP of TW-24D)**	**TW-25S**	**TW-25D**	**TW-27S**
Laboratory Sample Identification			**A8175902**	**RSB0604-01**	**RSB0604-02**	**A8169709**	**RSB0535-08**	**A8175904**
Date Collected			**2/19/08**	**2/18/09**	**2/18/09**	**2/18/08**	**2/17/09**	**2/19/08**
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**15**	**4.8**	**5**	<0.096	<0.47	**1.3**
Gasoline range organics	0.5	0.5	**0.083J**	**0.16**	**0.17**	<0.05	**0.0065J**	**0.063**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-24S	TW-24D	TW-524 (DUP of TW-24D)	TW-25S	TW-25D	TW-27S
Location Identification and Sample Interval (Feet below ground surface)			**TW-24S**	**TW-24D**	**TW-524 (DUP of TW-24D)**	**TW-25S**	**TW-25D**	**TW-27S**
Laboratory Sample Identification			**A8175902**	**RSB0604-01**	**RSB0604-02**	**A8169709**	**RSB0535-08**	**A8175904**
Date Collected			**2/19/08**	**2/18/09**	**2/18/09**	**2/18/08**	**2/17/09**	**2/19/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-27D	TW-29	TW-31S	TW-31D	TW-32S	TW-32D
Location Identification and Sample Interval (Feet below ground surface)			TW-27D	TW-29	TW-31S	TW-31D	TW-32S	TW-32D
Laboratory Sample Identification			RSB0385-04	A8169711	A8175901	RSB0535-10	A8183904	RSB0691-07
Date Collected			2/11/09	2/18/08	2/19/08	2/17/09	2/20/08	2/20/09
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**0.37J**	**2.1**	**0.93**	**0.16J**	**4.2**	n/a
Gasoline range organics	0.5	0.5	**0.0053J**	**0.22**	**0.005J**	**0.045**	**0.67**	**0.39**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-27D	TW-29	TW-31S	TW-31D	TW-32S	TW-32D
Location Identification and Sample Interval (Feet below ground surface)			**TW-27D**	**TW-29**	**TW-31S**	**TW-31D**	**TW-32S**	**TW-32D**
Laboratory Sample Identification			**RSB0385-04**	**A8169711**	**A8175901**	**RSB0535-10**	**A8183904**	**RSB0691-07**
Date Collected			**2/11/09**	**2/18/08**	**2/19/08**	**2/17/09**	**2/20/08**	**2/20/09**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-32D	TW-34	TW-35	TW-36
Location Identification and Sample Interval (Feet below ground surface)			**TW-32D**	**TW-34**	**TW-35**	**TW-36**
Laboratory Sample Identification			**RSB0643-08**	**A8184008**	**A8169706/360-15169-7**	**A8034301/360-14529-1**
Date Collected			**2/19/09**	**2/22/08**	**2/18/08**	**1/9/08**
DRO/GRO (mg/L)						
Diesel range organics	0.72	0.5	**3.3**	**0.24**	<0.096	**1.5**
Gasoline range organics	0.5	0.5	n/a	**0.037J**	**0.0049J**	**10**
TPH (mg/L)						
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)						
2-Methylnaphthalene	33	9	n/a	n/a	*<10*	*<10*
Acenaphthene	490	130	n/a	n/a	<10	<10
Acenaphthylene	NA	NA	n/a	n/a	<10	<10
Anthracene	2,300	620	n/a	n/a	<10	<10
Benzo(a)anthracene	0.4	0.1	n/a	n/a	*<10*	*<10*
Benzo(a)pyrene	0.2	0.2	n/a	n/a	*<10*	*<10*
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	*<10*	*<10*
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	<10	<10
Benzo(k)fluoranthene	3	1	n/a	n/a	*<10*	*<10*
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	<100	**250**
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	<100	**270**
C19-C36 Aliphatics	NA	NA	n/a	n/a	<100	<100
C9-C18 Aliphatics	NA	NA	n/a	n/a	<100	<100
Chrysene	40	10	n/a	n/a	<10	<10
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	*<10*	*<10*
Fluoranthene	890	180	n/a	n/a	<10	<10
Fluorene	280	70	n/a	n/a	<10	<10

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-32D	TW-34	TW-35	TW-36
Location Identification and Sample Interval (Feet below ground surface)			**TW-32D**	**TW-34**	**TW-35**	**TW-36**
Laboratory Sample Identification			**RSB0643-08**	**A8184008**	**A8169706/360-15169-7**	**A8034301/360-14529-1**
Date Collected			**2/19/09**	**2/22/08**	**2/18/08**	**1/9/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	*<10*	*<10*
Naphthalene	9	3	n/a	n/a	*<10*	**20**
Phenanthrene	NA	NA	n/a	n/a	<10	<10
Pyrene	720	140	n/a	n/a	<10	<10
Total EPH	NA	NA	n/a	n/a	<100	**250**
MADEPVPH (ug/L)						
Benzene	5	5	n/a	n/a	<5	**980**
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	<100	<5000
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	<100	**8200**
C9-C10 Aromatics	NA	NA	n/a	n/a	<100	<5000
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	<100	<5000
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	<100	<5000
Ethylbenzene	700	700	n/a	n/a	<5	<250
m+p-Xylenes	10,000	10,000	n/a	n/a	<10	<500
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	<5	**9400**
Naphthalene	9	3	n/a	n/a	*<10*	*<500*
o-Xylene	NA	NA	n/a	n/a	<5	<250
Toluene	1,000	1,000	n/a	n/a	<5	<250
Total VPH	NA	NA	n/a	n/a	<100	<5000

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-36	TW-38	TW-39	TW-40	TW-41	TW-42
Location Identification and Sample Interval (Feet below ground surface)			TW-36	TW-38	TW-39	TW-40	TW-41	TW-42
Laboratory Sample Identification			RSA0674-04	A8169704/360-15169-8	A8183901	A8184009	A8184007	A8184003
Date Collected			1/21/09	2/18/08	2/20/08	2/22/08	2/22/08	2/22/08
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**4.4**	<0.096	**1.6**	**0.25**	**2.6**	**6.7**
Gasoline range organics	0.5	0.5	**18**	**6.5**	**0.13**	**0.046J**	**0.17**	**9.7**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	*<10*	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	<10	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	<10	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	<10	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	*<10*	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	*<10*	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	*<10*	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	<10	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	*<10*	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	<100	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	<100	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	<100	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	<100	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	<10	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	*<10*	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	<10	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	<10	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-36	TW-38	TW-39	TW-40	TW-41	TW-42
Location Identification and Sample Interval (Feet below ground surface)			**TW-36**	**TW-38**	**TW-39**	**TW-40**	**TW-41**	**TW-42**
Laboratory Sample Identification			**RSA0674-04**	**A8169704/360-15169-8**	**A8183901**	**A8184009**	**A8184007**	**A8184003**
Date Collected			**1/21/09**	**2/18/08**	**2/20/08**	**2/22/08**	**2/22/08**	**2/22/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	*<10*	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	*<10*	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	<10	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	<10	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	<100	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	*<500*	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	<10000	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	**23000**	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	<10000	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	<10000	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	<10000	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	<500	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	<1000	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	**33000**	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	*<1000*	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	<500	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	<500	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	<10000	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-43	TW-45	TW-46	TW-47	TW-48	TW-51	TW-52	TW-53
Location Identification and Sample Interval (Feet below ground surface)			TW-43	TW-45	TW-46	TW-47	TW-48	TW-51	TW-52	TW-53
Laboratory Sample Identification			A8184002	A8183914	A8183912	A8183913	A8169712	A8184012	A8184011	A8187801
Date Collected			2/22/08	2/20/08	2/20/08	2/20/08	2/18/08	2/22/08	2/22/08	2/23/08
DRO/GRO (mg/L)										
Diesel range organics	0.72	0.5	**0.7**	**5.7**	**5.6**	**2.9**	<0.095	**2.5**	**1.5**	**5.8**
Gasoline range organics	0.5	0.5	**0.12**	**14**	**15**	**2.3**	**0.032J**	**3**	**2.7**	**3.8**
TPH (mg/L)										
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)										
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-43	TW-45	TW-46	TW-47	TW-48	TW-51	TW-52	TW-53
Location Identification and Sample Interval (Feet below ground surface)										
Laboratory Sample Identification			A8184002	A8183914	A8183912	A8183913	A8169712	A8184012	A8184011	A8187801
Date Collected			2/22/08	2/20/08	2/20/08	2/20/08	2/18/08	2/22/08	2/22/08	2/23/08
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)										
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-55**	**TW-56**	**TW-56**	**TW-58**	**TW-60**
	Laboratory Sample Identification		**A8184010**	**A8169715/360-15169-2**	**RSB0789-04**	**A8169716/360-15169-3**	**A8169718**
	Date Collected		**2/22/08**	**2/18/08**	**2/24/09**	**2/18/08**	**2/18/08**
Analyte (Units)							
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
DRO/GRO (mg/L)							
Diesel range organics	0.72	0.5	**1200**	**1.5**	**2.4B**	**2.2**	**5.1**
Gasoline range organics	0.5	0.5	**150**	**2.4**	**1.9**	**5.1**	**2.7**
TPH (mg/L)							
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)							
2-Methylnaphthalene	33	9	n/a	**75**	n/a	**13**	n/a
Acenaphthene	490	130	n/a	<10	n/a	<10	n/a
Acenaphthylene	NA	NA	n/a	<10	n/a	<10	n/a
Anthracene	2,300	620	n/a	<10	n/a	<10	n/a
Benzo(a)anthracene	0.4	0.1	n/a	*<10*	n/a	*<10*	n/a
Benzo(a)pyrene	0.2	0.2	n/a	*<10*	n/a	*<10*	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	*<10*	n/a	*<10*	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	<10	n/a	<10	n/a
Benzo(k)fluoranthene	3	1	n/a	*<10*	n/a	*<10*	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	**480**	n/a	**350**	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	**570**	n/a	**390**	n/a
C19-C36 Aliphatics	NA	NA	n/a	<100	n/a	<100	n/a
C9-C18 Aliphatics	NA	NA	n/a	**160**	n/a	<100	n/a
Chrysene	40	10	n/a	<10	n/a	<10	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	*<10*	n/a	*<10*	n/a
Fluoranthene	890	180	n/a	<10	n/a	<10	n/a
Fluorene	280	70	n/a	<10	n/a	<10	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-55	TW-56	TW-56	TW-58	TW-60
Location Identification and Sample Interval (Feet below ground surface)			**TW-55**	**TW-56**	**TW-56**	**TW-58**	**TW-60**
Laboratory Sample Identification			**A8184010**	**A8169715/360-15169-2**	**RSB0789-04**	**A8169716/360-15169-3**	**A8169718**
Date Collected			**2/22/08**	**2/18/08**	**2/24/09**	**2/18/08**	**2/18/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	*<10*	n/a	*<10*	n/a
Naphthalene	9	3	n/a	**11**	n/a	**23**	n/a
Phenanthrene	NA	NA	n/a	<10	n/a	<10	n/a
Pyrene	720	140	n/a	<10	n/a	<10	n/a
Total EPH	NA	NA	n/a	**640**	n/a	**350**	n/a
MADEPVPH (ug/L)							
Benzene	5	5	n/a	**25**	n/a	**130**	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	**1900**	n/a	**3400**	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	**2000**	n/a	**3600**	n/a
C9-C10 Aromatics	NA	NA	n/a	**1100**	n/a	**1600**	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	<100	n/a	<500	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	**640**	n/a	**1100**	n/a
Ethylbenzene	700	700	n/a	<5	n/a	**100**	n/a
m+p-Xylenes	10,000	10,000	n/a	<10	n/a	**150**	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	**17**	n/a	*<25*	n/a
Naphthalene	9	3	n/a	**26**	n/a	**67**	n/a
o-Xylene	NA	NA	n/a	<5	n/a	**40**	n/a
Toluene	1,000	1,000	n/a	<5	n/a	**53**	n/a
Total VPH	NA	NA	n/a	**3000**	n/a	**5000**	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-63**	**TW-63-51 (DUP of TW-63)**	**TW-64**	**TW-65**	**TW-67**
	Laboratory Sample Identification		**A8175811**	**A8175812**	**A8169717/360-15169-4**	**A8169714**	**A8175813**
	Date Collected		**2/19/08**	**2/19/08**	**2/18/08**	**2/18/08**	**2/19/08**
Analyte (Units)							
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]						
	Non-Residental Scenario	**Residential Scenario**					
DRO/GRO (mg/L)							
Diesel range organics	0.72	0.5	**0.43**	**0.62**	**9.8J**	**0.22**	**89**
Gasoline range organics	0.5	0.5	<0.05	**0.0094J**	**3**	**0.034J**	**33**
TPH (mg/L)							
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)							
2-Methylnaphthalene	33	9	n/a	n/a	*<10*	n/a	n/a
Acenaphthene	490	130	n/a	n/a	<10	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	<10	n/a	n/a
Anthracene	2,300	620	n/a	n/a	<10	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	*<10*	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	*<10*	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	*<10*	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	<10	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	*<10*	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	**790**	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	**790**	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	**200**	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	**150**	n/a	n/a
Chrysene	40	10	n/a	n/a	<10	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	*<10*	n/a	n/a
Fluoranthene	890	180	n/a	n/a	<10	n/a	n/a
Fluorene	280	70	n/a	n/a	<10	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-63	TW-63-51 (DUP of TW-63)	TW-64	TW-65	TW-67
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			**A8175811**	**A8175812**	**A8169717/360-15169-4**	**A8169714**	**A8175813**
Date Collected			**2/19/08**	**2/19/08**	**2/18/08**	**2/18/08**	**2/19/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	*<10*	n/a	n/a
Naphthalene	9	3	n/a	n/a	*<10*	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	<10	n/a	n/a
Pyrene	720	140	n/a	n/a	<10	n/a	n/a
Total EPH	NA	NA	n/a	n/a	**1100**	n/a	n/a
MADEPVPH (ug/L)							
Benzene	5	5	n/a	n/a	*<25*	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	**770**	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**770**	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	**3300**	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	<500	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	**1900**	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	**220**	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	<50	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	*<25*	n/a	n/a
Naphthalene	9	3	n/a	n/a	*<50*	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	<25	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	<25	n/a	n/a
Total VPH	NA	NA	n/a	n/a	**4000**	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-69	TW-73	TW-74	TW-75	TW-75	TW-76
Location Identification and Sample Interval (Feet below ground surface)			**TW-69**	**TW-73**	**TW-74**	**TW-75**	**TW-75**	**TW-76**
Laboratory Sample Identification			**A8169713/360-15169-1**	**A8183902**	**A8184001**	**A8184006**	**RSB0732-02**	**A8184005**
Date Collected			**2/18/08**	**2/20/08**	**2/22/08**	**2/22/08**	**2/23/09**	**2/22/08**
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	<0.094	**2.3**	**0.81**	**2.8**	<0.48	**0.67**
Gasoline range organics	0.5	0.5	<0.05	**0.13**	<0.05	**5.8**	<0.025	**0.063**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	*<10*	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	<10	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	<10	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	<10	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	*<10*	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	*<10*	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	*<10*	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<10	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	*<10*	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	<10	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	*<10*	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	<10	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	<10	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-69	TW-73	TW-74	TW-75	TW-75	TW-76
Location Identification and Sample Interval (Feet below ground surface)			**TW-69**	**TW-73**	**TW-74**	**TW-75**	**TW-75**	**TW-76**
Laboratory Sample Identification			**A8169713/360-15169-1**	**A8183902**	**A8184001**	**A8184006**	**RSB0732-02**	**A8184005**
Date Collected			**2/18/08**	**2/20/08**	**2/22/08**	**2/22/08**	**2/23/09**	**2/22/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<10*	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	*<10*	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	<10	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	<10	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	<5	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	<100	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	<5	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	<10	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<5	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	*<10*	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	<5	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	<5	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	<100	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TW-77	TW-78	TW-78	TW-578 (DUP of TW-78)	TW-79
	Laboratory Sample Identification		A7E64002/360-14167-1	A7E64001DL	RSB0732-01	RSB0732-03	A8100901
	Date Collected		12/17/07	12/17/07	2/23/09	2/23/09	1/29/08
Analyte (Units)	**Kansas Tier II Risk-Based Standards GW Pathway[(A)]**						
	Non-Residental Scenario	**Residential Scenario**					
DRO/GRO (mg/L)							
Diesel range organics	0.72	0.5	**4.5**	**8.3D**	**1.3B**	**1.1B**	**0.31**
Gasoline range organics	0.5	0.5	**0.28**	**0.48J**	**0.22**	**0.25**	**1.7**
TPH (mg/L)							
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)							
2-Methylnaphthalene	33	9	*<10*	n/a	n/a	n/a	n/a
Acenaphthene	490	130	<10	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	<10	n/a	n/a	n/a	n/a
Anthracene	2,300	620	<10	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	*<10*	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	*<10*	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	*<10*	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	<10	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	*<10*	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	**1100**	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	**1100**	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	**890**	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	**1100**	n/a	n/a	n/a	n/a
Chrysene	40	10	<10	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	*<10*	n/a	n/a	n/a	n/a
Fluoranthene	890	180	<10	n/a	n/a	n/a	n/a
Fluorene	280	70	<10	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-77	TW-78	TW-78	TW-578 (DUP of TW-78)	TW-79
Location Identification and Sample Interval (Feet below ground surface)			**TW-77**	**TW-78**	**TW-78**	**TW-578 (DUP of TW-78)**	**TW-79**
Laboratory Sample Identification			**A7E64002/360-14167-1**	**A7E64001DL**	**RSB0732-01**	**RSB0732-03**	**A8100901**
Date Collected			**12/17/07**	**12/17/07**	**2/23/09**	**2/23/09**	**1/29/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	*<10*	n/a	n/a	n/a	n/a
Naphthalene	9	3	*<10*	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	<10	n/a	n/a	n/a	n/a
Pyrene	720	140	<10	n/a	n/a	n/a	n/a
Total EPH	NA	NA	**3000**	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)							
Benzene	5	5	<5	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	**110**	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	**110**	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	<100	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	<100	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	<100	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	<5	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	<10	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	<5	n/a	n/a	n/a	n/a
Naphthalene	9	3	*<10*	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	<5	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	<5	n/a	n/a	n/a	n/a
Total VPH	NA	NA	**110**	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-79	TW-81	TW-82	TW-83	TW-84	TW-85
Location Identification and Sample Interval (Feet below ground surface)			**TW-79**	**TW-81**	**TW-82**	**TW-83**	**TW-84**	**TW-85**
Laboratory Sample Identification			**RSA0706-02**	**6042857001**	**6042857002**	**RSB0438-09**	**RSB0535-07**	**A8F46802/K37FD**
Date Collected			**1/22/09**	**7/2/08**	**7/2/08**	**2/12/09**	**2/17/09**	**12/4/08**
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**0.19J**	**n/a**	**n/a**	**0.95B**	<0.49	<0.15
Gasoline range organics	0.5	0.5	**0.085**	**3.3**	**7.8**	**1.1**	<0.025	<0.1
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	<0.40	<0.40	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	<0.40	<0.40	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	<0.40	<0.40	n/a	n/a	n/a
Kerosene	NA	NA	n/a	<0.40	<0.40	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	<0.40	<0.40	n/a	n/a	n/a
Motor oil	NA	NA	n/a	<0.40	<0.40	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	**0.79**	**1.5**	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-79	TW-81	TW-82	TW-83	TW-84	TW-85
Location Identification and Sample Interval (Feet below ground surface)			**TW-79**	**TW-81**	**TW-82**	**TW-83**	**TW-84**	**TW-85**
Laboratory Sample Identification			**RSA0706-02**	**6042857001**	**6042857002**	**RSB0438-09**	**RSB0535-07**	**A8F46802/K37FD**
Date Collected			**1/22/09**	**7/2/08**	**7/2/08**	**2/12/09**	**2/17/09**	**12/4/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-86	TW-87	TW-88	TW-89	TW-90	TW-91
Location Identification and Sample Interval (Feet below ground surface)			**TW-86**	**TW-87**	**TW-88**	**TW-89**	**TW-90**	**TW-91**
Laboratory Sample Identification			**A8F14803/K3QPG**	**RSB0691-01**	**RSB0535-05**	**A8E85802**	**A8E85803**	**A8E85804**
Date Collected			**11/25/08**	**2/20/09**	**2/17/09**	**11/20/08**	**11/20/08**	**11/20/08**
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**6.7**	**1.6B**	**0.58**	<0.14	<0.14	**0.22**
Gasoline range organics	0.5	0.5	**12**	**5.9**	**0.0052J**	<0.05	**0.13**	**0.25**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-86	TW-87	TW-88	TW-89	TW-90	TW-91
Location Identification and Sample Interval (Feet below ground surface)			**TW-86**	**TW-87**	**TW-88**	**TW-89**	**TW-90**	**TW-91**
Laboratory Sample Identification			**A8F14803/K3QPG**	**RSB0691-01**	**RSB0535-05**	**A8E85802**	**A8E85803**	**A8E85804**
Date Collected			**11/25/08**	**2/20/09**	**2/17/09**	**11/20/08**	**11/20/08**	**11/20/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		TW-92	TW-93	TW-94	TW-96	TW-97
	Laboratory Sample Identification		RSB0604-08	A8F14801/K3Q9E	RSB0385-02	RSB0604-04	RSB0604-06
	Date Collected		2/18/09	11/25/08	2/11/09	2/18/09	2/18/09
Analyte (Units)	**Kansas Tier II Risk-Based Standards GW Pathway[(A)]**						
	Non-Residental Scenario	**Residential Scenario**					
DRO/GRO (mg/L)							
Diesel range organics	0.72	0.5	**0.37J**	**0.9**	**4.5**	**0.46J**	**5.2**
Gasoline range organics	0.5	0.5	**0.41**	**1.6**	**0.19**	**0.2**	**1.7**
TPH (mg/L)							
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)							
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-92	TW-93	TW-94	TW-96	TW-97
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			**RSB0604-08**	**A8F14801/K3Q9E**	**RSB0385-02**	**RSB0604-04**	**RSB0604-06**
Date Collected			**2/18/09**	**11/25/08**	**2/11/09**	**2/18/09**	**2/18/09**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)							
Benzene	5	5	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**TW-98**	**TW-99**	**TW-100**	**TW-101**	**TW-102S**	**TW-102D**
	Laboratory Sample Identification		**RSB0604-05**	**RSB0478-03**	**RSB0385-06**	**RSB0438-01**	**RSB0385-03**	**RSB0385-01**
	Date Collected		**2/18/09**	**2/13/09**	**2/11/09**	**2/12/09**	**2/11/09**	**2/11/09**
Analyte (Units)	**Kansas Tier II Risk-Based Standards GW Pathway[(A)]**							
	Non-Residental Scenario	**Residential Scenario**						
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**5.6**	<0.47UJ	**0.23J**	**5.3B**	<0.48	**0.46J**
Gasoline range organics	0.5	0.5	**0.25**	<0.025	<0.025	**0.12J**	<0.025	**0.52J**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-98	TW-99	TW-100	TW-101	TW-102S	TW-102D
Location Identification and Sample Interval (Feet below ground surface)			**TW-98**	**TW-99**	**TW-100**	**TW-101**	**TW-102S**	**TW-102D**
Laboratory Sample Identification			**RSB0604-05**	**RSB0478-03**	**RSB0385-06**	**RSB0438-01**	**RSB0385-03**	**RSB0385-01**
Date Collected			**2/18/09**	**2/13/09**	**2/11/09**	**2/12/09**	**2/11/09**	**2/11/09**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-103	TW-104	TW-104D	TW-105D	TW-106S
Location Identification and Sample Interval (Feet below ground surface)			**TW-103**	**TW-104**	**TW-104D**	**TW-105D**	**TW-106S**
Laboratory Sample Identification			**A8F14802/K3QPF**	**A8F46801**	**RSB0535-09**	**RSB0535-11**	**RSB0604-03**
Date Collected			**11/25/08**	**12/4/08**	**2/17/09**	**2/17/09**	**2/18/09**
DRO/GRO (mg/L)							
Diesel range organics	0.72	0.5	**0.88**	<0.14	<0.48	**0.14J**	**9.4**
Gasoline range organics	0.5	0.5	**0.28**	n/a	**0.042**	**0.01J**	**59**
TPH (mg/L)							
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)							
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-103	TW-104	TW-104D	TW-105D	TW-106S
Location Identification and Sample Interval (Feet below ground surface)							
Laboratory Sample Identification			A8F14802/K3QPF	A8F46801	RSB0535-09	RSB0535-11	RSB0604-03
Date Collected			11/25/08	12/4/08	2/17/09	2/17/09	2/18/09
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)							
Benzene	5	5	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-107	TW-108	TW-109	TW-110	TW-111	TW-112
Location Identification and Sample Interval (Feet below ground surface)			TW-107	TW-108	TW-109	TW-110	TW-111	TW-112
Laboratory Sample Identification			RSA0614-04	RSA0614-03	RSA0614-05	RSB0385-07	A8E72201	A8E85801
Date Collected			1/20/09	1/20/09	1/20/09	2/11/09	11/18/08	12/20/08
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	<0.48	**7.4**	n/a	**0.3J**	**2.4**	**2.8**
Gasoline range organics	0.5	0.5	**1.8**	**54**	<0.025	**0.98**	**27**	**8.4**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-107	TW-108	TW-109	TW-110	TW-111	TW-112
Location Identification and Sample Interval (Feet below ground surface)			**TW-107**	**TW-108**	**TW-109**	**TW-110**	**TW-111**	**TW-112**
Laboratory Sample Identification			**RSA0614-04**	**RSA0614-03**	**RSA0614-05**	**RSB0385-07**	**A8E72201**	**A8E85801**
Date Collected			**1/20/09**	**1/20/09**	**1/20/09**	**2/11/09**	**11/18/08**	**12/20/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-113	TW-114	TW-115	TW-116S	TW-116D	TW-118
Location Identification and Sample Interval (Feet below ground surface)			**TW-113**	**TW-114**	**TW-115**	**TW-116S**	**TW-116D**	**TW-118**
Laboratory Sample Identification			**RSA0614-02**	**RSA0614-01**	**RSB0438-05**	**RSB0691-06**	**RSB0643-07**	**RSB0385-08**
Date Collected			**1/20/09**	**1/20/09**	**2/12/09**	**2/20/09**	**2/19/09**	**2/11/09**
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**5.4**	**1.4**	**4.2B**	**2.1B**	**0.76**	**2.8**
Gasoline range organics	0.5	0.5	**6.4**	**1.3**	**31**	**0.42**	**1.3**	**1.6J**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
(Page 56 of 62)

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-113	TW-114	TW-115	TW-116S	TW-116D	TW-118
Location Identification and Sample Interval (Feet below ground surface)								
Laboratory Sample Identification			RSA0614-02	RSA0614-01	RSB0438-05	RSB0691-06	RSB0643-07	RSB0385-08
Date Collected			1/20/09	1/20/09	2/12/09	2/20/09	2/19/09	2/11/09
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-120	TW-123	TW-523 (DUP of TW-123)	TW-124	TW-125	TW-126
Location Identification and Sample Interval (Feet below ground surface)			TW-120	TW-123	TW-523 (DUP of TW-123)	TW-124	TW-125	TW-126
Laboratory Sample Identification			RSB0478-02	RSB0438-02	RSB0438-03	RSB0438-08	RSB0385-05	RSB0438-07
Date Collected			2/13/09	2/12/09	2/12/09	2/12/09	2/11/09	2/12/09
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**0.26J**	**7.5B**	**7.6B**	**1.7B**	**0.13J**	**0.6B**
Gasoline range organics	0.5	0.5	**0.011JB**	**5.4J**	**6.5J**	**1.4J**	**0.055**	**0.96**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-120	TW-123	TW-523 (DUP of TW-123)	TW-124	TW-125	TW-126
Location Identification and Sample Interval (Feet below ground surface)			TW-120	TW-123	TW-523 (DUP of TW-123)	TW-124	TW-125	TW-126
Laboratory Sample Identification			RSB0478-02	RSB0438-02	RSB0438-03	RSB0438-08	RSB0385-05	RSB0438-07
Date Collected			2/13/09	2/12/09	2/12/09	2/12/09	2/11/09	2/12/09
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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	Location Identification and Sample Interval (Feet below ground surface)		**TW-128**	**TW-129**	**TW-130**	**TW-131**	**TW-531 (DUP of TW-131)**	**W-01S**
	Laboratory Sample Identification		**RSB0438-06**	**RSB0535-06**	**RSB0604-07**	**RSB0535-01**	**RSB0535-04**	**A8164016**
	Date Collected		**2/12/09**	**2/17/09**	**2/18/09**	**2/17/09**	**2/17/09**	**2/16/08**
Analyte (Units)	**Kansas Tier II Risk-Based Standards GW Pathway[(A)]**							
	Non-Residental Scenario	**Residential Scenario**						
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	<0.48	**3.5**	**0.88**	<0.48	<0.48	<0.097
Gasoline range organics	0.5	0.5	<0.025	**1**	**0.025J**	<0.025	<0.025	**0.02J**
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-128	TW-129	TW-130	TW-131	TW-531 (DUP of TW-131)	W-01S
Location Identification and Sample Interval (Feet below ground surface)			**TW-128**	**TW-129**	**TW-130**	**TW-131**	**TW-531 (DUP of TW-131)**	**W-01S**
Laboratory Sample Identification			**RSB0438-06**	**RSB0535-06**	**RSB0604-07**	**RSB0535-01**	**RSB0535-04**	**A8164016**
Date Collected			**2/12/09**	**2/17/09**	**2/18/09**	**2/17/09**	**2/17/09**	**2/16/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas

	Location Identification and Sample Interval (Feet below ground surface)		**W-01S**	**W-16S**	**W-22**	**W-22**	**W-24**	**W-26**
	Laboratory Sample Identification		**RSB0438-04**	**A8183903**	**A8164010**	**RSB0478-01**	**A8160508**	**A8175801**
	Date Collected		**2/12/09**	**2/20/08**	**2/16/08**	**2/13/09**	**2/15/08**	**2/19/08**
Analyte (Units)								
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]							
	Non-Residental Scenario	**Residential Scenario**						
DRO/GRO (mg/L)								
Diesel range organics	0.72	0.5	**0.18JB**	<0.096	**1.5**	**1.5**	**2.6**	<0.094
Gasoline range organics	0.5	0.5	**0.029J**	<0.05	**1**	**1B**	**3.5**	<0.05
TPH (mg/L)								
Diesel fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Fuel oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Jet fuel	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Kerosene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Mineral spirits	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Motor oil	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Total petroleum hydrocarbons	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPEPH (ug/L)								
2-Methylnaphthalene	33	9	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthene	490	130	n/a	n/a	n/a	n/a	n/a	n/a
Acenaphthylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Anthracene	2,300	620	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)anthracene	0.4	0.1	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(a)pyrene	0.2	0.2	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(b)fluoranthene	0.3	0.09	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(g,h,i)perylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Benzo(k)fluoranthene	3	1	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (Adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C11-C22 Aromatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C19-C36 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C18 Aliphatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Chrysene	40	10	n/a	n/a	n/a	n/a	n/a	n/a
Dibenz(a,h)anthracene	0.01	0.004	n/a	n/a	n/a	n/a	n/a	n/a
Fluoranthene	890	180	n/a	n/a	n/a	n/a	n/a	n/a
Fluorene	280	70	n/a	n/a	n/a	n/a	n/a	n/a

Table 10d

Groundwater Sample Analytical Data - TPH
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	W-01S	W-16S	W-22	W-22	W-24	W-26
Location Identification and Sample Interval (Feet below ground surface)								
Laboratory Sample Identification			**RSB0438-04**	**A8183903**	**A8164010**	**RSB0478-01**	**A8160508**	**A8175801**
Date Collected			**2/12/09**	**2/20/08**	**2/16/08**	**2/13/09**	**2/15/08**	**2/19/08**
Indeno(1,2,3-cd)pyrene	0.2	0.06	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
Phenanthrene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Pyrene	720	140	n/a	n/a	n/a	n/a	n/a	n/a
Total EPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
MADEPVPH (ug/L)								
Benzene	5	5	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C5-C8 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C10 Aromatics	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (adjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
C9-C12 Aliphatics (unadjusted)	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	700	700	n/a	n/a	n/a	n/a	n/a	n/a
m+p-Xylenes	10,000	10,000	n/a	n/a	n/a	n/a	n/a	n/a
Methyl tert-butyl ether (tert-butyl methyl ether)	20	20	n/a	n/a	n/a	n/a	n/a	n/a
Naphthalene	9	3	n/a	n/a	n/a	n/a	n/a	n/a
o-Xylene	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	1,000	1,000	n/a	n/a	n/a	n/a	n/a	n/a
Total VPH	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a

(mg/L)	milligrams per liter
(ug/L)	micrograms per liter
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
J	The analyte was positively identified, the quantitation is an estimation.
D	Analyte reported from secondary dilution.
B	Analyte detected in the associated blank, as well as the sample.
DUP	Duplicate sample
n/a	Not analyzed
NA	Not applicable

Table 10e

Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	FINA/MW-38	FINA/MW-38-53 (DUP of MW-38)	N2-4	N3-2	N3-3	N4-1	N4-1-51 (DUP of N4-1)
	Laboratory Sample Identification			A8183908	A8183909	A8164001	A8160505	A8164002	A8164008	A8164009
	Date Collected			2/20/08	2/20/08	2/15/08	2/15/08	2/15/08	2/16/08	2/16/08
Metals (ug/L)										
Antimony		6	6	*<50*	*<50*	n/a	n/a	n/a	n/a	n/a
Arsenic		10	10	**6.5**	**12.9**	<5	**57.9**	**33**	<5	<5
Barium		2000	2000	**74.4**	**76.6**	**687**	**444**	**420**	**145**	**152**
Beryllium		4	4	<3	<3	<3	<3	<3	<3	<3
Cadmium		5	5	<5	<5	<5	<5	<5	<5	<5
Calcium		NA	NA	**183000**	**159000**	n/a	n/a	n/a	n/a	n/a
Chromium		100	100	<5	<5	<5	<5	<5	<5	<5
Hexavalent Chromium		NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt		NA	NA	<10	<10	n/a	n/a	n/a	n/a	n/a
Copper		1300	1300	**12.2**	<10	n/a	n/a	n/a	n/a	n/a
Iron		NA	NA	**766**	**981**	n/a	n/a	n/a	n/a	n/a
Lead		15	15	**10.2**	**5.6**	<5	<5	<5	<5	<5
Magnesium		NA	NA	**26700**	**27000**	n/a	n/a	n/a	n/a	n/a
Manganese		50	50	**154**	**317**	**1020**	**1860**	**3300**	**549**	**534**
Mercury		2	2	<0.2	<0.2	n/a	n/a	n/a	n/a	n/a
Nickel		100	100	**5.3**	<5	**10.6**	**6.4**	<5	<5	<5
Potassium		NA	NA	**4360**	**3470**	n/a	n/a	n/a	n/a	n/a
Selenium		50	50	<10	<10	n/a	n/a	n/a	n/a	n/a
Silver		100	100	<5	<5	n/a	n/a	n/a	n/a	n/a
Sodium		NA	NA	**165000**	**172000**	n/a	n/a	n/a	n/a	n/a
Thallium		NA	NA	<10	<10	n/a	n/a	n/a	n/a	n/a
Vanadium		710	110	<10	<10	n/a	n/a	n/a	n/a	n/a
Zinc		5000	5000	**23.6**	**26.6**	n/a	n/a	n/a	n/a	n/a

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

Table 10e

Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	N4-2	N5-1	N5-2	N5-3	N5-3-52 (DUP of N5-3)	OW-01	OW-02
Location Identification and Sample Interval (Feet below ground surface)			N4-2	N5-1	N5-2	N5-3	N5-3-52	OW-01	OW-02
Laboratory Sample Identification			A8183911	A8184004	A8183905	A8183906	A8183907	A8160507	A8164014
Date Collected			2/20/08	2/22/08	2/20/08	2/20/08	2/20/08	2/15/08	2/16/08
Metals (ug/L)									
Antimony	6	6	*<50*	*<50*	*<50*	*<50*	*<50*	n/a	n/a
Arsenic	10	10	**6.6**	<5	<5	**10.1**	**12.5**	<5	**35.4**
Barium	2000	2000	**71**	**181**	**180**	**282**	**337**	**244**	**278**
Beryllium	4	4	<3	<3	<3	<3	<3	<3	<3
Cadmium	5	5	<5	<5	<5	<5	<5	<5	<5
Calcium	NA	NA	**98400**	**126000**	**88900**	**84000**	**85200**	n/a	n/a
Chromium	100	100	<5	**6.3**	<5	<5	<5	<5	<5
Hexavalent Chromium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	NA	<10	<10	<10	<10	<10	n/a	n/a
Copper	1300	1300	<10	<10	<10	<10	<10	n/a	n/a
Iron	NA	NA	**500**	**377**	**154**	**2630**	**1930**	n/a	n/a
Lead	15	15	<5	<5	<5	<5	<5	<5	<5
Magnesium	NA	NA	**63300**	**26900**	**19100**	**16900**	**16100**	n/a	n/a
Manganese	50	50	**653**	**15.8**	**487**	**314**	**701**	**347**	**283**
Mercury	2	2	<0.2	<0.2	<0.2	<0.2	<0.2	n/a	n/a
Nickel	100	100	**55**	**44.9**	<5	<5	<5	<5	<5
Potassium	NA	NA	**2400**	**1350**	**1710**	**1040**	<1000	n/a	n/a
Selenium	50	50	<10	<10	<10	<10	<10	n/a	n/a
Silver	100	100	<5	<5	<5	<5	<5	n/a	n/a
Sodium	NA	NA	**506000**	**213000**	**456000**	**214000**	**281000**	n/a	n/a
Thallium	NA	NA	<10	<10	<10	<10	<10	n/a	n/a
Vanadium	710	110	<10	<10	<10	<10	<10	n/a	n/a
Zinc	5000	5000	**45.4**	<20	<20	<20	<20	n/a	n/a

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

Table 10e

Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residential Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	OW-03	OW-04	OW-04-50 (DUP of OW-04)	OW-05	OW-08	OW-09	OW-10
Location Identification and Sample Interval (Feet below ground surface)									
Laboratory Sample Identification			A8164011	A8160503	A8160504	A8164007	A8164005	A8164003	A8164006
Date Collected			2/16/08	2/15/08	2/15/08	2/16/08	2/16/08	2/15/08	2/16/08
Metals (ug/L)									
Antimony	6	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Arsenic	10	10	<5	<5	<5	<5	**35.2**	**6.9**	**27.2**
Barium	2000	2000	**51.4**	**47.2**	**47**	**43.7**	**2190**	**144**	**469**
Beryllium	4	4	<3	<3	<3	<3	<3	<3	<3
Cadmium	5	5	<5	<5	<5	<5	<5	<5	<5
Calcium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Chromium	100	100	<5	<5	<5	<5	<5	<5	<5
Hexavalent Chromium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Copper	1300	1300	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Iron	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Lead	15	15	<5	<5	<5	<5	<5	<5	<5
Magnesium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Manganese	50	50	**16.9**	<10	<10	<10	**1220**	**143**	**1110**
Mercury	2	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Nickel	100	100	<5	**8.6**	**25.6**	<5	<5	<5	<5
Potassium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Selenium	50	50	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Silver	100	100	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sodium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Thallium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Vanadium	710	110	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Zinc	5000	5000	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

Table 10e

Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	OW-12	OW-14	OW-23T	OW-26	OW-29	OW-31	OW-32
	Laboratory Sample Identification			A8164015	A8160501	A8183910	A8183915	A8164012	A8160506	A8160502
	Date Collected			2/16/08	2/15/08	2/20/08	2/20/08	2/16/08	2/15/08	2/15/08
Metals (ug/L)										
Antimony		6	6	n/a	n/a	*<50*	*<50*	n/a	n/a	n/a
Arsenic		10	10	**12.6**	<5	**16.9**	**13.7**	**25.9**	**71.7**	**122**
Barium		2000	2000	**1440**	**102**	**767**	**88.2**	**177**	**355**	**868**
Beryllium		4	4	<3	<3	<3	<3	<3	<3	<3
Cadmium		5	5	<5	<5	<5	<5	<5	<5	<5
Calcium		NA	NA	n/a	n/a	**174000**	**30000**	n/a	n/a	n/a
Chromium		100	100	<5	<5	<5	<5	<5	<5	<5
Hexavalent Chromium		NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt		NA	NA	n/a	n/a	**10.4**	<10	n/a	n/a	n/a
Copper		1300	1300	n/a	n/a	<10	<10	n/a	n/a	n/a
Iron		NA	NA	n/a	n/a	**5350**	**1890**	n/a	n/a	n/a
Lead		15	15	<5	<5	<5	<5	<5	<5	<5
Magnesium		NA	NA	n/a	n/a	**44500**	**6360**	n/a	n/a	n/a
Manganese		50	50	**771**	**264**	**9370**	**502**	**943**	**1480**	**496**
Mercury		2	2	n/a	n/a	<0.2	<0.2	n/a	n/a	n/a
Nickel		100	100	<5	<5	**15.1**	<5	<5	<5	<5
Potassium		NA	NA	n/a	n/a	**10500**	<1000	n/a	n/a	n/a
Selenium		50	50	n/a	n/a	<10	<10	n/a	n/a	n/a
Silver		100	100	n/a	n/a	<5	<5	n/a	n/a	n/a
Sodium		NA	NA	n/a	n/a	**441000**	**260000**	n/a	n/a	n/a
Thallium		NA	NA	n/a	n/a	<10	<10	n/a	n/a	n/a
Vanadium		710	110	n/a	n/a	<10	<10	n/a	n/a	n/a
Zinc		5000	5000	n/a	n/a	<20	<20	n/a	n/a	n/a

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

Table 10e

Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface)		OW-37	OW-39	SB-08	SB-09	SB-11	SB-11-FIL	SB-11-UNFIL	SB-17
	Laboratory Sample Identification		A8164004	A8164013	A8184013	A8175810	A8175814	RSB0691-08	RSB0691-10	A8183916
	Date Collected		2/15/08	2/16/08	2/22/08	2/19/08	2/19/08	2/20/09	2/20/09	2/20/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]									
	Non-Residental Scenario	**Residential Scenario**								
Metals (ug/L)										
Antimony	6	6	n/a	n/a	*<50*	*<50*	*<50*	n/a	n/a	*<50*
Arsenic	10	10	**46.5**	<5	**6.8**	**23**	**12.3**	n/a	n/a	**20.9**
Barium	2000	2000	**510**	**222**	**128**	**582**	**529**	n/a	n/a	**542**
Beryllium	4	4	<3	<3	<3	<3	<3	n/a	n/a	<3
Cadmium	5	5	<5	<5	<5	<5	<5	n/a	n/a	<5
Calcium	NA	NA	n/a	n/a	**109000**	**107000**	**140000**	n/a	n/a	**185000**
Chromium	100	100	<5	<5	<5	<5	**50.1**	n/a	n/a	<5
Hexavalent Chromium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	NA	n/a	n/a	<10	<10	**21.9**	n/a	n/a	**13.8**
Copper	1300	1300	n/a	n/a	<10	<10	**42.6**	n/a	n/a	<10
Iron	NA	NA	n/a	n/a	**2350**	**5100**	**41600**	n/a	n/a	**13300**
Lead	15	15	<5	<5	**10.5**	**14.4**	**197**	<5	**13.1**	<5
Magnesium	NA	NA	n/a	n/a	**48800**	**24700**	**27600**	n/a	n/a	**61100**
Manganese	50	50	**1860**	<10	**1300**	**3740**	**1170**	n/a	n/a	**3940**
Mercury	2	2	n/a	n/a	<0.2	<0.2	<0.2	n/a	n/a	<0.2
Nickel	100	100	<5	<5	**5**	**13.4**	**41.4**	n/a	n/a	**8.9**
Potassium	NA	NA	n/a	n/a	**2690**	**5230**	**15000**	n/a	n/a	**<1000**
Selenium	50	50	n/a	n/a	<10	<10	<10	n/a	n/a	<10
Silver	100	100	n/a	n/a	<5	<5	<5	n/a	n/a	<5
Sodium	NA	NA	n/a	n/a	**208000**	**240000**	**106000**	n/a	n/a	**241000**
Thallium	NA	NA	n/a	n/a	<10	<10	<10	n/a	n/a	<10
Vanadium	710	110	n/a	n/a	<10	<10	**94.2**	n/a	n/a	<10
Zinc	5000	5000	n/a	n/a	<20	<20	**112**	n/a	n/a	<20

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

Table 10e

Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface)		SB-30	SB-36	SB-37	SB-37-FIL	SB-37-UNFIL	SB-38	TW-03	TW-05
	Laboratory Sample Identification		A8175905	A8175816	A8175815	RSB0691-09	RSB0691-11	A8175809	A8169701	A8175805
	Date Collected		2/19/08	2/19/08	2/19/08	2/20/09	2/20/09	2/19/08	2/18/08	2/19/08
	Kansas Tier II Risk-Based Standards GW Pathway[(A)]									
	Non-Residental Scenario	Residential Scenario								
Metals (ug/L)										
Antimony	6	6	*<50*	*<50*	*<50*	n/a	n/a	*<50*	*<50*	*<50*
Arsenic	10	10	<5	**15.5**	**46.3**	n/a	n/a	<5	**12.2**	**5.8**
Barium	2000	2000	**214**	**276**	**950**	n/a	n/a	**230**	**290**	**276**
Beryllium	4	4	<3	<3	<3	n/a	n/a	<3	<3	<3
Cadmium	5	5	<5	<5	<5	n/a	n/a	<5	<5	<5
Calcium	NA	NA	**84200**	**117000**	**97700**	n/a	n/a	**123000**	**152000**	**139000**
Chromium	100	100	<5	<5	**55.1**	n/a	n/a	<5	<5	<5
Hexavalent Chromium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	NA	<10	<10	**30.3**	n/a	n/a	<10	<10	<10
Copper	1300	1300	<10	<10	**21.5**	n/a	n/a	<10	<10	<10
Iron	NA	NA	**4530**	**12600**	**66500**	n/a	n/a	**944**	**4070**	**506**
Lead	15	15	<5	<5	**33.6**	<5	**7**	<5	<5	<5
Magnesium	NA	NA	**17800**	**24200**	**27500**	n/a	n/a	**25100**	**35200**	**116000**
Manganese	50	50	**607**	**3910**	**7840**	n/a	n/a	**2580**	**997**	**324**
Mercury	2	2	<0.2	<0.2	<0.2	n/a	n/a	<0.2	<0.2	<0.2
Nickel	100	100	<5	<5	**40.7**	n/a	n/a	**14.3**	<5	<5
Potassium	NA	NA	**4400**	**3510J**	**11600**	n/a	n/a	<1000	<1000	**5860**
Selenium	50	50	<10	<10	<10	n/a	n/a	<10	<10	<10
Silver	100	100	<5	<5	<5	n/a	n/a	<5	<5	<5
Sodium	NA	NA	**177000**	**142000**	**308000**	n/a	n/a	**160000**	**75000**	**269000**
Thallium	NA	NA	<10	<10	<10	n/a	n/a	<10	<10	<10
Vanadium	710	110	<10	<10	**78.8**	n/a	n/a	<10	<10	<10
Zinc	5000	5000	<20	<20	**103**	n/a	n/a	<20	<20	<20

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

Table 10e

Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-07	TW-10	TW-11	TW-12	TW-13	TW-14	TW-14-50 (DUP of TW-14)	TW-15
	Laboratory Sample Identification			A8169705	A8175806	A8175803	A8169703	A8175802	A8175807	A8175808	A8175818
	Date Collected			2/18/08	2/19/08	2/19/08	2/18/08	2/19/08	2/19/08	2/19/08	2/19/08
Metals (ug/L)											
Antimony		6	6	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*
Arsenic		10	10	<5	**10.8**	**8.1**	**5.2**	<5	**6.7**	**6.3**	**11.8**
Barium		2000	2000	**62.8**	**644**	**372**	**508**	**109**	**240**	**236**	**2990**
Beryllium		4	4	<3	<3	<3	<3	<3	<3	<3	<3
Cadmium		5	5	<5	<5	<5	<5	<5	<5	<5	<5
Calcium		NA	NA	**94300**	**66800**	**136000**	**138000**	**108000**	**113000**	**111000**	**222000**
Chromium		100	100	<5	<5	<5	<5	<5	<5	<5	<5
Hexavalent Chromium		NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt		NA	NA	<10	<10	<10	<10	<10	<10	<10	<10
Copper		1300	1300	<10	<10	<10	<10	<10	<10	<10	<10
Iron		NA	NA	**1120**	**1190**	**1450**	**1730**	**519**	**2800**	**2800**	**5820**
Lead		15	15	<5	<5	<5	**13.6**	<5	<5	<5	<5
Magnesium		NA	NA	**47100**	**36000**	**28800**	**39300**	**93600**	**21500**	**21300**	**83600**
Manganese		50	50	**31.4**	**194**	**214**	**947**	**98.6**	**1500**	**1510**	**1890**
Mercury		2	2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel		100	100	<5	<5	<5	<5	<5	<5	<5	<5
Potassium		NA	NA	**2120**	**1470**	**1600**	<1000	**5440**	<1000	<1000	**2300**
Selenium		50	50	<10	<10	<10	<10	<10	<10	<10	<10
Silver		100	100	<5	<5	<5	<5	<5	<5	<5	<5
Sodium		NA	NA	**18900**	**272000**	**61300**	**90100**	**326000**	**75800**	**75000**	**473000**
Thallium		NA	NA	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium		710	110	<10	<10	<10	<10	<10	<10	<10	<10
Zinc		5000	5000	<20	<20	<20	<20	<20	<20	<20	<20

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

Table 10e

Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Residential Scenario	TW-16	TW-17	TW-18	TW-19	TW-20	TW-21	TW-22	TW-24S	TW-25S
Location Identification and Sample Interval (Feet below ground surface)											
Laboratory Sample Identification			A8175804	A8169707	A8175817	A8169702	A8169710	A8169708	A8175903	A8175902	A8169709
Date Collected			2/19/08	2/18/08	2/19/08	2/18/08	2/18/08	2/18/08	2/19/08	2/19/08	2/18/08
Metals (ug/L)											
Antimony	6	6	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*
Arsenic	10	10	**10.7**	**5.6**	<5	**12.9**	**9.8**	**12.6**	<5	<5	<5
Barium	2000	2000	**795**	**388**	**334**	**274**	**306**	**499**	**206**	**341**	**161**
Beryllium	4	4	<3	<3	<3	<3	<3	<3	<3	<3	<3
Cadmium	5	5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calcium	NA	NA	**150000**	**111000**	**139000**	**177000**	**106000**	**80300**	**96800**	**128000**	**135000**
Chromium	100	100	<5	<5	<5	<5	<5	<5	<5	<5	<5
Hexavalent Chromium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10
Copper	1300	1300	<10	<10	<10	<10	<10	<10	<10	<10	<10
Iron	NA	NA	**10600**	**2710**	**189**	**9810**	**2170**	**1780**	**380**	<100	**<100**
Lead	15	15	<5	<5	<5	<5	<5	<5	<5	<5	<5
Magnesium	NA	NA	**35700**	**18500**	**21800**	**38100**	**17300**	**13500**	**13200**	**26500**	**18800**
Manganese	50	50	**1600**	**2270**	**261**	**2300**	**2790**	**936**	**683**	**413**	**26.8**
Mercury	2	2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	100	100	<5	<5	<5	<5	<5	<5	<5	**8.7**	<5
Potassium	NA	NA	<1000	<1000	<1000	<1000	<1000	<1000	**1450J**	**1750**	**1890**
Selenium	50	50	<10	<10	<10	<10	<10	<10	<10	<10	<10
Silver	100	100	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sodium	NA	NA	**218000**	**186000**	**75200**	**137000**	**74000**	**312000**	**604000**	**324000**	**132000**
Thallium	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium	710	110	<10	<10	<10	<10	<10	<10	<10	<10	<10
Zinc	5000	5000	<20	<20	<20	<20	<20	<20	<20	<20	<20

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

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Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-27S	TW-29	TW-31S	TW-32S	TW-34	TW-35	TW-36	TW-38	TW-39
Location Identification and Sample Interval (Feet below ground surface)											
Laboratory Sample Identification			A8175904	A8169711	A8175901	A8183904	A8184008	A8169706	A8034301	A8169704	A8183901
Date Collected			2/19/08	2/18/08	2/19/08	2/20/08	2/22/08	2/18/08	1/9/08	2/18/08	2/20/08
Metals (ug/L)											
Antimony	6	6	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*
Arsenic	10	10	**6.4**	**9.1**	<5	**8**	<5	<5	**8.2**	<5	<5
Barium	2000	2000	**223**	**272**	**132**	**386**	**155**	**75.4**	**543**	**227**	**151**
Beryllium	4	4	<3	<3	<3	<3	<3	<3	<3	<3	<3
Cadmium	5	5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calcium	NA	NA	**139000**	**133000**	**87300**	**407000**	**140000**	**86300**	**485000**	**318000**	**244000**
Chromium	100	100	<5	<5	<5	10.9	<5	<5	**17.7**	<5	<5
Hexavalent Chromium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	NA	<10	<10	<10	<10	<10	**33.2**	<10	<10	<10
Copper	1300	1300	<10	<10	<10	<10	<10	**12.8**	<10	<10	<10
Iron	NA	NA	**1240**	**10900**	**347**	**6840**	**155**	<100	**12200**	<100	**4830**
Lead	15	15	<5	<5	<5	<5	<5	<5	<5	<5	<5
Magnesium	NA	NA	**91600**	**61200**	**67300**	**36100**	**29600**	**36300**	**41600**	**84700**	**78100**
Manganese	50	50	**507**	**1270**	**96.8**	**435**	**167**	**20.8**	**843**	**84.3**	**1640**
Mercury	2	2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	100	100	**7.6**	<5	**8.7**	**6.5**	**6.3**	**62**	**14.6**	**6.6**	**15**
Potassium	NA	NA	**12400**	**1490**	**13300**	**6360**	**17400**	**7680**	**2970**	**7800**	**1980**
Selenium	50	50	<10	<10	<10	<10	<10	<10	<10	<10	<10
Silver	100	100	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sodium	NA	NA	**225000**	**281000**	**323000**	**176000**	**137000**	**349000**	**254000**	**215000**	**569000**
Thallium	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium	710	110	<10	<10	<10	**10.5**	<10	<10	**17**	<10	<10
Zinc	5000	5000	<20	<20	<20	<20	<20	<20	<20	<20	<20

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

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Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Location Identification and Sample Interval (Feet below ground surface) / Laboratory Sample Identification / Date Collected	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-40	TW-41	TW-42	TW-43	TW-45	TW-46	TW-47	TW-48	TW-51
	Laboratory Sample Identification			A8184009	A8184007	A8184003	A8184002	A8183914	A8183912	A8183913	A8169712	A8184012
	Date Collected			2/22/08	2/22/08	2/22/08	2/22/08	2/20/08	2/20/08	2/20/08	2/18/08	2/22/08
Metals (ug/L)												
Antimony		6	6	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*
Arsenic		10	10	<5	**9.7**	**15.9**	**5.4**	**21.4**	**6.7**	<5	**5.8**	**9.3**
Barium		2000	2000	**364**	**315**	**586**	**950**	**452**	**312**	**2720**	**261**	**270**
Beryllium		4	4	<3	<3	<3	<3	<3	<3	<3	<3	<3
Cadmium		5	5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Calcium		NA	NA	**180000**	**212000**	**161000**	**171000**	**183000**	**147000**	**80300**	**116000**	**127000**
Chromium		100	100	<5	<5	<5	<5	<5	<5	<5	<5	<5
Hexavalent Chromium		NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt		NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10
Copper		1300	1300	<10	<10	<10	<10	<10	<10	<10	<10	<10
Iron		NA	NA	**1680**	**4580**	**24100**	**2840**	**14400**	**8070**	**3830**	**1260**	**8630**
Lead		15	15	<5	<5	<5	<5	<5	<5	<5	<5	<5
Magnesium		NA	NA	**53400**	**44900**	**29000**	**28200**	**33300**	**26300**	**52700**	**19800**	**25300**
Manganese		50	50	**261**	**372**	**1890**	**219**	**2300**	**1160**	**44.4**	**932**	**781**
Mercury		2	2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel		100	100	<5	<5	<5	**5.9**	<5	<5	<5	<5	<5
Potassium		NA	NA	**18300**	**4070**	**1200**	**6360**	**<1000**	**<1000**	**1500**	**2560**	**<1000**
Selenium		50	50	<10	<10	<10	<10	<10	<10	<10	<10	<10
Silver		100	100	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sodium		NA	NA	**396000**	**393000**	**218000**	**50900**	**244000**	**165000**	**103000**	**95000**	**98100**
Thallium		NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium		710	110	<10	<10	<10	<10	<10	<10	<10	<10	<10
Zinc		5000	5000	<20	<20	<20	<20	<20	<20	<20	**45.5**	<20

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

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Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-52	TW-53	TW-55	TW-56	TW-58	TW-60	TW-63	TW-63-51 (DUP of TW-63)
Location Identification and Sample Interval (Feet below ground surface)										
Laboratory Sample Identification			A8184011	A8187801	A8184010	A8169715	A8169716	A8169718	A8175811	A8175812
Date Collected			2/22/08	2/23/08	2/22/08	2/18/08	2/18/08	2/18/08	2/19/08	2/19/08
Metals (ug/L)										
Antimony	6	6	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*
Arsenic	10	10	<5	**13.1**	**176**	**12.1**	**17.4**	**14.5**	**8.6**	**13.6**
Barium	2000	2000	**300**	**602**	**177**	**372**	**317**	**369**	**171**	**312**
Beryllium	4	4	<3	<3	<3	<3	<3	<3	<3	<3
Cadmium	5	5	<5	<5	<5	<5	<5	<5	<5	<5
Calcium	NA	NA	**121000**	**155000**	**91400**	**114000**	**111000**	**164000**	**100000**	**529000**
Chromium	100	100	<5	<5	<5	<5	<5	<5	<5	**18.2**
Hexavalent Chromium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10
Copper	1300	1300	<10	<10	<10	<10	<10	<10	<10	<10
Iron	NA	NA	**3170**	**2700**	**<100**	**995**	**1160**	**2850**	**224**	**8610**
Lead	15	15	<5	<5	<5	<5	<5	<5	<5	**7.9**
Magnesium	NA	NA	**15400**	**22900**	**34900**	**20600**	**26100**	**52600**	**22000**	**31000**
Manganese	50	50	**1040**	**2220**	**52.3**	**190**	**204**	**176**	**13.5**	**201**
Mercury	2	2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	100	100	<5	<5	**31.7**	<5	<5	<5	**16.9**	**58.7**
Potassium	NA	NA	**<1000**	**1650**	**10800**	**7010**	**3540**	**2860**	**16600**	**17200**
Selenium	50	50	<10	<10	<10	<10	<10	<10	<10	<10
Silver	100	100	<5	<5	<5	<5	<5	<5	<5	<5
Sodium	NA	NA	**40300**	**71100**	**832000**	**37900**	**32000**	**122000**	**112000**	**107000**
Thallium	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium	710	110	<10	<10	<10	<10	<10	<10	<10	**15**
Zinc	5000	5000	<20	<20	<20	**124**	<20	**33.7**	<20	<20

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

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Groundwater Sample Analytical Data - Metals
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El Droado Refinery, El Dorado, Kansas
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Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residential Scenario	Residential Scenario	TW-64	TW-65	TW-67	TW-69	TW-73	TW-74	TW-75	TW-76
Location Identification and Sample Interval (Feet below ground surface)			TW-64	TW-65	TW-67	TW-69	TW-73	TW-74	TW-75	TW-76
Laboratory Sample Identification			A8169717	A8169714	A8175813	A8169713	A8183902	A8184001	A8184006	A8184005
Date Collected			2/18/08	2/18/08	2/19/08	2/18/08	2/20/08	2/22/08	2/22/08	2/22/08
Metals (ug/L)										
Antimony	6	6	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*	*<50*
Arsenic	10	10	**6**	**10.4**	**51.6**	<5	<5	<5	<5	**6.9**
Barium	2000	2000	**69.4**	**384**	**19.5**	**165**	**409**	**287**	**453**	**910**
Beryllium	4	4	<3	<3	<3	<3	<3	<3	<3	<3
Cadmium	5	5	<5	<5	<5	<5	<5	<5	<5	<5
Calcium	NA	NA	**402000**	**240000**	**449000**	**173000**	**124000**	**171000**	**159000**	**161000**
Chromium	100	100	<5	<5	<5	<5	<5	<5	<5	<5
Hexavalent Chromium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10
Copper	1300	1300	<10	<10	<10	<10	<10	<10	<10	<10
Iron	NA	NA	**2380**	**6420**	**40200**	<100	**3730**	**147**	**783**	**11000**
Lead	15	15	<5	<5	<5	<5	<5	<5	<5	<5
Magnesium	NA	NA	**46400**	**16000**	**174000**	**25300**	**26000**	**39400**	**36800**	**23700**
Manganese	50	50	**355**	**914**	**1700**	**36.3**	**2280**	**1520**	**204**	**797**
Mercury	2	2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	100	100	<5	<5	**11.9**	<5	**5.3**	<5	<5	<5
Potassium	NA	NA	**3070**	**1040J**	**8700**	**2080**	<1000	<1000	<1000	<1000
Selenium	50	50	<10	<10	<10	<10	<10	<10	<10	<10
Silver	100	100	<5	<5	<5	<5	<5	<5	<5	<5
Sodium	NA	NA	**281000**	**59400**	**1810000**	**109000**	**20300**	**89000**	**23300**	**19100**
Thallium	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10
Vanadium	710	110	<10	<10	<10	<10	<10	<10	<10	<10
Zinc	5000	5000	**41**	**23**	<20	**22.8**	<20	<20	<20	<20

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

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Groundwater Sample Analytical Data - Metals
El Paso Merchant Energy - Petroleum Company
El Droado Refinery, El Dorado, Kansas
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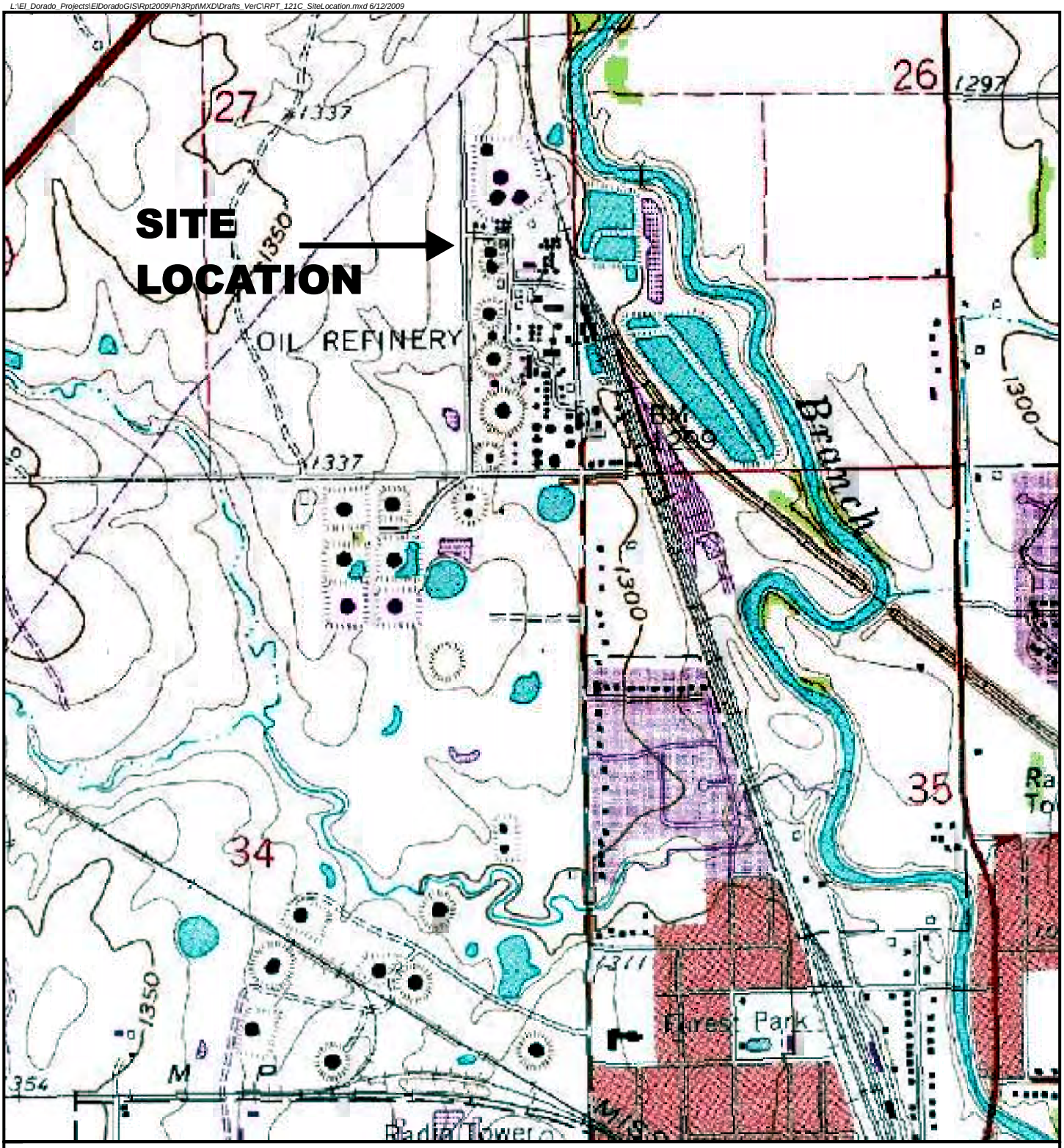
Analyte (Units)	Kansas Tier II Risk-Based Standards GW Pathway[(A)] Non-Residental Scenario	Residential Scenario	TW-77	TW-79	W-01S	W-16S	W-22	W-24	W-26
Location Identification and Sample Interval (Feet below ground surface)			TW-77	TW-79	W-01S	W-16S	W-22	W-24	W-26
Laboratory Sample Identification			A7E64002	A8100901	A8164016	A8183903	A8164010	A8160508	A8175801
Date Collected			12/17/07	1/29/08	2/16/08	2/20/08	2/16/08	2/15/08	2/19/08
Metals (ug/L)									
Antimony	6	6	*<50*	*<50*	n/a	*<50*	n/a	n/a	*<50*
Arsenic	10	10	**27.4**	**25**	<5	<5	**37**	**12.3**	<5
Barium	2000	2000	**466**	**3110**	**290**	**229**	**293**	**283**	**64.3**
Beryllium	4	4	<3	<3	<3	<3	<3	<3	<3
Cadmium	5	5	<5	<5	<5	<5	<5	<5	<5
Calcium	NA	NA	**286000**	**1190000**	n/a	**210000**	n/a	n/a	**198000**
Chromium	100	100	**27.3**	**53.3**	<5	<5	<5	<5	<5
Hexavalent Chromium	NA	NA	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cobalt	NA	NA	<10	**12.9**	n/a	<10	n/a	n/a	<10
Copper	1300	1300	**13.4**	**26.8**	n/a	<10	n/a	n/a	<10
Iron	NA	NA	**24100**	**25000**	n/a	**331**	n/a	n/a	**1390**
Lead	15	15	**13**	**12.3**	<5	<5	<5	<5	<5
Magnesium	NA	NA	**34500**	**34000**	n/a	**32800**	n/a	n/a	**38500**
Manganese	50	50	**3820**	**2210**	**1800**	**401**	**1540**	**1970**	**1080**
Mercury	2	2	<0.2	<0.2	n/a	<0.2	n/a	n/a	<0.2
Nickel	100	100	**19.6**	**63.5**	<5	<5	**7.2**	<5	**6.9**
Potassium	NA	NA	**5350**	**8590**	n/a	**1610**	n/a	n/a	**1230**
Selenium	50	50	<10	<10	n/a	<10	n/a	n/a	<10
Silver	100	100	<5	<5	n/a	<5	n/a	n/a	<5
Sodium	NA	NA	**19900**	**304000**	n/a	**126000**	n/a	n/a	**45900**
Thallium	NA	NA	<10	<10	n/a	<10	n/a	n/a	<10
Vanadium	710	110	**46**	**87.2**	n/a	<10	n/a	n/a	<10
Zinc	5000	5000	**35**	**56.4**	n/a	<20	n/a	n/a	<20

(ug/L)	micrograms per liter
Italics	Italicized result indicates reporting limit greater than KDHE standard.
Bold	Bolded result indicates positively identified compound.
Shaded	Shaded result indicates result greater than or equal to the Kansas Tier II RBSL Groundwater Pathway Residential Scenario.
NA	Not applicable
n/a	Not analyzed
(A)	Risk-Based Standard of Kansas (Kansas Department of Health and Environment, 2003 and 2003, 2004, and 2007 revisions).
DUP	Duplicate sample

Figures

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT_121C_SiteLocation.mxd 6/12/2009



LEGEND

U.S. GEOLOGICAL SURVEY DIGITAL ORTHOPHOTO QUADRANGLE (DOQ) OBTAINED FROM MICROSOFT TERRASERVER. DATE: JULY 1, 1979.

N
W E
S

SCALE

0 1,000 2,000

SCALE IN FEET

DRAWING REFERENCE(S):			
1. U.S. GEOLOGICAL SURVEY DIGITAL ORTHOPHOTO QUADRANGLE (DOQ) OBTAINED FROM MICROSOFT TERRASERVER. DATE: JULY 1, 1979. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.	DESIGNED BY	R. Hultgren	06/09
	DRAWN BY	R. Hultgren	06/09
	CHECKED BY	R. Hultgren	06/09
	APPROVED BY	W. Pickens	####
	PROJECT MANAGER	D. Mick	####
	PROJECT NO.	1914351.90010408	
	FILE NAME	RPT_121C_SiteLocation.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

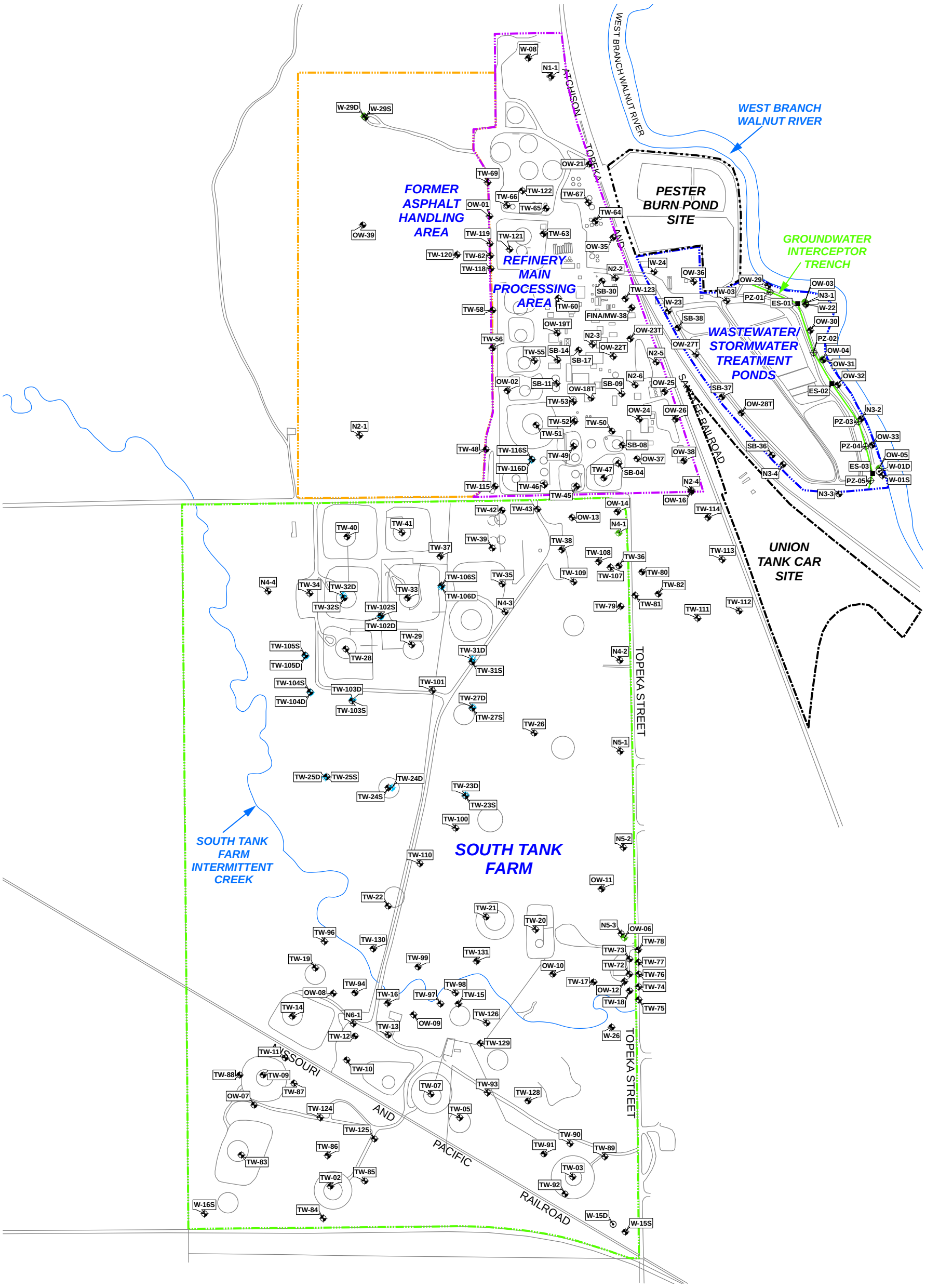
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

MWH

TITLE: SITE LOCATION MAP

FIGURE: 1

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-122C_MWNetwork.mxd 8/3/2009



LEGEND:

- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- EXTRACTION SUMP
- IN-TRENCH PIEZOMETER
- GROUNDWATER INTERCEPTOR TRENCH

APPROXIMATE BOUNDARIES

- ASPHALT HANDLING AREA
- REFINERY MAIN PROCESS AREA
- WASTEWATER/STORMWATER TREATMENT PONDS
- SOUTH TANK FARM
- PESTER BURN POND SITE (OFFSITE)
- UNION TANK CAR SITE (OFFSITE)

N W E S

SCALE

0 600 1,200

SCALE IN FEET

NOTES:
WELL SYMBOLS LABELED WITH WELL NAME.

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	08/09
DRAWN BY	R. Hultgren	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-122C_MWNetwork.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE: SITE LAYOUT AND MONITORING WELL NETWORK MAP

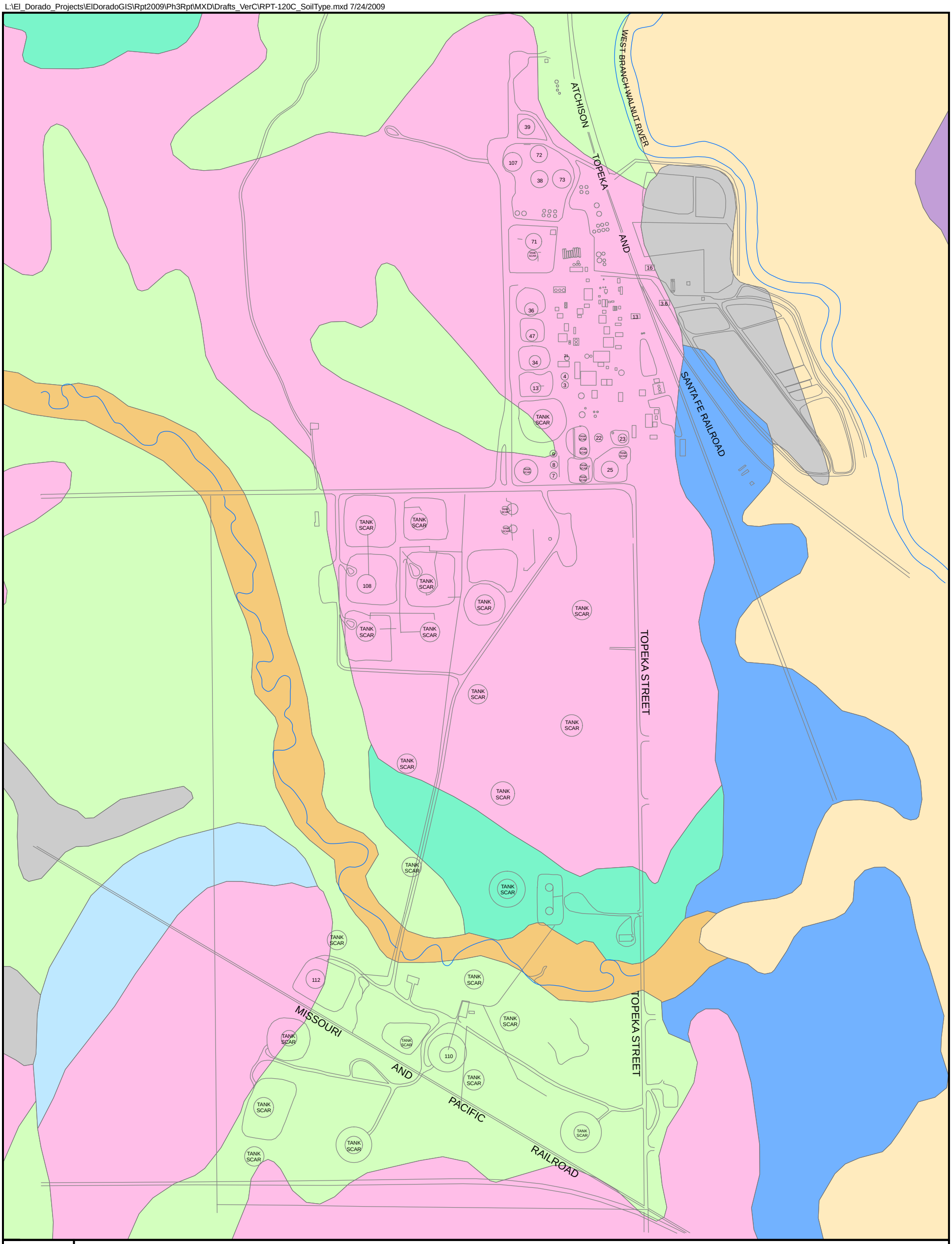
FIGURE: 2

MWH

TITLE: SITE LAYOUT AND MONITORING WELL NETWORK MAP

FIGURE: 2

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-120C_SoilType.mxd 7/24/2009



TITLE

BACKGROUND SOIL TYPE MAP

LEGEND:

SOIL TYPE CLASSIFICATIONS

- BREWER SILTY CLAY LOAM, RARELY FLOODED
- LABETTE SILTY CLAY LOAM, 1 TO 3 PERCENT SLOPES
- LABETTE-DWIGHT COMPLEX, 0 TO 3 PERCENT SLOPES
- LABETTE-SOGN SILTY CLAY LOAMS, 0 TO 8 PERCENT SLOPES
- NORGE SILT LOAM, 1 TO 3 PERCENT SLOPES
- OIL WASTE LAND
- SOGN SOILS, 0 TO 8 PERCENT SLOPES
- VERDIGRIS SILT LOAM, OCCASIONALLY FLOODED
- VERDIGRIS SOILS, FREQUENTLY FLOODED

N W E S

SCALE

0 600 1,200

SCALE IN FEET

NOTES:
SOURCE: NATURAL RESOURCES CONSERVATION SERVICE (NRCS) SOIL SURVEY, BUTLER COUNTY, KANSAS.

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	07/09
CHECKED BY	R. Hultgren	07/09
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PROJECT MANAGER	D. Mick	07/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-120C_SoilType.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE: BACKGROUND SOIL TYPE MAP

MWH

FIGURE: 3

FIGURE 3

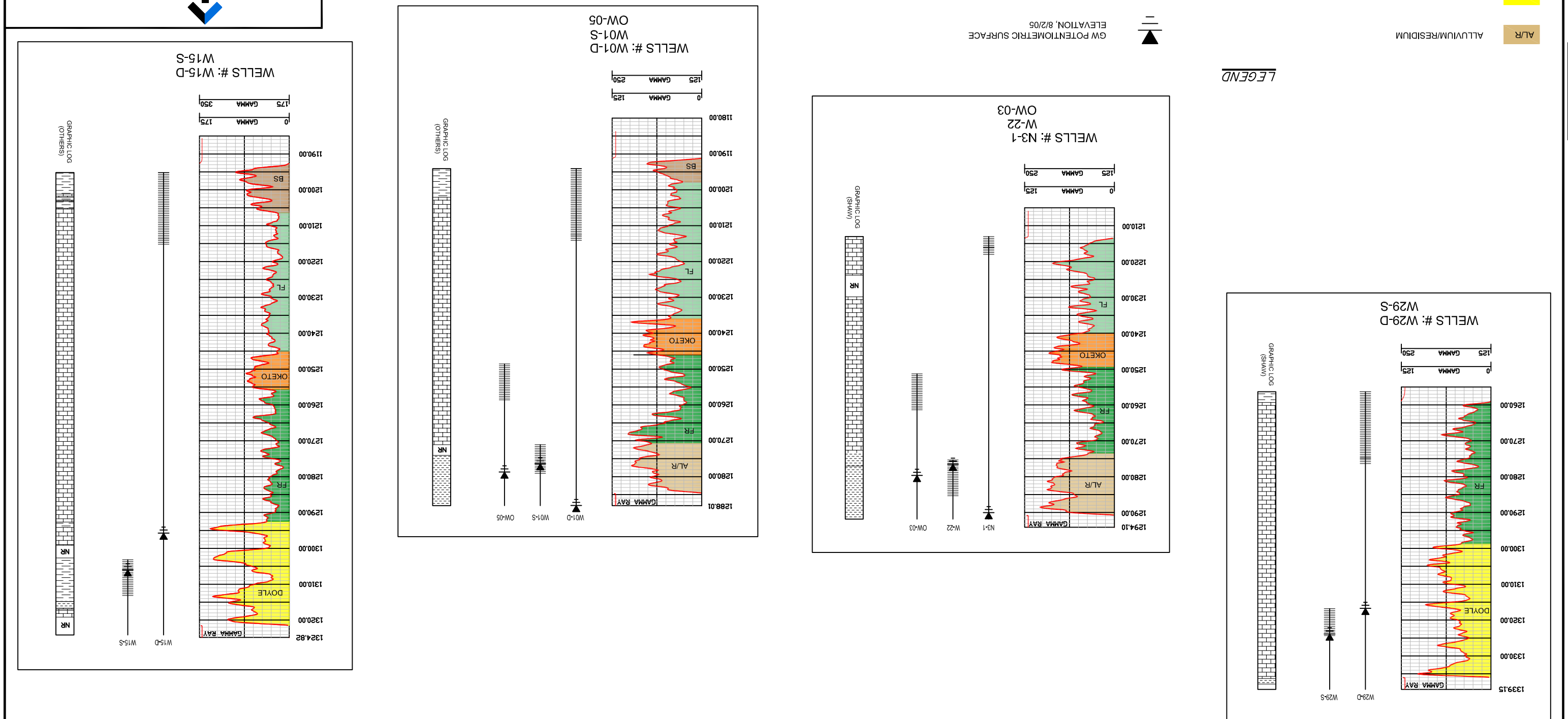
AutoCAD FILE: Drill Logs_Gamma-Ray.dwg PROJECT NUMBER: 1004306

LEGEND

AL/R	ALLUVIUM/RESIDUUM
DOYLE	DOYLE SHALE
FR	FORT RILEY LIMESTONE MEMBER (BARNESTON LIMESTONE)
OKETO	OKETO SHALE MEMBER (BARNESTON LIMESTONE)
FL	FLORENCE LIMESTONE MEMBER (BARNESTON LIMESTONE)
BS	BLUE SPRINGS SHALE MEMBER (MATFIELD SHALE)

GW POTENTIOMETRIC SURFACE ELEVATION, 8/2/05

WELL SCREEN INTERVAL



REV. No.	REVISIONS	DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
0	EL DORADO LOGS	7/18/05	WEP	MPW	

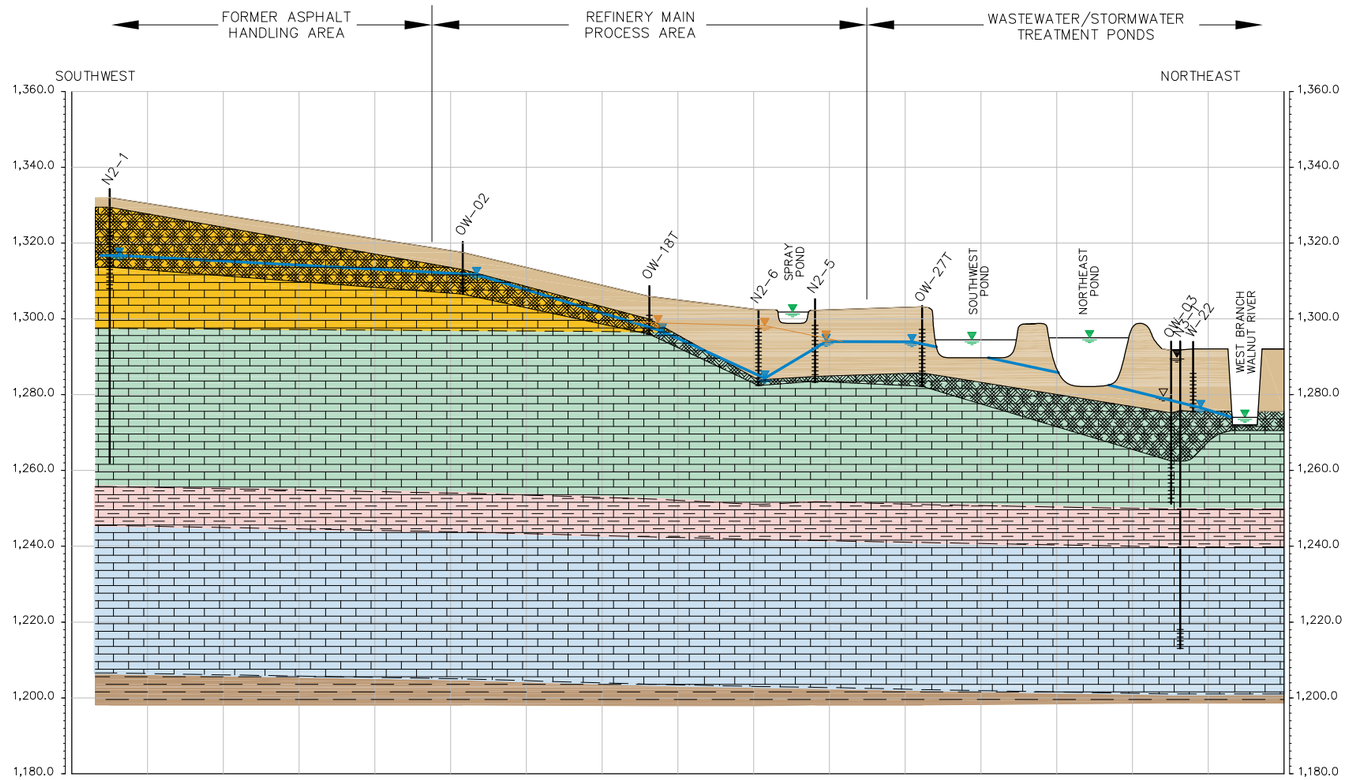
elpaso

PROJECT: EL DORADO REFINERY, EL DORADO, KS

FIGURE TITLE: GAMMA LOG INTERPRETATION AND CLUSTERED WELL DATA

MWH

MWH PROJECT NO: 1004306 DATE: 7/18/05 SHEET 1 OF 1 FIGURE No. 4



LEGEND

- APPARENT TOP OF LNAPL ELEVATION, 8/02/05, FEET AMSL
- SURFACE WATER ELEVATION, 8/2/05, FEET AMSL
- SHALLOW WELL – GROUNDWATER TABLE ELEVATION, 8/2/05, FEET AMSL
- FORT RILEY WELL – GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, 8/2/05, FEET AMSL
- FLORENCE WELL – GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION, 8/2/05, FEET AMSL
- FRACTURED ROCK
- LIMESTONE FORMATION
- SHALE FORMATION
- LIMESTONE/SHALE FORMATION
- ALLUVIUM / RESIDUUM
- DOYLE SHALE
- FORT RILEY LIMESTONE MEMBER (BARNESTON LIMESTONE)
- OKETO SHALE MEMBER (BARNESTON LIMESTONE)
- FLORENCE LIMESTONE MEMBER (BARNESTON LIMESTONE)
- BLUE SPRINGS SHALE MEMBER (MATFIELD SHALE)

WELL SCREEN LOCATION

SOIL BORING

40'

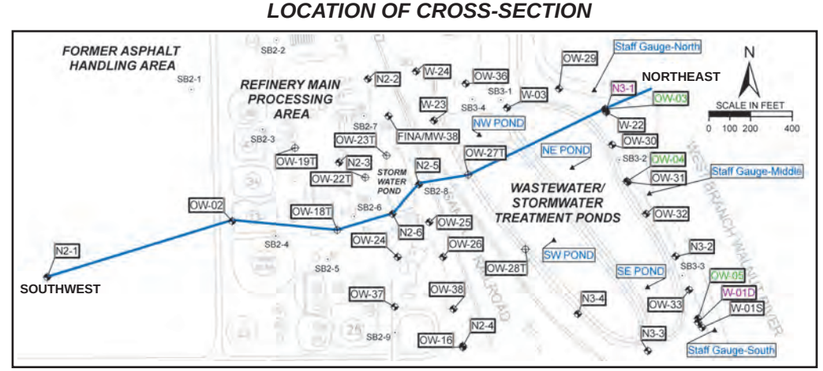
0

0

400'

HORIZONTAL SCALE: 1" = 400'
VERTICAL SCALE: 1" = 40'
VERTICAL EXAGGERATION 10X

LOCATION OF CROSS-SECTION



elpaso

PROJECT LOCATION
EL DORADO, KANSAS

PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
GENERAL GEOLOGIC CROSS-SECTION

MWH

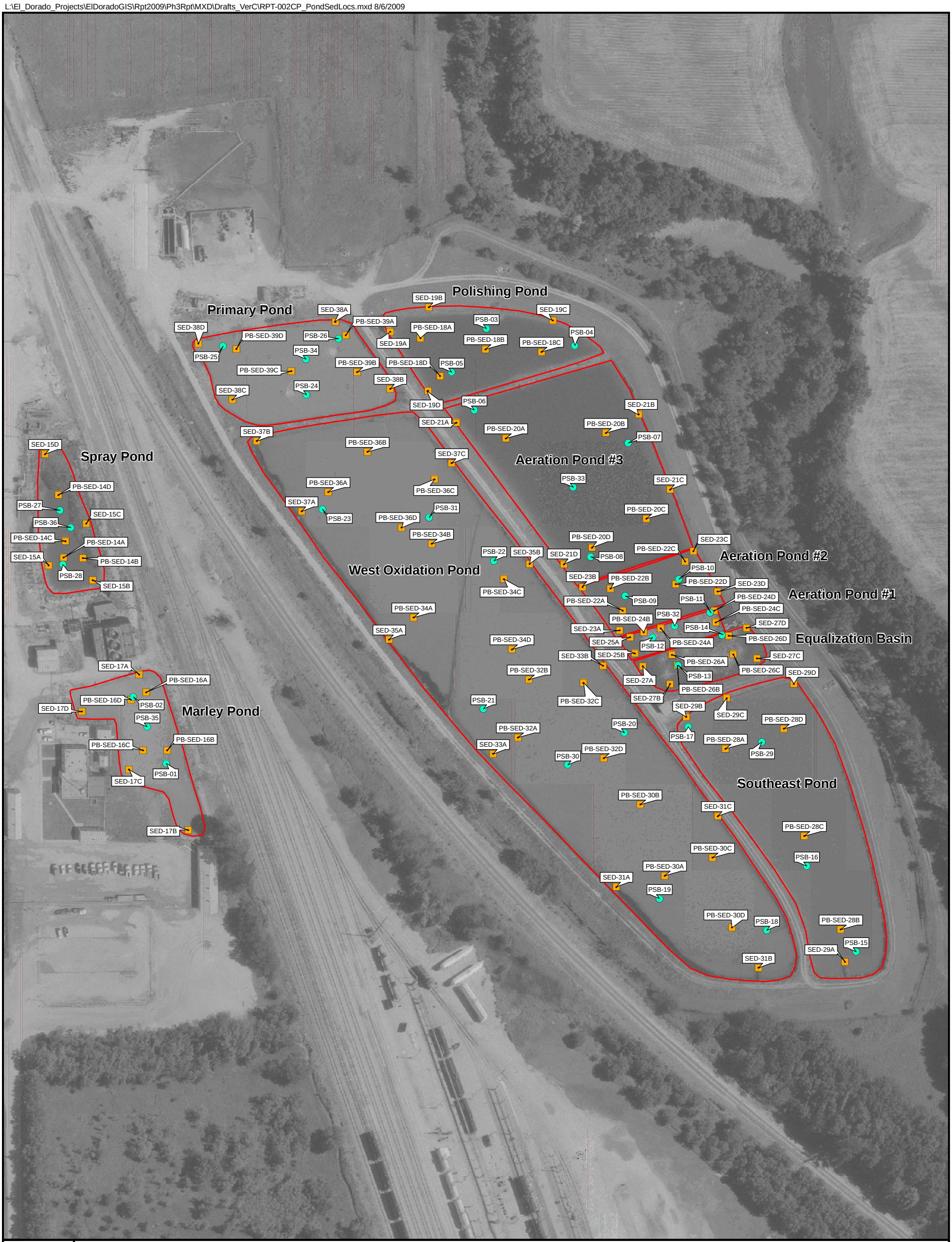
Sheet 21 Of 30 Sheets

SCALE 1" = 400' (Horz)

FIGURE 5

AutoCAD FILE: Cross-Sections.dwg PROJECT NUMBER: 1024317 L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\PDF\PrepFigs\Figure 05_GenGeologicXSect.ai

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-002CP_PondSedLocs.mxd 8/6/2009



TITLE

POND SEDIMENT AND SOIL SAMPLE LOCATION MAP

FIGURE

6

LEGEND:

- POND SOIL BORING LOCATION
- POND SEDIMENT SAMPLE LOCATION
- POND BOUNDARY

N
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SCALE

0 150 300

SCALE IN FEET

NOTES:
POND BANK (SIDEWALL) AND POND BOTTOM (FLOOR) COMPOSITE SAMPLES WERE COLLECTED FROM EACH POND, AT A PRE-DETERMINED FREQUENCY: 4 EACH FOR SOUTHWEST POND, 2 EACH FOR MARLEY AND SPRAY PONDS, 1 EACH FOR EACH OF THE REMAINING PONDS.
UP TO FOUR ALIQUOT LOCATIONS (LABELED A, B, C, D) WERE SAMPLED FOR EACH POND BANK OR BOTTOM COMPOSITE SAMPLE.
POND BANK ALIQUOT LOCATIONS WERE ASSIGNED NAMES SUCH AS SED-31A.
POND BOTTOM ALIQUOT LOCATIONS WERE ASSIGNED NAMES SUCH AS PB-SED-30A.

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	08/09
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APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-002CP_PondSedLocs.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

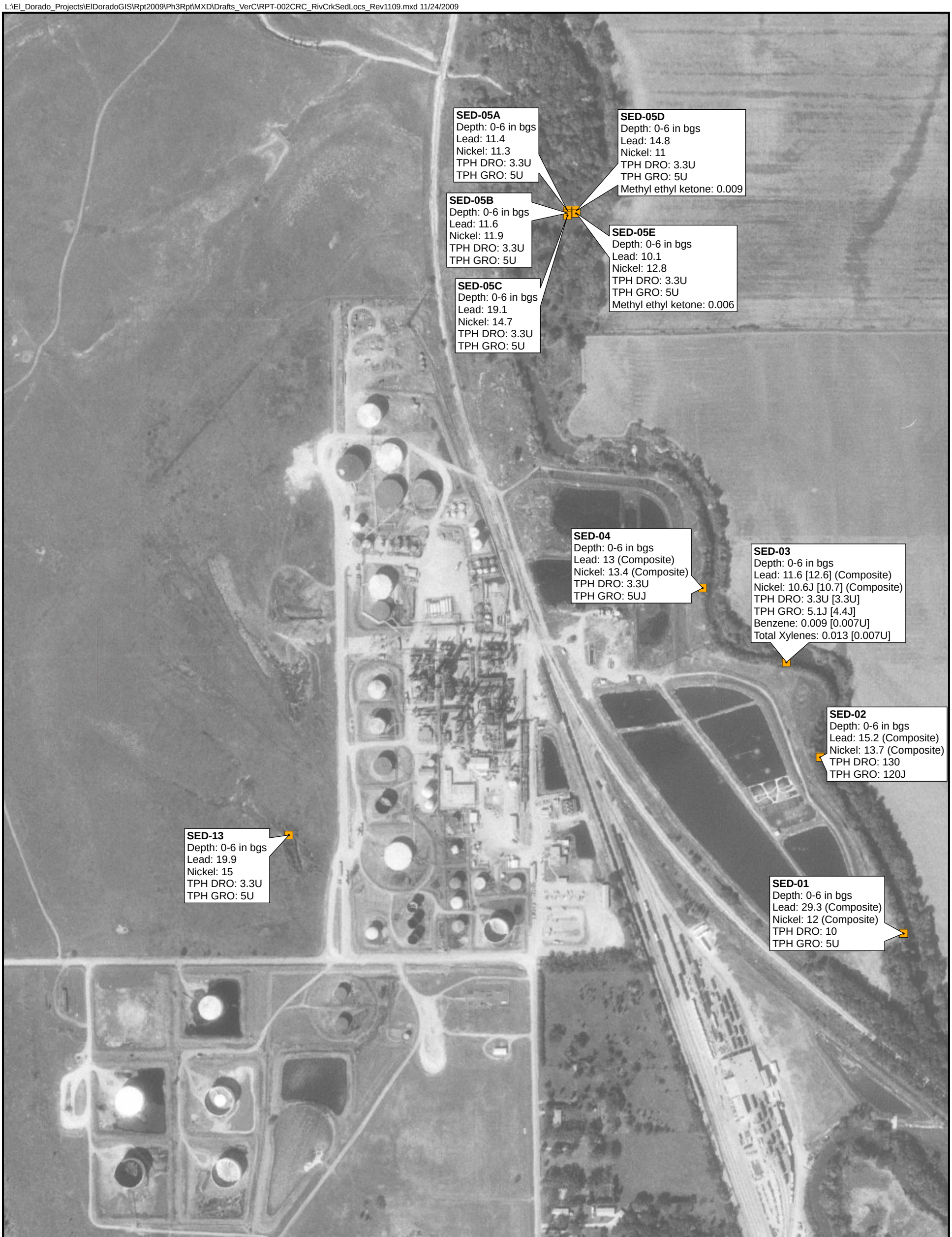
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

MWH

TITLE: POND SEDIMENT AND SOIL SAMPLE LOCATION MAP

FIGURE: 6

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-002CRC_RivCrkSedLocs_Rev1109.mxd 11/24/2009



LEGEND:

SEDIMENT SAMPLE

NOTES:
SEDIMENT SAMPLE LOCATIONS LABELED WITH NAME, SAMPLING DEPTH, ANALYTE, AND CONCENTRATION IN SEDIMENT (mg/kg).
EXCEEDANCES OF THE CORRESPONDING CONSENSUS-BASED THRESHOLD EFFECT CONCENTRATION (TEC) FOR LEAD (35.8 mg/kg), NICKEL (22.7 mg/kg), AND PYRENE (0.195 mg/kg), WERE OBSERVED IN RIVER AND CREEK SEDIMENT SAMPLES.
THERE ARE NO APPLICABLE TECs AVAILABLE FOR TPH DRO, TPH GRO, AND SEVERAL VOCs AND SVOCs. THEREFORE, RESULTS FOR LEAD, NICKEL, TPH DRO, AND TPH GRO ARE SHOWN FOR ALL SEDIMENT SAMPLES, AND DETECTIONS OF ADDITIONAL VOCs AND SVOCs ARE SHOWN AS APPLICABLE.
RESULTS EXCEEDING SCREENING LEVEL ARE SHOWN IN **BOLDFACE** TYPE.
DUPLICATE RESULTS SHOWN IN BRACKETS [ ] FOR APPLICABLE ANALYTE(S) AND RESULT(S).
in bgs = INCHES BELOW GROUND SURFACE
1U = NOT DETECTED AT REPORTING LIMIT SHOWN. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.

N
W E
S

SCALE
0 400 800
SCALE IN FEET

TITLE
RIVER AND CREEK SEDIMENT SAMPLE LOCATION DATA MAP NORTHERN AREA

FIGURE
7

DRAWING REFERENCE(S):
AERIAL PHOTOGRAPH PRODUCED BY TERRASERVER-USA FROM OCTOBER 2, 1991 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	11/09
CHECKED BY	R. Hultgren	11/09
APPROVED BY	W. Pickens	11/09
PROJECT MANAGER	D. Mick	11/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-002CRC_RivCrkSedLocs_Rev1109.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.
TITLE
RIVER AND CREEK SEDIMENT SAMPLE LOCATION DATA MAP NORTHERN AREA

MWH

FIGURE
7

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-002CRC_RivCrkSedLocs_Rev1109.mxd 11/24/2009

TITLE
RIVER AND CREEK SEDIMENT SAMPLE LOCATION DATA MAP SOUTHERN AREA

FIGURE
8

LEGEND:

SEDIMENT SAMPLE

NOTES:
SEDIMENT SAMPLE LOCATIONS LABELED WITH NAME, SAMPLING DEPTH, ANALYTE, AND CONCENTRATION IN SEDIMENT (mg/kg).
EXCEEDANCES OF THE CORRESPONDING CONSENSUS-BASED THRESHOLD EFFECT CONCENTRATION (TEC) FOR LEAD (35.8 mg/kg), NICKEL (22.7 mg/kg), AND PYRENE (0.195 mg/kg), WERE OBSERVED IN RIVER AND CREEK SEDIMENT SAMPLES.
THERE ARE NO APPLICABLE TECs AVAILABLE FOR TPH DRO, TPH GRO, AND SEVERAL VOCs AND SVOCs. THEREFORE, RESULTS FOR LEAD, NICKEL, TPH DRO, AND TPH GRO ARE SHOWN FOR ALL SEDIMENT SAMPLES, AND DETECTIONS OF ADDITIONAL VOCs AND SVOCs ARE SHOWN AS APPLICABLE.
RESULTS EXCEEDING SCREENING LEVEL ARE SHOWN IN **BOLDFACE** TYPE.
DUPLICATE RESULTS SHOWN IN BRACKETS [ ] FOR APPLICABLE ANALYTE(S) AND RESULT(S).
in bgs = INCHES BELOW GROUND SURFACE
1U = NOT DETECTED AT REPORTING LIMIT SHOWN. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.

N
W E
S

SCALE
0 400 800
SCALE IN FEET

DRAWING REFERENCE(S):
AERIAL PHOTOGRAPH PRODUCED BY TERRASERVER-USA FROM OCTOBER 2, 1991 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

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DRAWN BY	R. Hultgren	11/09
CHECKED BY	R. Hultgren	11/09
APPROVED BY	W. Pickens	11/09
PROJECT MANAGER	D. Mick	11/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-002CRC_RivCrkSedLocs_Rev1109.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

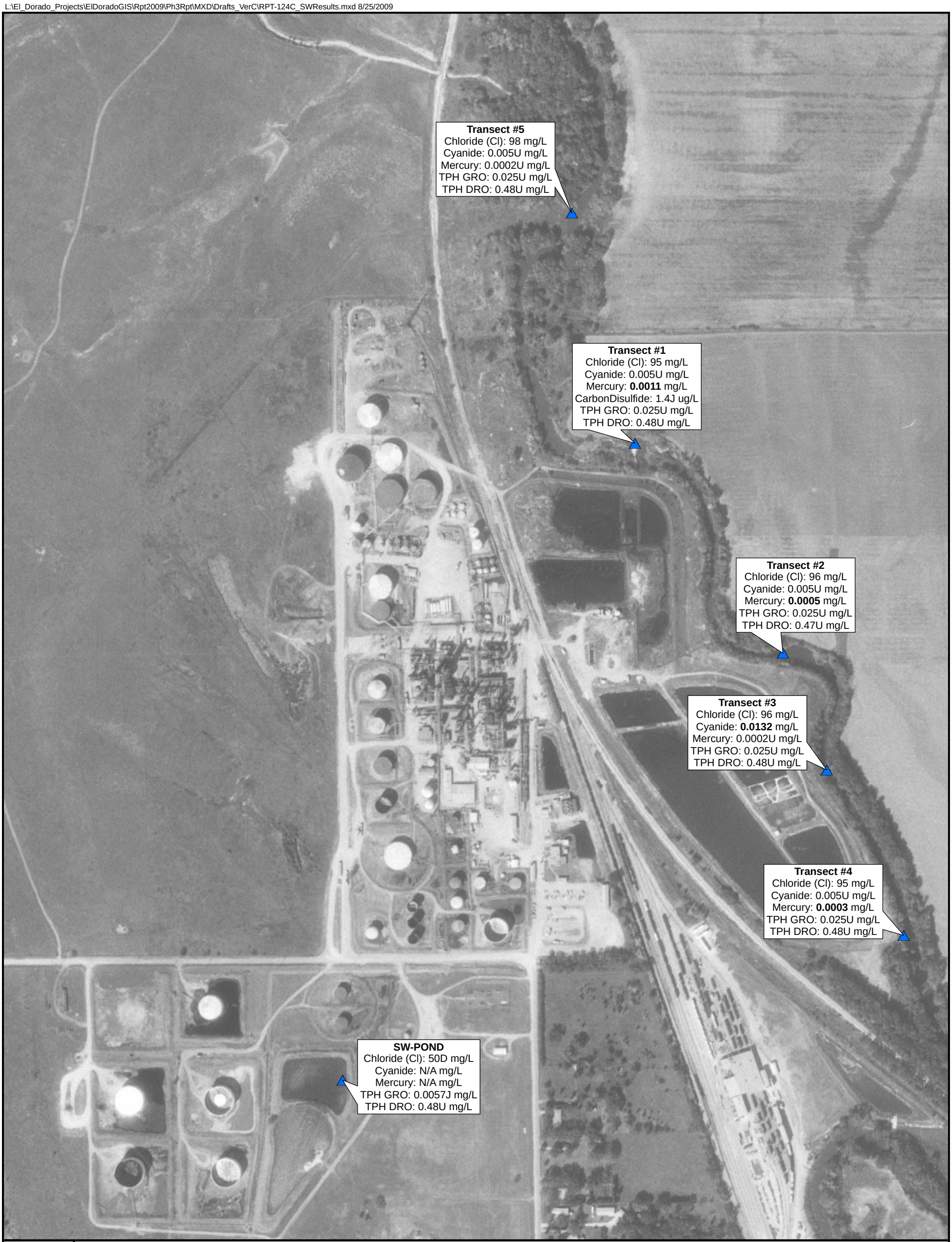
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
RIVER AND CREEK SEDIMENT SAMPLE LOCATION DATA MAP SOUTHERN AREA

MWH

FIGURE
8

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-124C_SWResults.mxd 8/25/2009



TITLE
SURFACE WATER SAMPLE LOCATION DATA MAP NORTHERN AREA

FIGURE
9

LEGEND:

▲ SURFACE WATER SAMPLING LOCATION

NOTES:
SURFACE WATER SAMPLE LOCATIONS LABELED WITH NAME, ANALYTE, AND CONCENTRATION IN SURFACE WATER (ug/L OR mg/L).
EXCEEDANCES OF THE CORRESPONDING KANSAS SURFACE WATER QUALITY STANDARD (SWQS) FOR CHLORIDE AS Cl (250 mg/L), CYANIDE (0.0052 mg/L), AND MERCURY (0.000146 mg/L) WERE OBSERVED IN RIVER AND CREEK SAMPLES. THERE ARE NO APPLICABLE KANSAS SWQS LEVELS AVAILABLE FOR TPH GRO, TPH DRO, AND SEVERAL VOCs AND SVOCs. THEREFORE, RESULTS FOR CHLORIDE, CYANIDE, MERCURY, TPH GRO, AND TPH DRO ARE SHOWN FOR ALL SURFACE WATER SAMPLES, AND DETECTIONS OF ADDITIONAL VOCs AND SVOCs ARE SHOWN AS APPLICABLE. KANSAS SWQS FOR BENZENE = 5 ug/L.
RESULTS EXCEEDING SCREENING LEVEL ARE SHOWN IN **BOLDFACE** TYPE.
TRANSECT #1 THROUGH #5 SAMPLES COLLECTED FEBRUARY 5, 2009. SW-POND AND SW-CREEK SAMPLES COLLECTED FEBRUARY 25, 2009.
1U = NOT DETECTED AT REPORTING LIMIT SHOWN. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
D = COMPOUND DETECTED AT A SECONDARY DILUTION FACTOR. N/A = NOT ANALYZED.

N
W E
S

SCALE
0 400 800
SCALE IN FEET

DRAWING REFERENCE(S):
AERIAL PHOTOGRAPH PRODUCED BY TERRASERVER-USA FROM OCTOBER 2, 1991 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	07/09
CHECKED BY	R. Hultgren	07/09
APPROVED BY	W. Pickens	####
PROJECT MANAGER	D. Mick	####
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-124C_SWResults.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.
TITLE: SURFACE WATER SAMPLE LOCATION DATA MAP NORTHERN AREA

MWH

FIGURE: 9

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-124C_SWResults.mxd 8/25/2009

TITLE
SURFACE WATER SAMPLE LOCATION DATA MAP SOUTHERN AREA

FIGURE
10

LEGEND:

▲ SURFACE WATER SAMPLING LOCATION

NOTES:
SURFACE WATER SAMPLE LOCATIONS LABELED WITH NAME, ANALYTE, AND CONCENTRATION IN SURFACE WATER (ug/L OR mg/L).
EXCEEDANCES OF THE CORRESPONDING KANSAS SURFACE WATER QUALITY STANDARD (SWQS) FOR CHLORIDE AS Cl (250 mg/L), CYANIDE (0.0052 mg/L), AND MERCURY (0.000146 mg/L) WERE OBSERVED IN RIVER AND CREEK SAMPLES. THERE ARE NO APPLICABLE KANSAS SWQS LEVELS AVAILABLE FOR TPH GRO, TPH DRO, AND SEVERAL VOCs AND SVOCs. THEREFORE, RESULTS FOR CHLORIDE, CYANIDE, MERCURY, TPH GRO, AND TPH DRO ARE SHOWN FOR ALL SURFACE WATER SAMPLES, AND DETECTIONS OF ADDITIONAL VOCs AND SVOCs ARE SHOWN AS APPLICABLE. KANSAS SWQS FOR BENZENE = 5 ug/L.
RESULTS EXCEEDING SCREENING LEVEL ARE SHOWN IN **BOLDFACE** TYPE.
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1U = NOT DETECTED AT REPORTING LIMIT SHOWN. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
D = COMPOUND DETECTED AT A SECONDARY DILUTION FACTOR. N/A = NOT ANALYZED.

N W E S

SCALE
0 400 800
SCALE IN FEET

DRAWING REFERENCE(S):
AERIAL PHOTOGRAPH PRODUCED BY TERRASERVER-USA FROM OCTOBER 2, 1991 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	07/09
CHECKED BY	R. Hultgren	07/09
APPROVED BY	W. Pickens	####
PROJECT MANAGER	D. Mick	####
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-124C_SWResults.mxd	

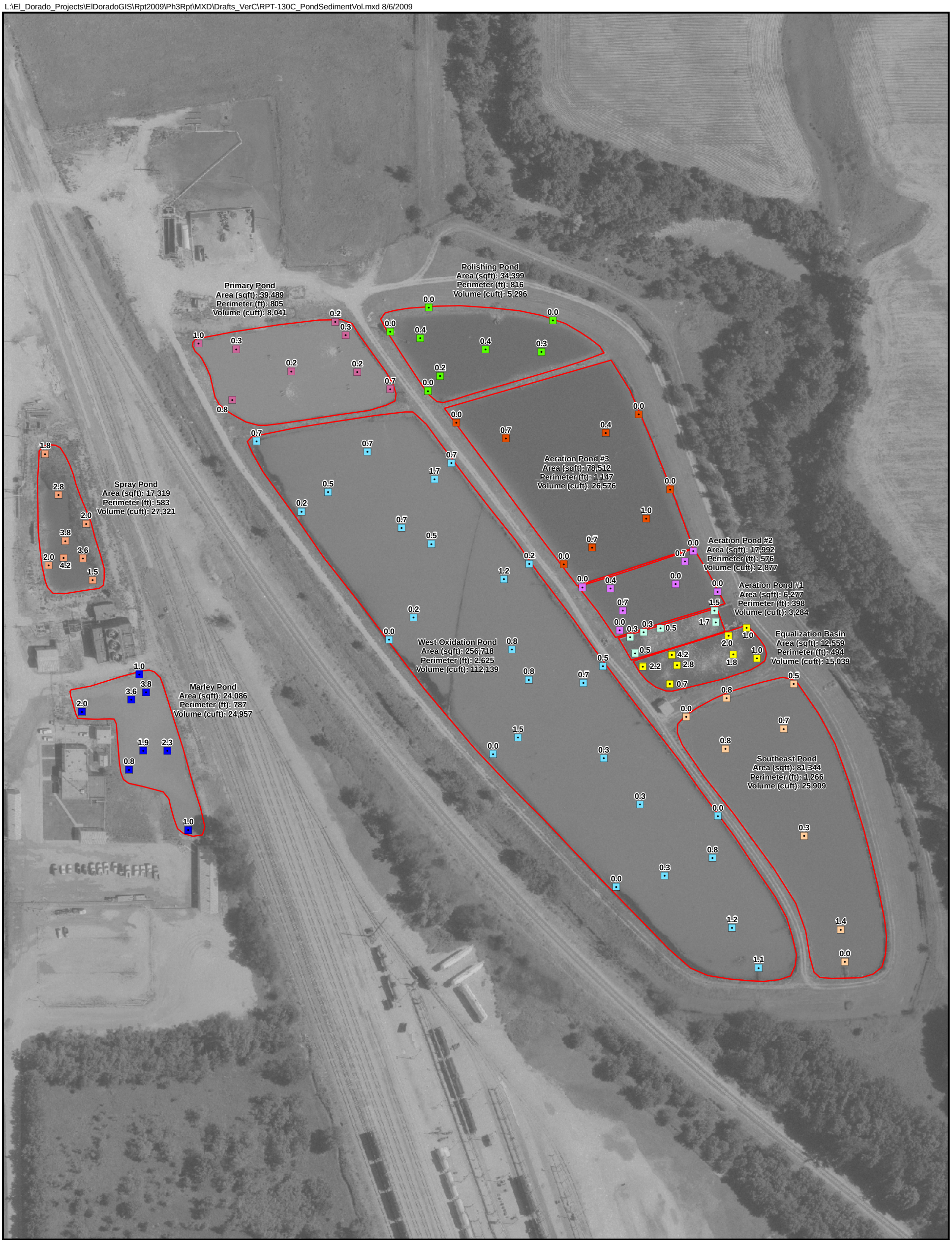
elpaso

PROJECT LOCATION: EL DORADO, KANSAS
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.
TITLE: SURFACE WATER SAMPLE LOCATION DATA MAP SOUTHERN AREA

MWH

FIGURE: 10

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-130C_PondSedimentVol.mxd 8/6/2009



TITLE
POND DIMENSIONS AND SEDIMENT THICKNESS MEASUREMENTS

FIGURE
11

LEGEND:

POND SEDIMENT SAMPLE

- AERATION POND #1
- AERATION POND #2
- AERATION POND #3
- EQUALIZATION BASIN
- MARLEY POND
- POLISHING POND
- PRIMARY POND
- SOUTHEAST POND
- SPRAY POND
- WEST OXIDATION POND

LINE FEATURES

- POND BOUNDARY

N
W E
S

SCALE

0 150 300

SCALE IN FEET

NOTES:
POND SEDIMENT SAMPLE LOCATIONS LABELED WITH SEDIMENT THICKNESS IN FEET. ft = FEET, sqft = SQUARE FEET, cuft = CUBIC FEET.

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-130C_PondSedimentVol.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

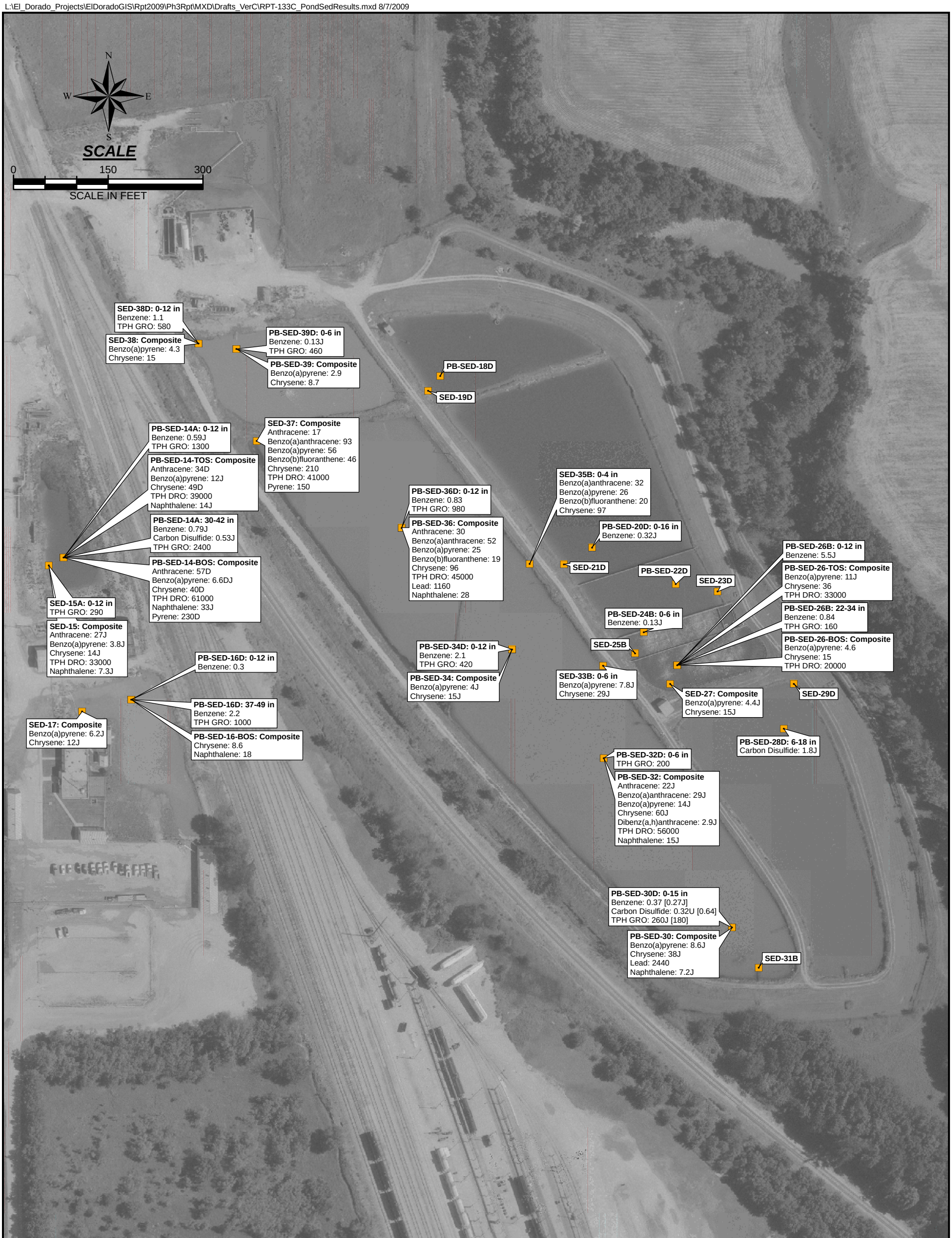
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
POND DIMENSIONS AND SEDIMENT THICKNESS MEASUREMENTS

MWH

FIGURE
11

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-133C_PondSedResults.mxd 8/7/2009



TITLE

POND SEDIMENT SAMPLE DATA MAP

FIGURE

12

LEGEND:

POND SEDIMENT SAMPLE LOCATION

NOTES:
SAMPLE LOCATIONS LABELED WITH NAME, SAMPLING DEPTH, ANALYTE, AND CONCENTRATION IN SOIL (mg/kg). DATA ARE ONLY SHOWN WHERE RESULTS EXCEEDED THE CORRESPONDING SCREENING LEVEL FOR AT LEAST ONE OF THE ANALYTES LISTED ON THE RIGHT.
DUPLICATE RESULTS SHOWN IN BRACKETS [ ] FOR APPLICABLE ANALYTE(S) AND RESULT(S).
J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
in = SAMPLE DEPTH INTERVAL IN INCHES BELOW TOP OF POND SEDIMENT
Composite = A COMPOSITE SAMPLE WAS PREPARED FROM MULTIPLE ALIQUOT LOCATIONS. DATA SHOWN AT POND SEDIMENT SAMPLE LOCATION FOR VOLATILE ORGANIC COMPOUNDS.

KANSAS TIER 2 RISK-BASED STANDARDS FOR NON-RESIDENTIAL (INDUSTRIAL) PATHWAYS:

ANALYTE	LEVEL	UNITS	PATHWAY(S)
ANTHRACENE	13	mg/kg	SOIL/SOIL TO GROUNDWATER
BENZENE	0.08	mg/kg	SOIL TO GROUNDWATER
BENZO(A)ANTHRACENE	26	mg/kg	SOIL
BENZO(A)PYRENE	2.6	mg/kg	SOIL
BENZO(B)FLUORANTHENE	19	mg/kg	SOIL/SOIL TO GROUNDWATER
CHRYSENE	6.4	mg/kg	SOIL/SOIL TO GROUNDWATER
DIBENZ(A,H)ANTHRACENE	2.6	mg/kg	SOIL
TPH DRO	15000	mg/kg	SOIL TO GROUNDWATER
TPH GRO	150	mg/kg	SOIL TO GROUNDWATER
LEAD	1000	mg/kg	SOIL
NAPHTHALENE	3.52	mg/kg	SOIL TO GROUNDWATER
PYRENE	140	mg/kg	SOIL/SOIL TO GROUNDWATER

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	07/09
CHECKED BY	R. Hultgren	07/09
APPROVED BY	W. Pickens	07/09
PROJECT MANAGER	D. Mick	07/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-133C_PondSedResults.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

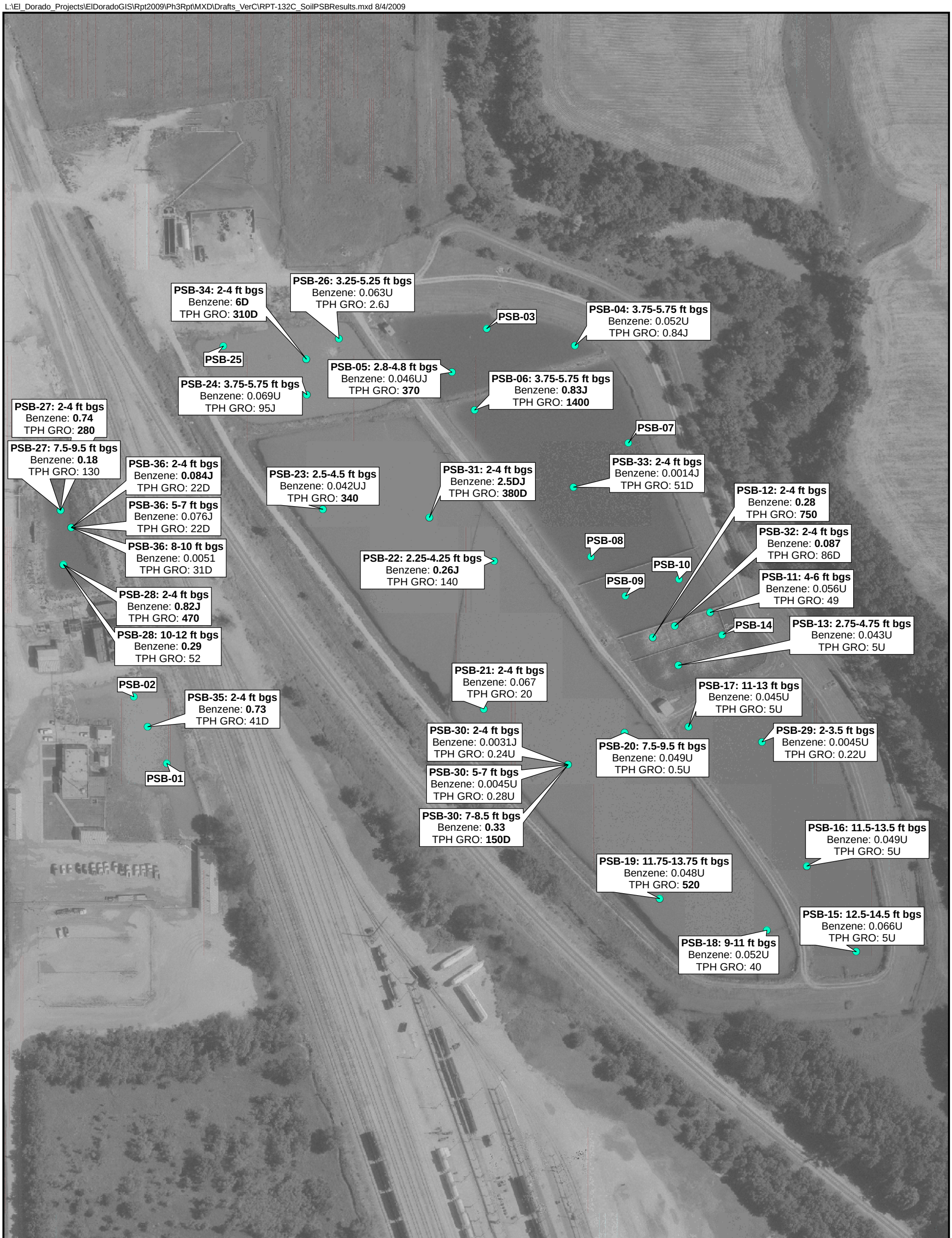
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

MWH

TITLE: POND SEDIMENT SAMPLE DATA MAP

FIGURE: 12

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-132C_SoilPSBResults.mxd 8/4/2009



TITLE

POND SOIL SAMPLE DATA MAP

FIGURE

13

LEGEND:

- POND SOIL BORING LOCATION

NOTES:
SOIL BORINGS LABELED WITH NAME, SAMPLING DEPTH, ANALYTE, AND CONCENTRATION IN SOIL (mg/kg).
DATA ARE SHOWN WHERE RESULTS EXCEEDED THE LESSER OF THE KANSAS TIER 2 RISK-BASED STANDARDS FOR NON-RESIDENTIAL SOIL PATHWAY OR SOIL TO GROUNDWATER PATHWAY. FOR EACH CONSTITUENT, IF RESULTS EXCEED A SCREENING LEVEL IN ONE SAMPLE, THEN DATA FOR THAT CONSTITUENT ARE SHOWN FOR ALL SAMPLES.
SCREENING LEVELS (SOIL TO GROUNDWATER PATHWAY): BENZENE = 0.08 mg/kg; TPH GRO = 150 mg/kg
RESULTS EXCEEDING SCREENING LEVEL ARE SHOWN IN **BOLDFACE** TYPE.
1U = NOT DETECTED AT REPORTING LIMIT SHOWN. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
D = COMPOUND DETECTED AT SECONDARY DILUTION FACTOR.
ft bgs = FEET BELOW GROUND SURFACE

N
W E
S

SCALE

0 150 300

SCALE IN FEET

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	07/09
CHECKED BY	R. Hultgren	07/09
APPROVED BY	W. Pickens	07/09
PROJECT MANAGER	D. Mick	07/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-132C_SoilPSBResults.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

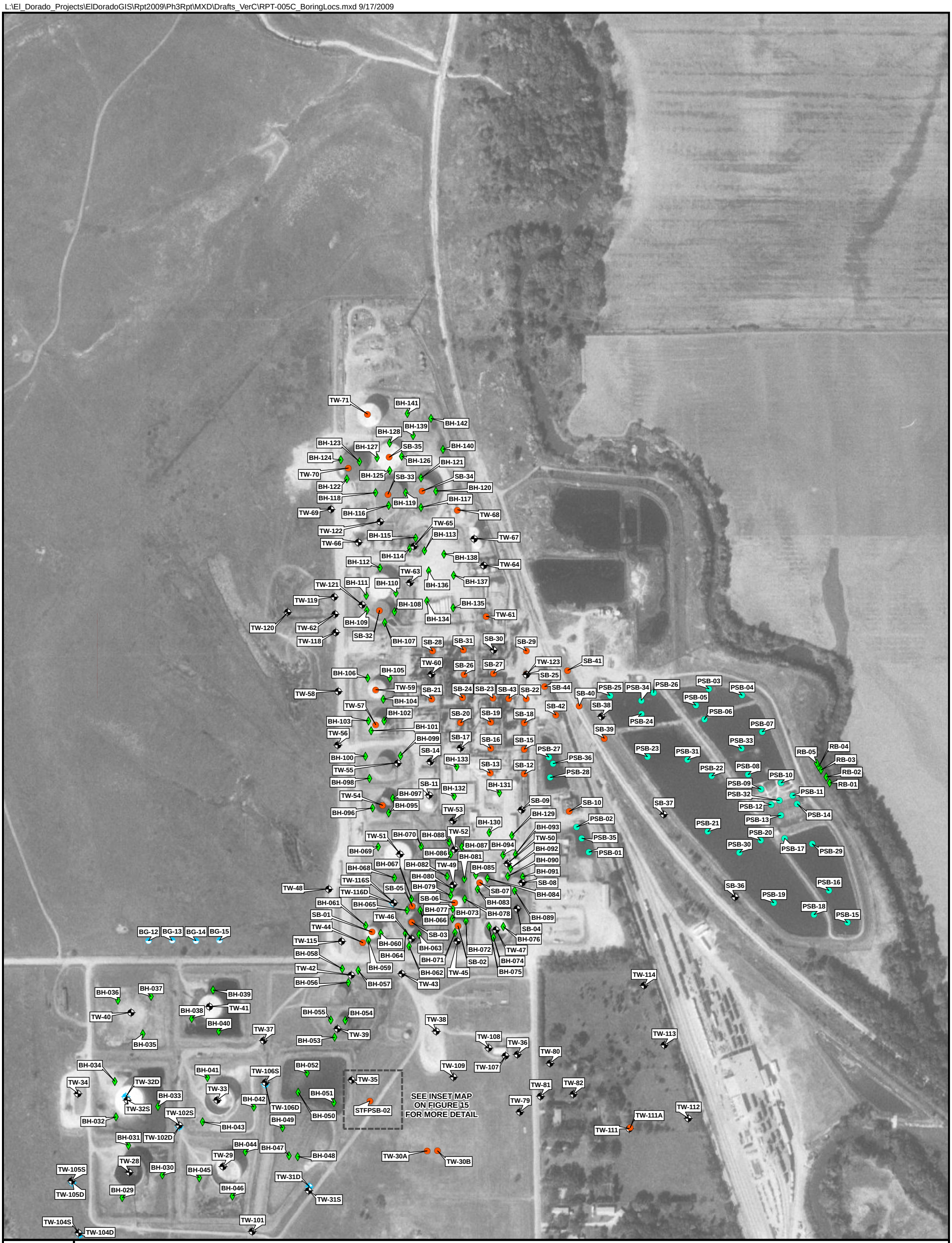
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

MWH

TITLE: POND SOIL SAMPLE DATA MAP

FIGURE: 13

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-005C_BoringLocs.mxd 9/17/2009



TITLE

BORING LOCATION MAP
NORTHERN AREA

LEGEND:

- SHALLOW SOIL SAMPLE
- BACKGROUND SOIL SAMPLE
- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)

N
W E
S

SCALE

0 400 800

SCALE IN FEET

NOTES:
ONLY SOIL BORINGS AND MONITORING WELLS COMPLETED DURING THE THIRD PHASE INVESTIGATION ARE SHOWN.

FIGURE

14

DRAWING REFERENCE(S):

1. AERIAL PHOTOGRAPH PRODUCED BY TERRASERVER-USA FROM OCTOBER 2, 1991 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	08/09
DRAWN BY	R. Hultgren	09/09
CHECKED BY	R. Hultgren	09/09
APPROVED BY	W. Pickens	09/09
PROJECT MANAGER	D. Mick	09/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-005C_BoringLocs.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
BORING LOCATION MAP
NORTHERN AREA

MWH

FIGURE
14

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-005C_BoringLocs.mxd 9/17/2009

TITLE

BORING LOCATION MAP
SOUTHERN AREA

FIGURE

15

LEGEND:

- SHALLOW SOIL SAMPLE
- BACKGROUND SOIL SAMPLE
- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)

N
W E
S

SCALE

0 400 800

SCALE IN FEET

NOTES:
ONLY SOIL BORINGS AND MONITORING WELLS COMPLETED DURING THE THIRD PHASE INVESTIGATION ARE SHOWN.

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY TERRASERVER-USA FROM OCTOBER 2, 1991 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	08/09
DRAWN BY	R. Hultgren	09/09
CHECKED BY	R. Hultgren	09/09
APPROVED BY	W. Pickens	09/09
PROJECT MANAGER	D. Mick	09/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-005C_BoringLocs.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

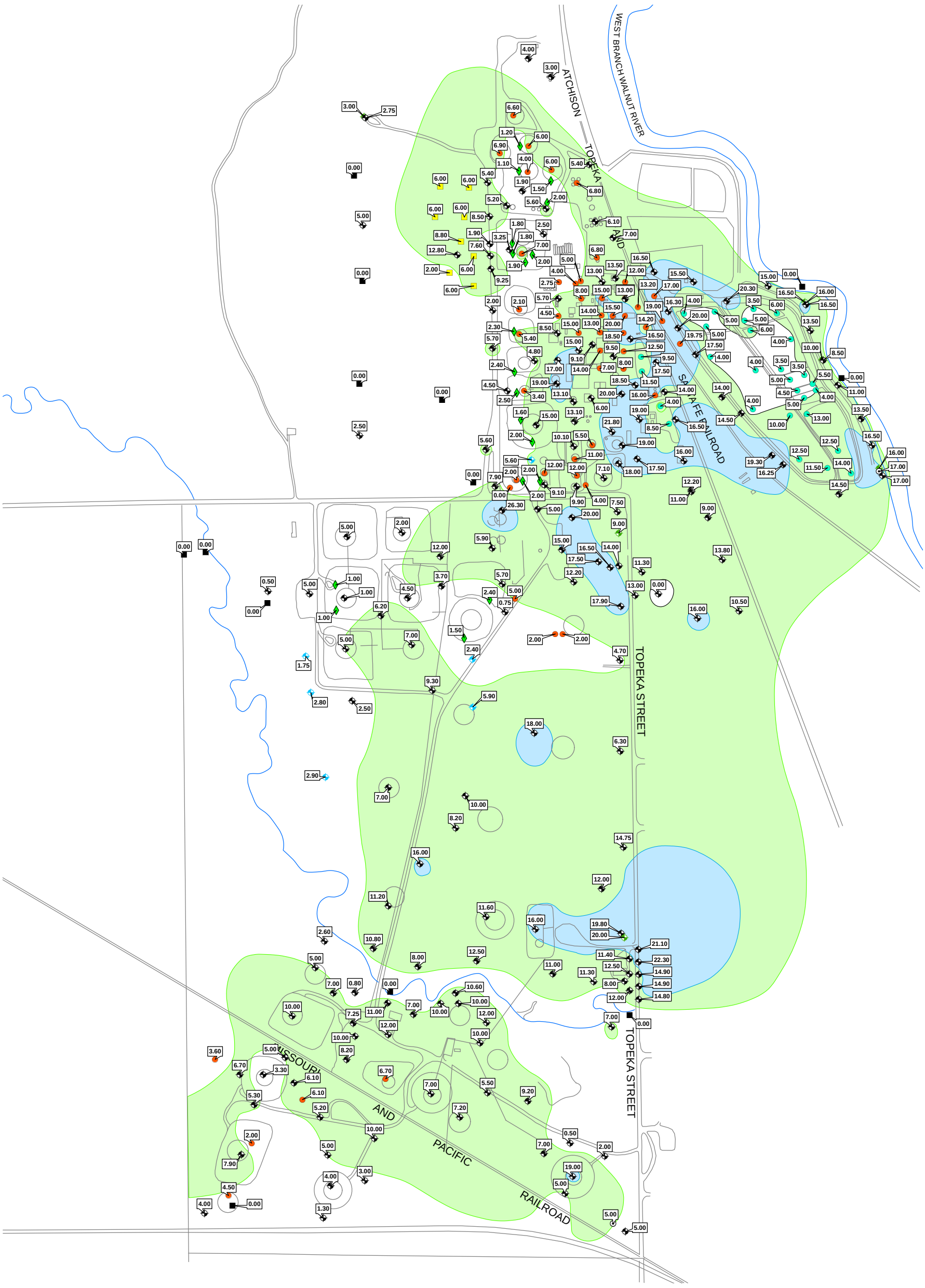
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE: BORING LOCATION MAP SOUTHERN AREA

MWH

FIGURE: 15

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-007C_DepthBedrock.mxd 8/9/2009



TITLE

DEPTH TO BEDROCK MAP

FIGURE

16

LEGEND:

- TOP OF BEDROCK AT GROUND SURFACE
- AHA BACKHOE SAMPLE
- SHALLOW SOIL SAMPLE
- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL

DEPTH TO BEDROCK CONTOUR

- < 5 FEET BGS
- 5 TO 15 FEET BGS
- > 15 FEET BGS

N
W E
S

SCALE

0 600 1,200

SCALE IN FEET

NOTES:
WELLS AND SOIL BORING SYMBOLS LABELED WITH DEPTH TO BEDROCK IN FEET BGS.
BGS = BELOW GROUND SURFACE

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	06/09
DRAWN BY	R. Hultgren	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-007C_DepthBedrock.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

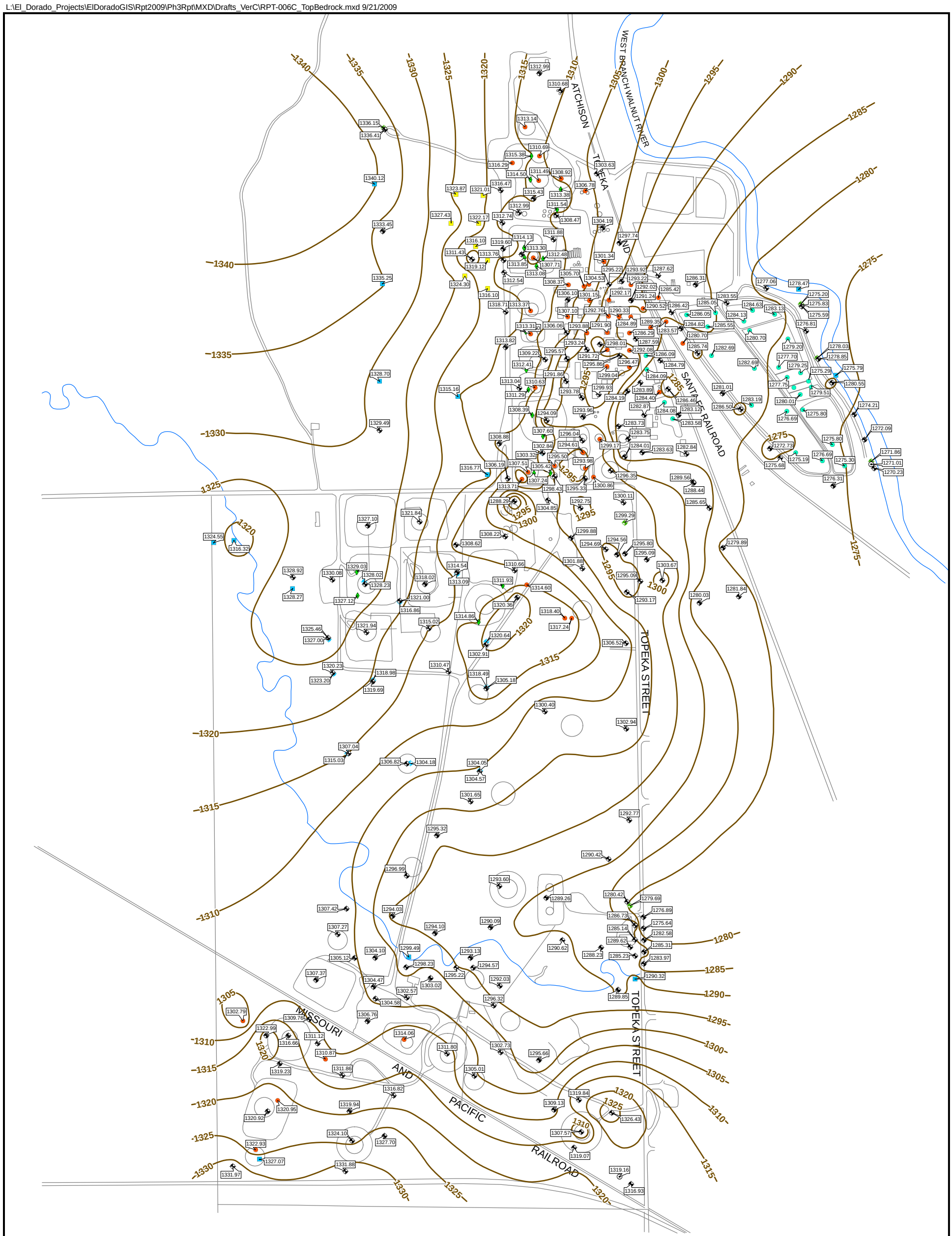
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE: DEPTH TO BEDROCK MAP

MWH

FIGURE: 16

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-006C_TopBedrock.mxd 9/21/2009



LEGEND:

- AHA BACKHOE SAMPLE
- SHALLOW SOIL SAMPLE
- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- EXTRACTION SUMP
- IN-TRENCH PIEZOMETER
- BEDROCK OUTCROP LOCATION

CONTOURS

TOP OF BEDROCK STRUCTURE-CONTOUR, FEET AMSL (5 FOOT CONTOUR INTERVAL)

NOTES:
WELLS AND SOIL BORING SYMBOLS LABELED WITH TOP OF BEDROCK ELEVATION IN FEET AMSL.
AMSL = ABOVE MEAN SEA LEVEL

N W E S

SCALE

0 600 1,200

SCALE IN FEET

TITLE
TOP OF BEDROCK STRUCTURE-CONTOUR MAP

FIGURE
17

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	04/09
DRAWN BY	R. Hultgren	09/09
CHECKED BY	R. Hultgren	09/09
APPROVED BY	W. Pickens	09/09
PROJECT MANAGER	D. Mick	09/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-006C_TopBedrock.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

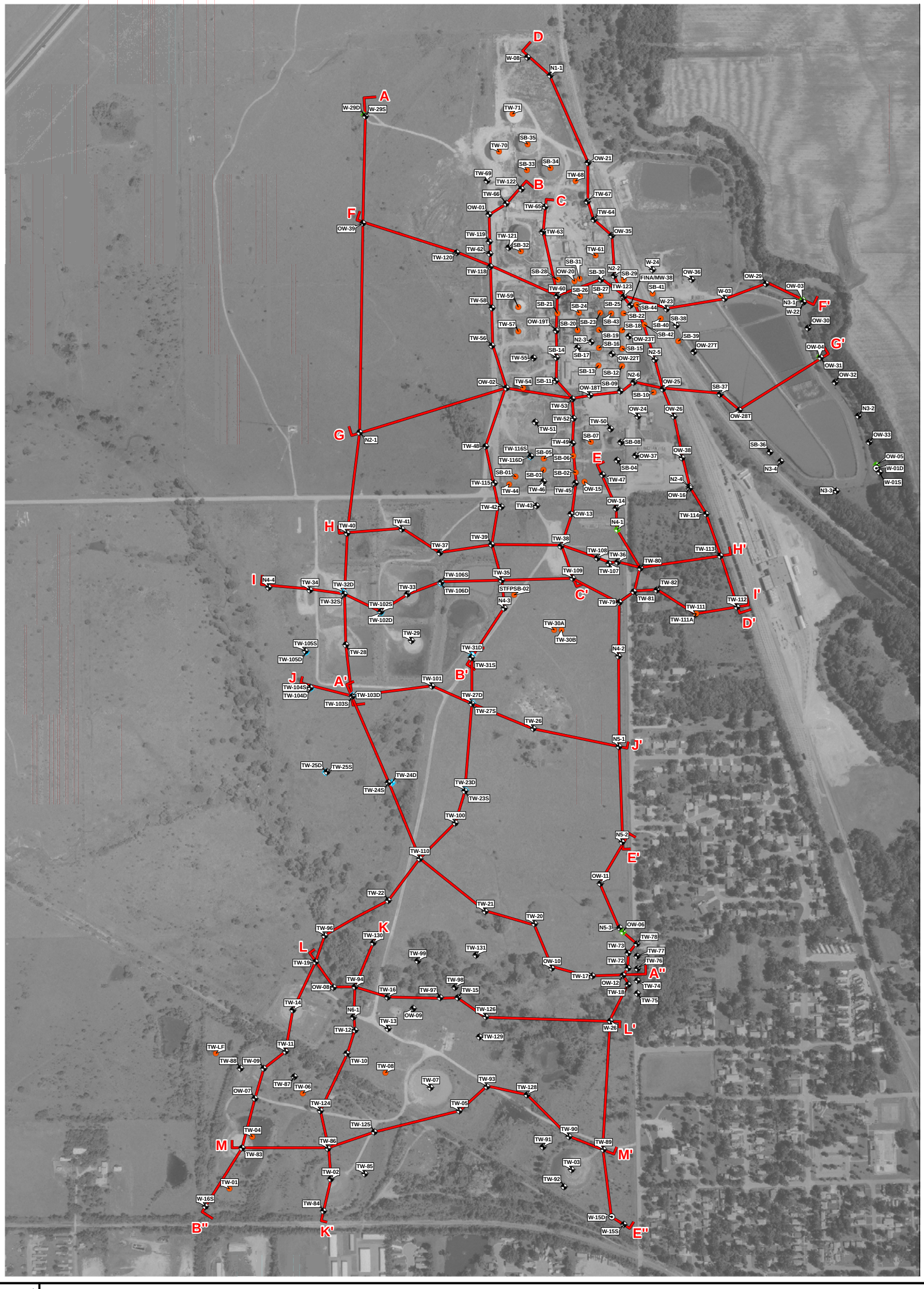
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE: TOP OF BEDROCK STRUCTURE-CONTOUR MAP

MWH

FIGURE: 17

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-022C_GeologicXsect.mxd 8/14/2009



TITLE

LINES OF GEOLOGIC CROSS-SECTION

LEGEND:

- SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- LINE OF GEOLOGIC CROSS SECTION (e.g., A - A')

N
W E
S

SCALE

0 600 1,200

SCALE IN FEET

NOTES:
WELL AND SOIL BORING SYMBOLS LABELED WITH WELL NAME.

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	04/09
DRAWN BY	R. Hultgren	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-022C_GeologicXsect.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

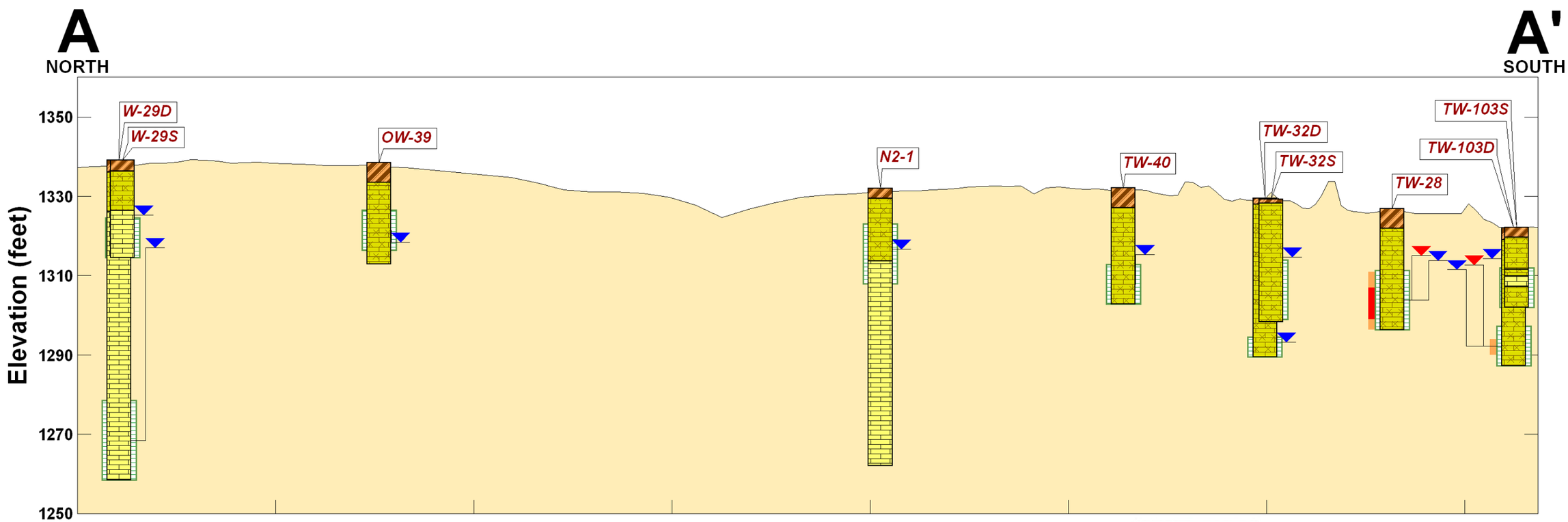
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

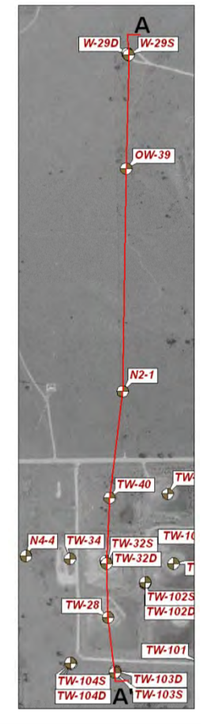
MWH

TITLE: LINES OF GEOLOGIC CROSS-SECTION

FIGURE: 18

FIGURE 18





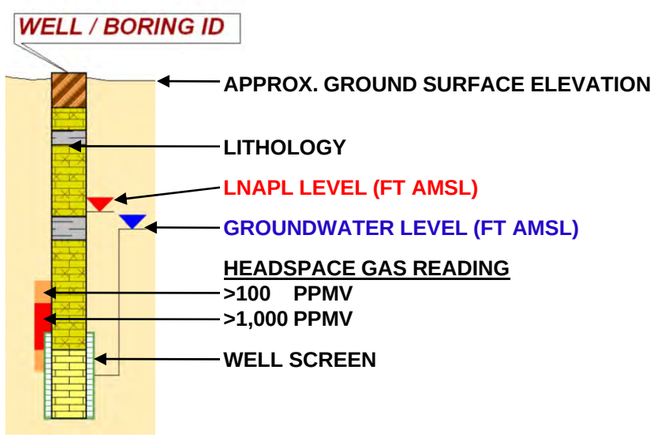
0 250 500 feet

VERTICAL EXAGGERATION 10X

NOTES:

- AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET
- TOPOGRAPHY PRODUCED FROM DTM DATA FROM THE AERIAL PHOTOGRAPHY FROM JUNE 15, 2005 USING PHOTOGRAMMETRIC METHODS ON ANALYTICAL STEREOPLOTTERS
- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

LEGEND:



LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE

TITLE

CROSS-SECTION A-A'

PROJECT

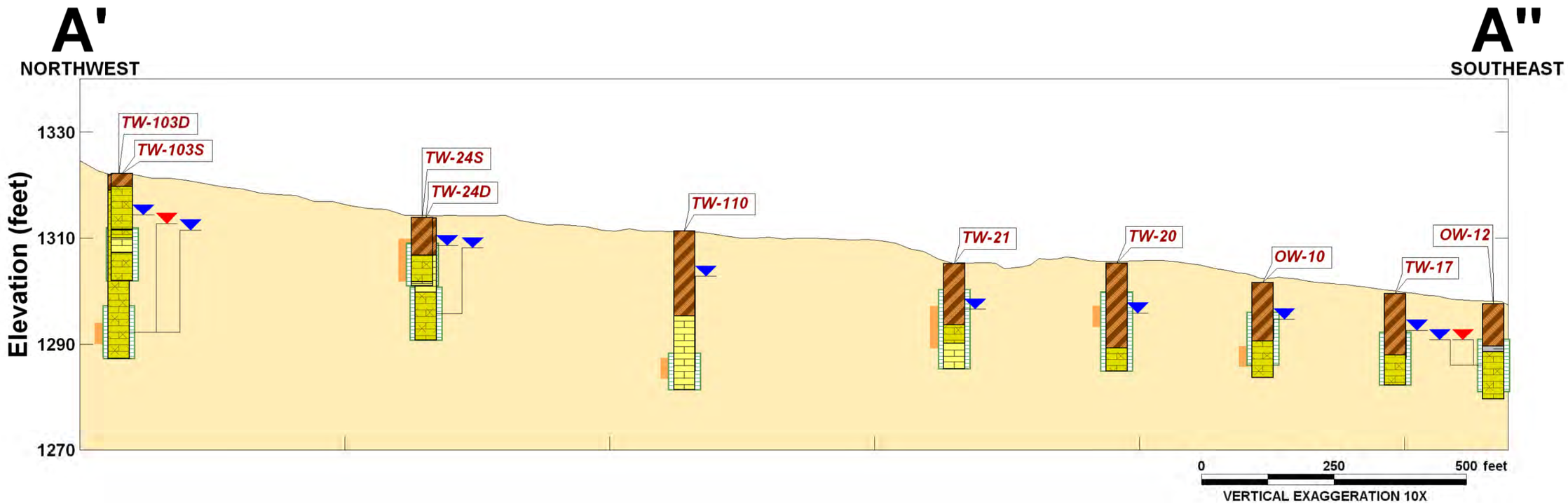
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso

MWH

FIGURE

19



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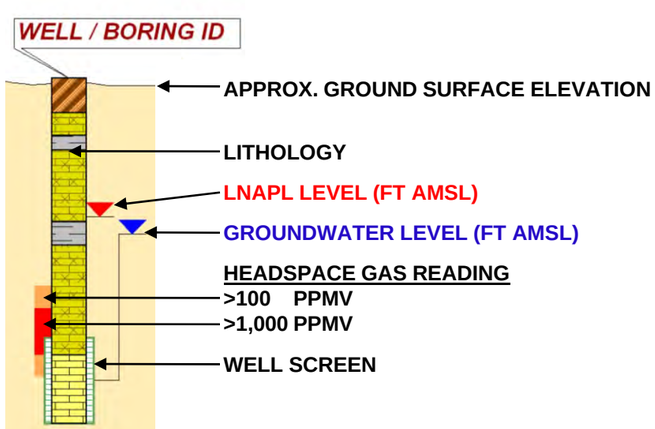
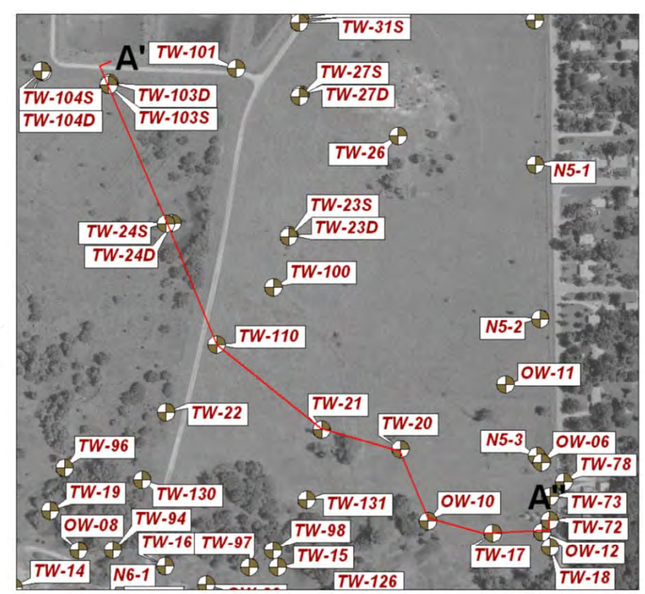


LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE



NOTES:

- AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET
- TOPOGRAPHY PRODUCED FROM DTM DATA FROM THE AERIAL PHOTOGRAPHY FROM JUNE 15, 2005 USING PHOTOGRAMMETRIC METHODS ON ANALYTICAL STEREOPLOTTERS
- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION A'-A''

PROJECT

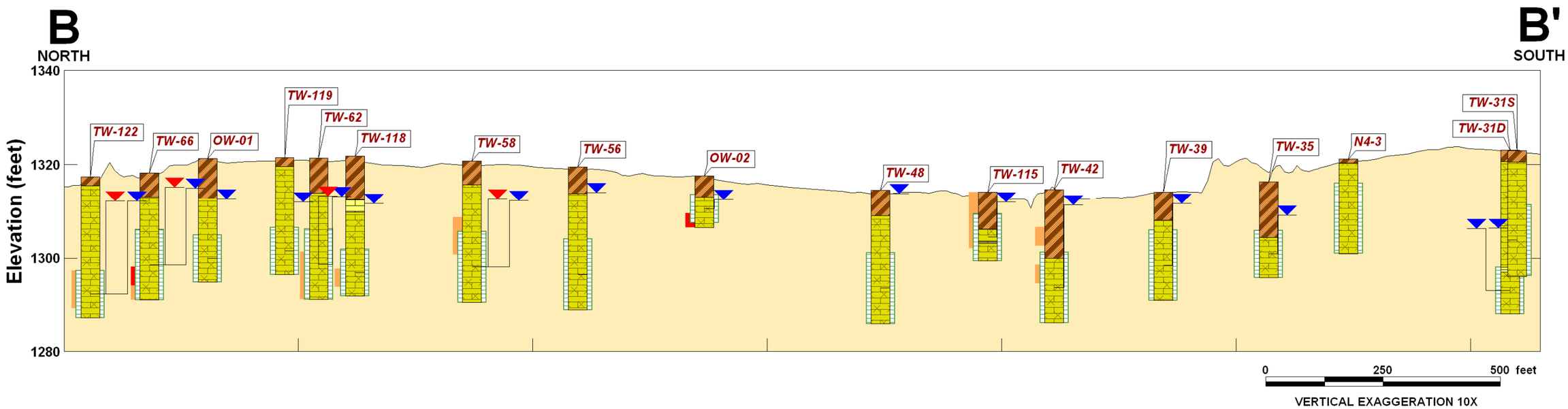
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

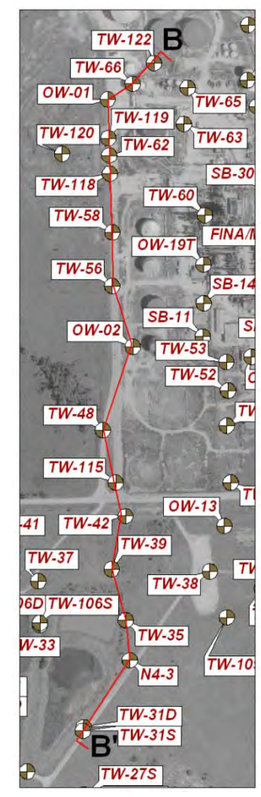
elpaso

MWH

FIGURE

20





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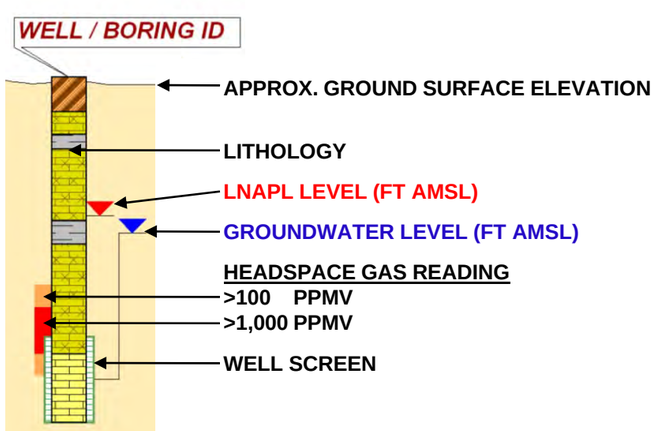


LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE

NOTES:

- AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET
- TOPOGRAPHY PRODUCED FROM DTM DATA FROM THE AERIAL PHOTOGRAPHY FROM JUNE 15, 2005 USING PHOTOGRAMMETRIC METHODS ON ANALYTICAL STEREOPLOTTERS
- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION B-B'

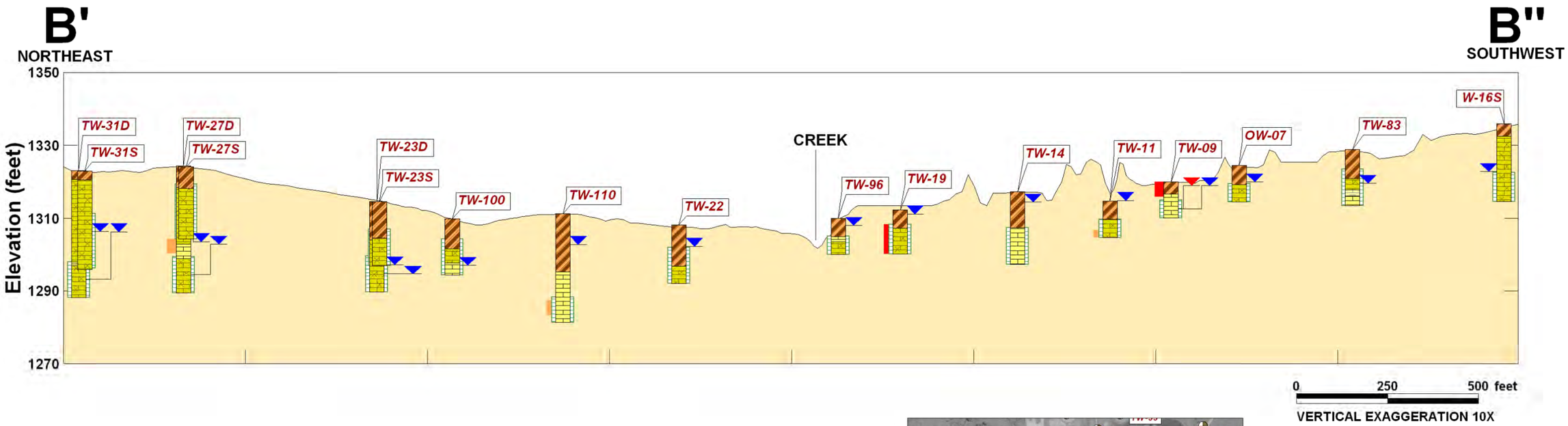
PROJECT

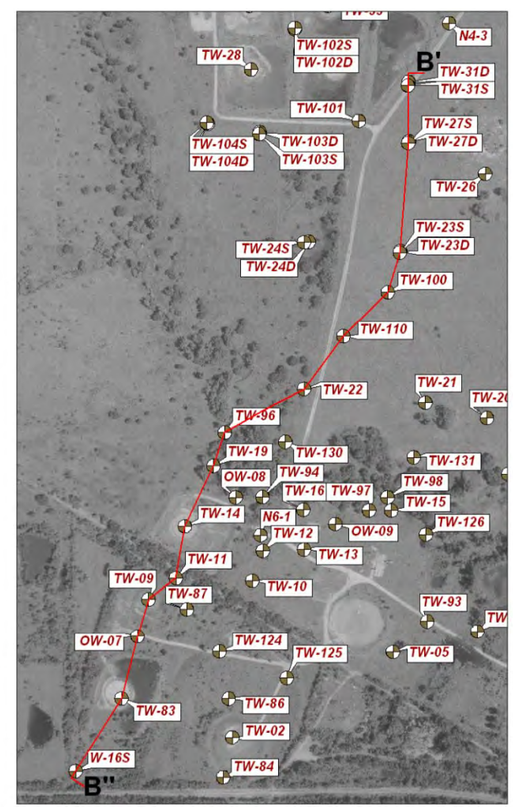
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso MWH

FIGURE

21





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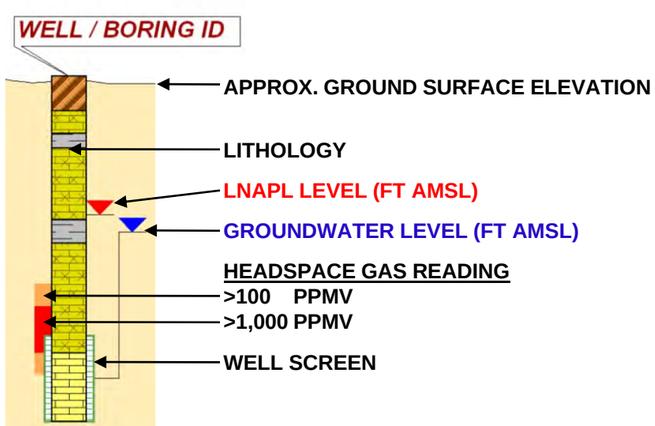


LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE

NOTES:

- AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET
- TOPOGRAPHY PRODUCED FROM DTM DATA FROM THE AERIAL PHOTOGRAPHY FROM JUNE 15, 2005 USING PHOTOGRAMMETRIC METHODS ON ANALYTICAL STEREOPLOTTERS
- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009, EXCEPT TW-09 WAS MEASURED FEBRUARY 14, 2008
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION B'-B''

PROJECT

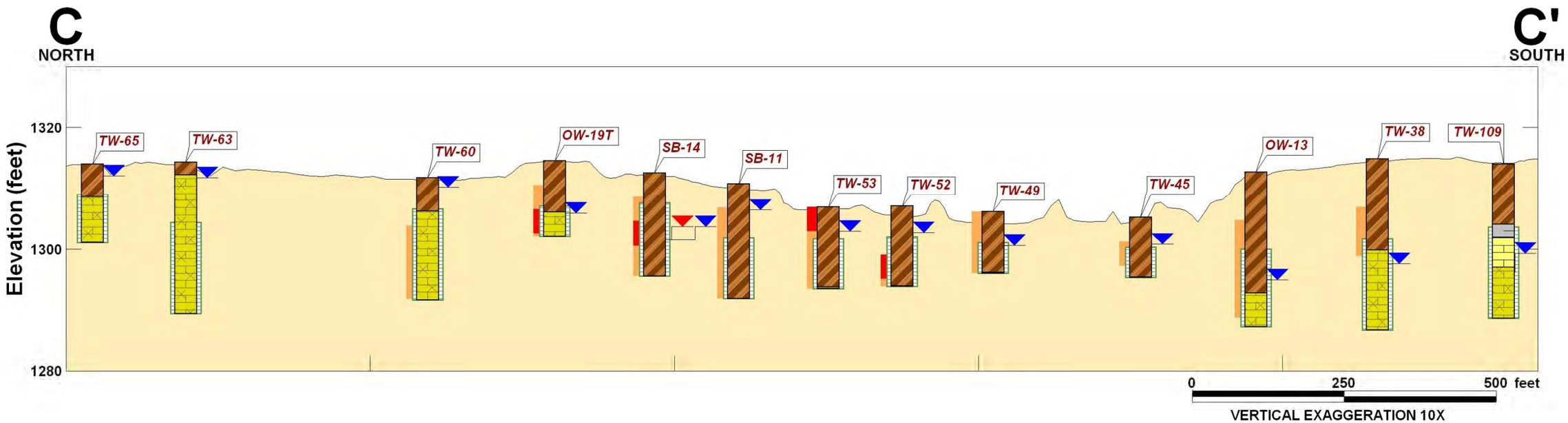
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

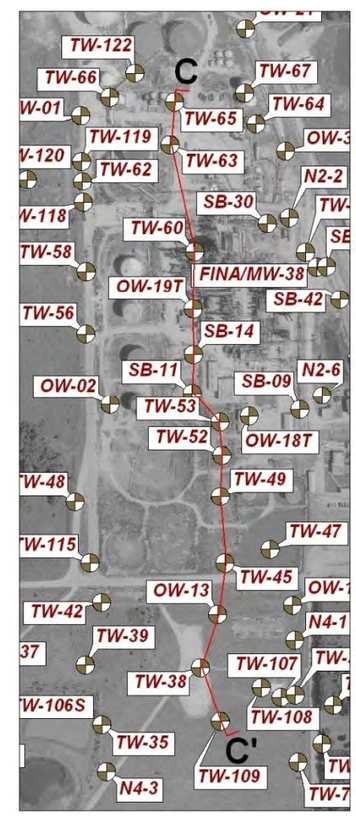
elpaso

MWH

FIGURE

22





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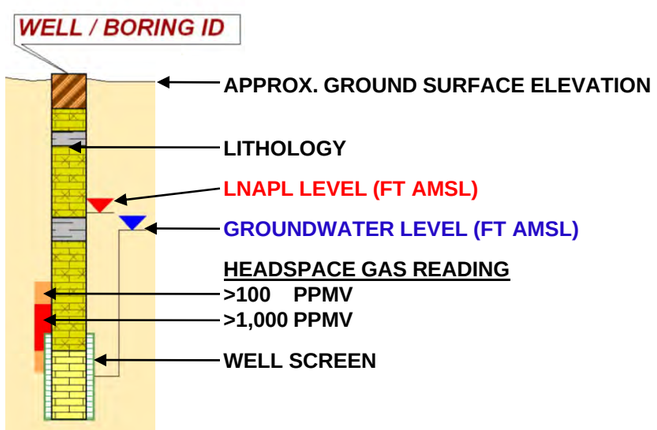

LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE

NOTES:

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- TOPOGRAPHY PRODUCED FROM DTM DATA FROM THE AERIAL PHOTOGRAPHY FROM JUNE 15, 2005 USING PHOTOGRAMMETRIC METHODS ON ANALYTICAL STEREOPLOTTERS
- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION C-C'

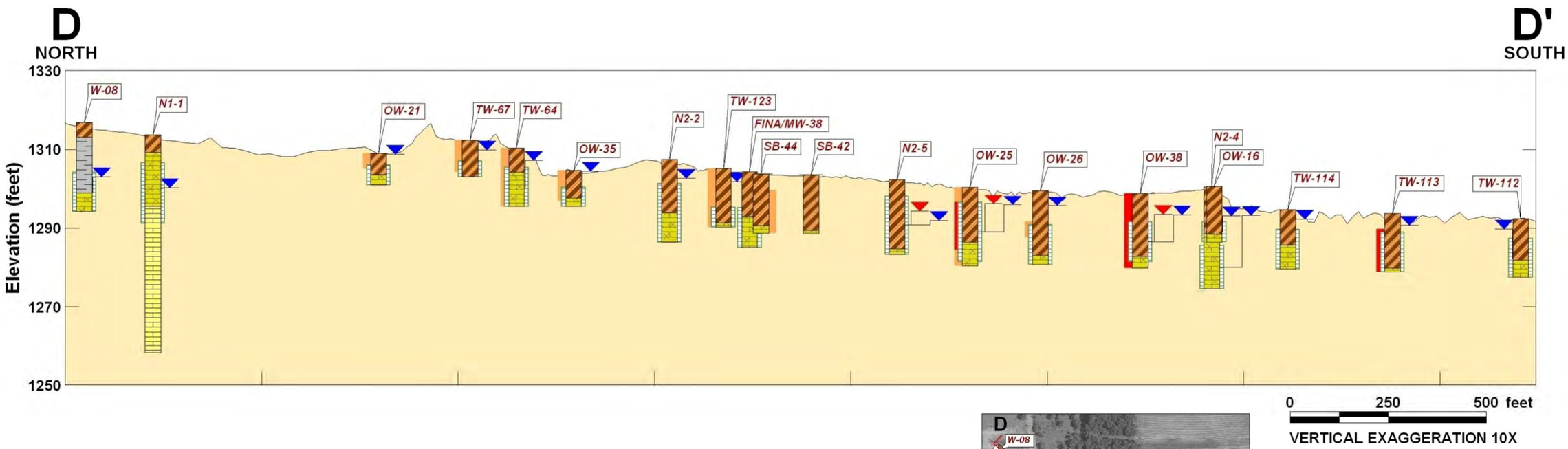
PROJECT

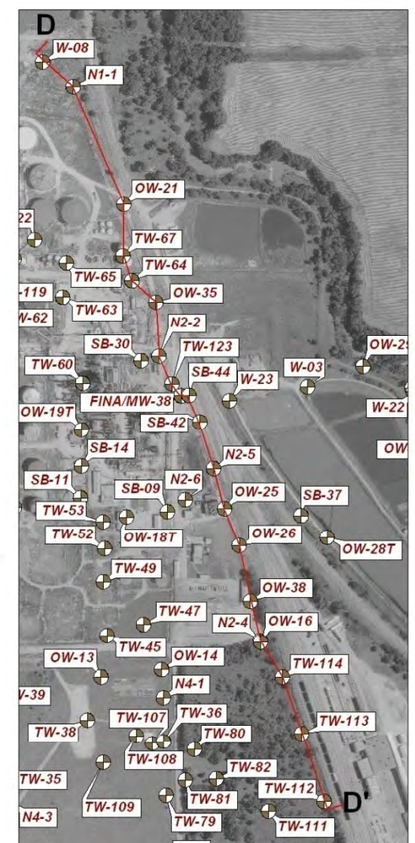
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso MWH

FIGURE

23





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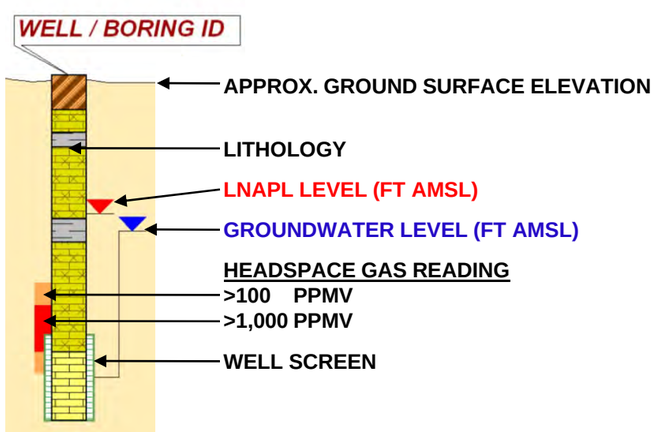

LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE

NOTES:

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- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION D-D'

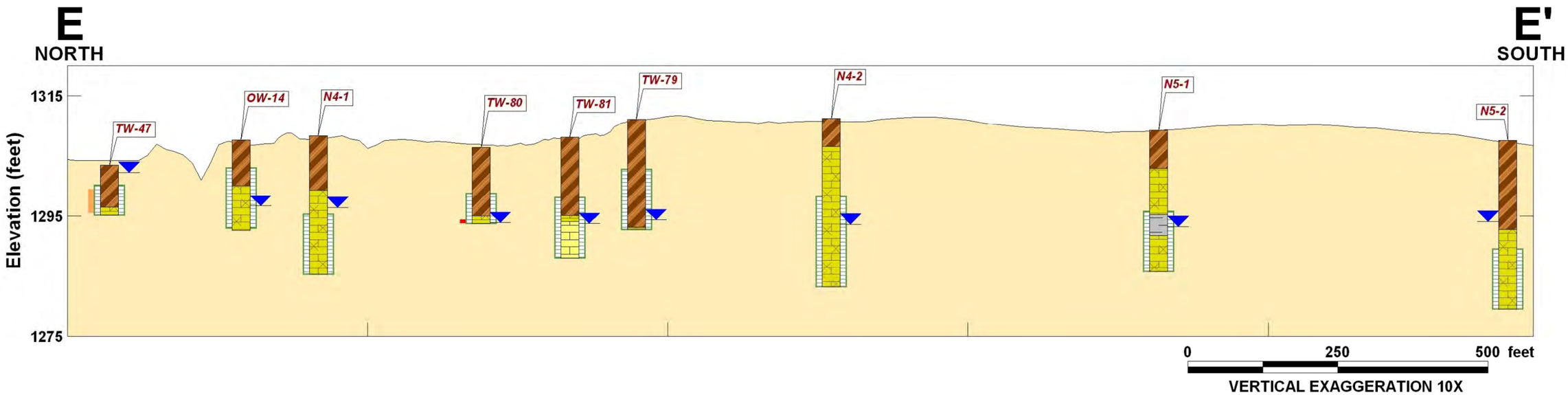
PROJECT

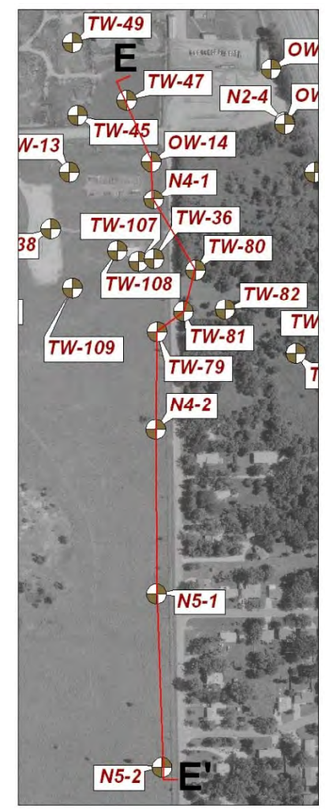
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso MWH

FIGURE

24





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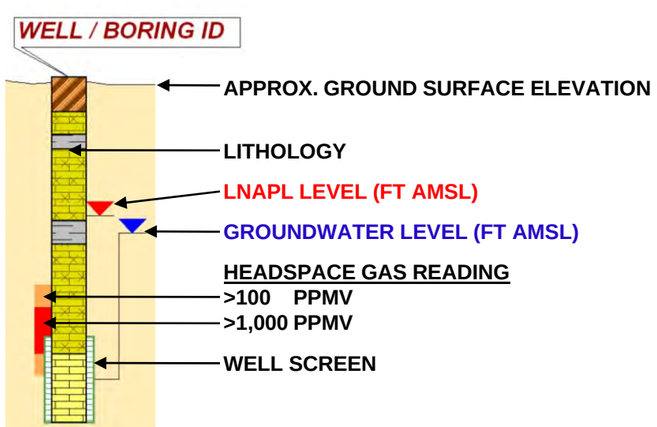

LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE

NOTES:

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- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION E-E'

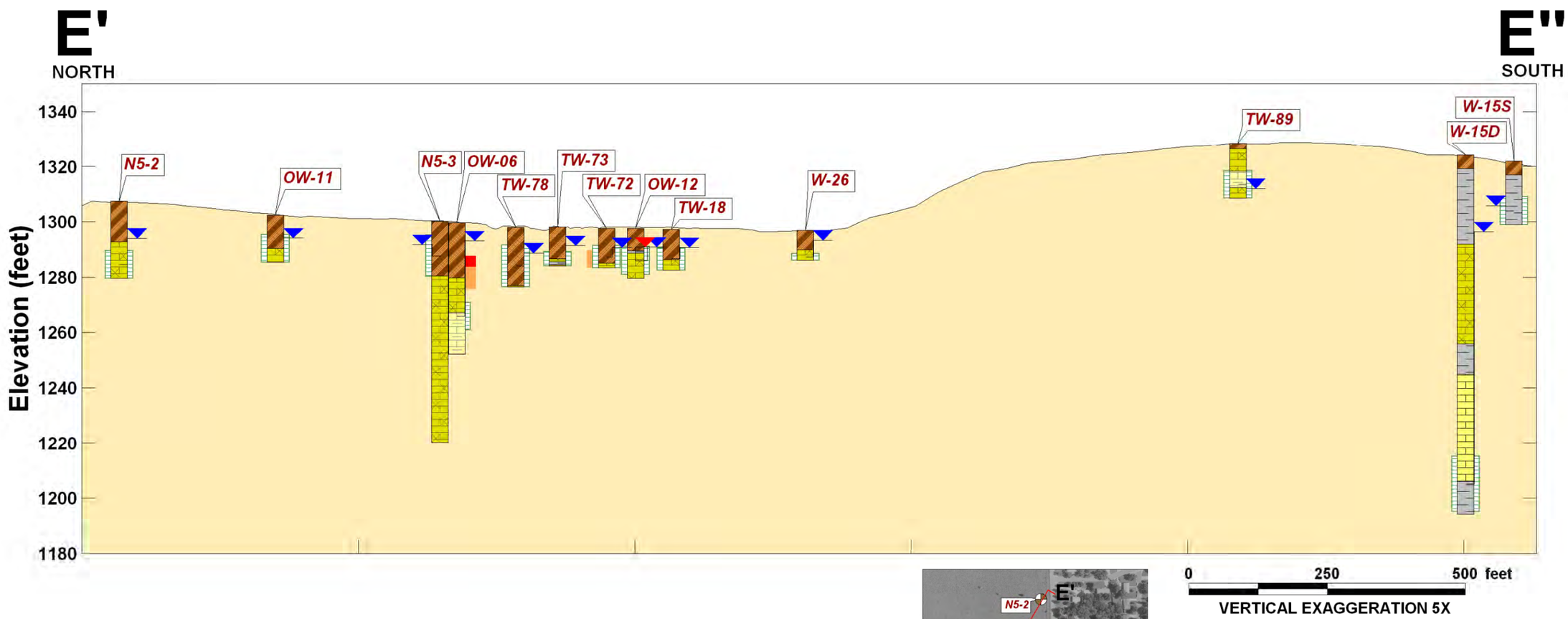
PROJECT

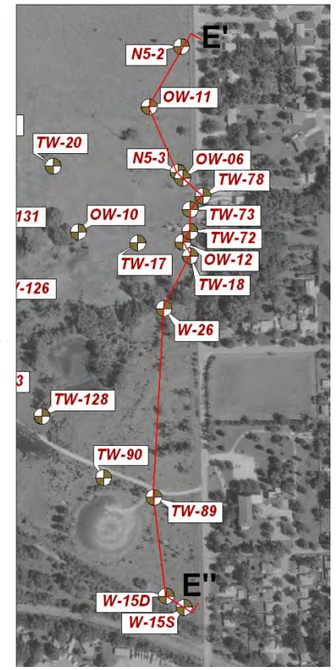
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso MWH

FIGURE

25





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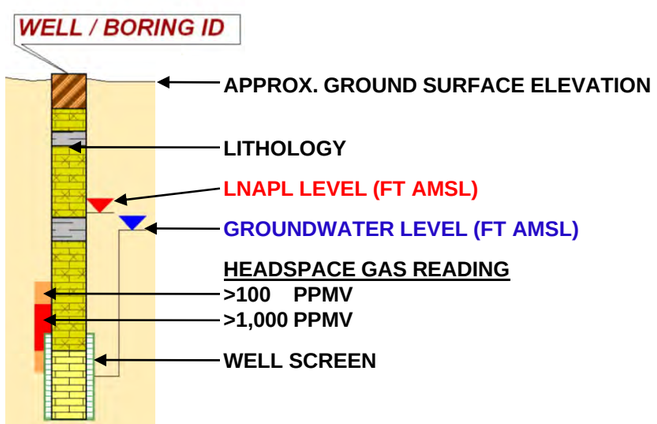

LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE

NOTES:

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- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION E'-E''

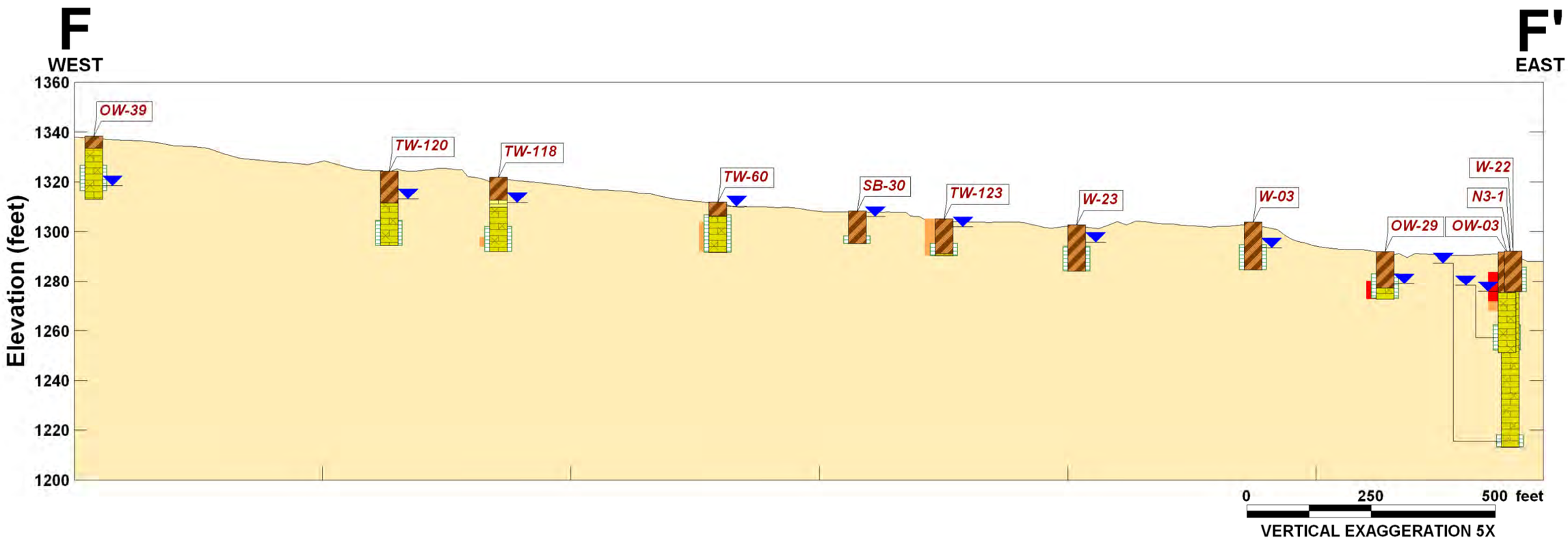
PROJECT

EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso MWH

FIGURE

26



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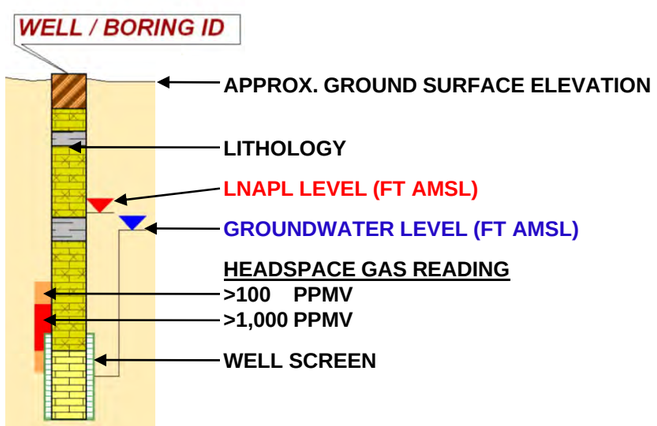
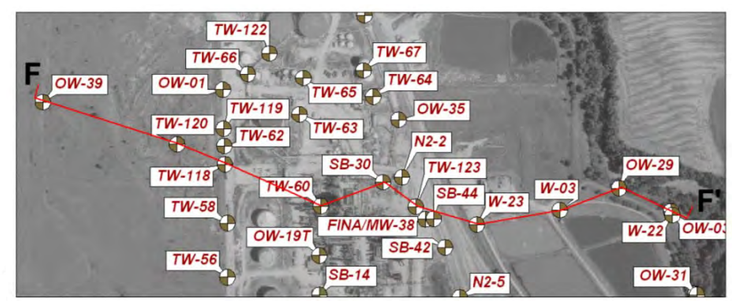


LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE



NOTES:

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- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION F-F'

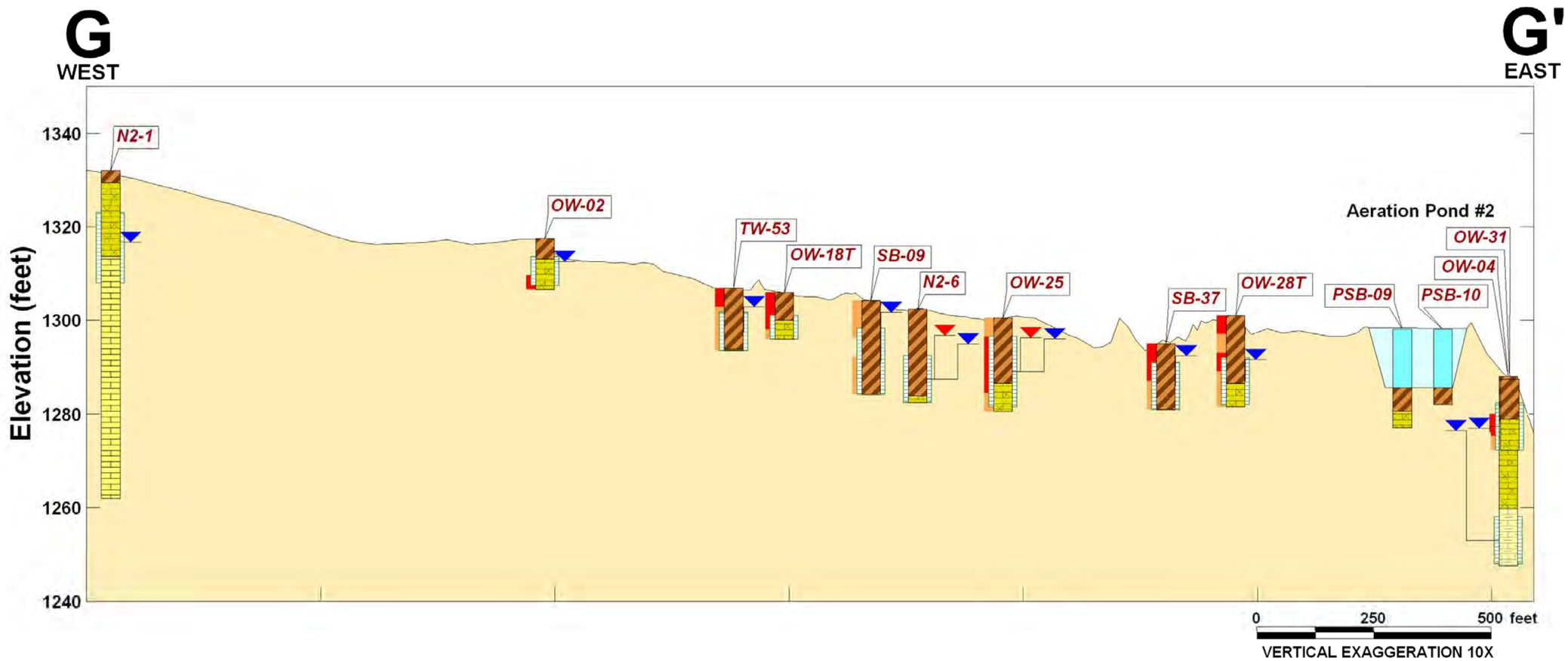
PROJECT

EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso MWH

FIGURE

27



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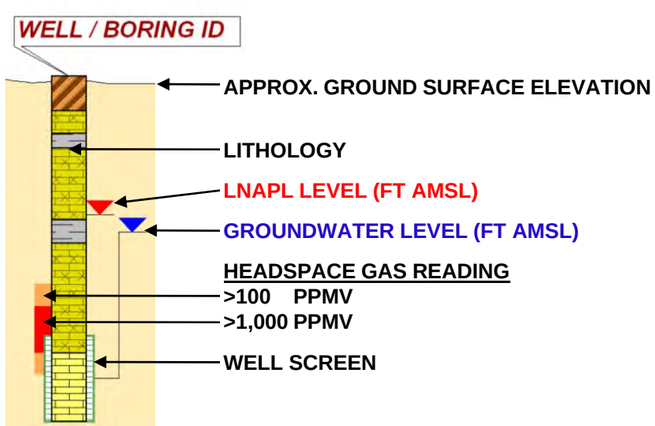
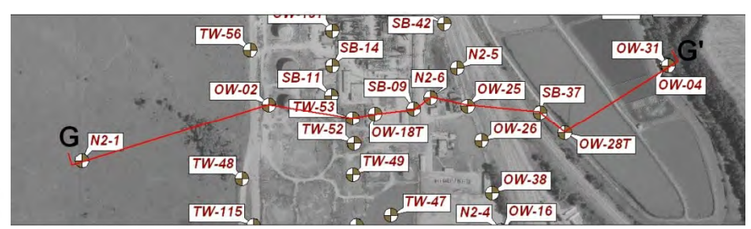


LITHOLOGY

- WATER
- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE



NOTES:

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- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION G-G'

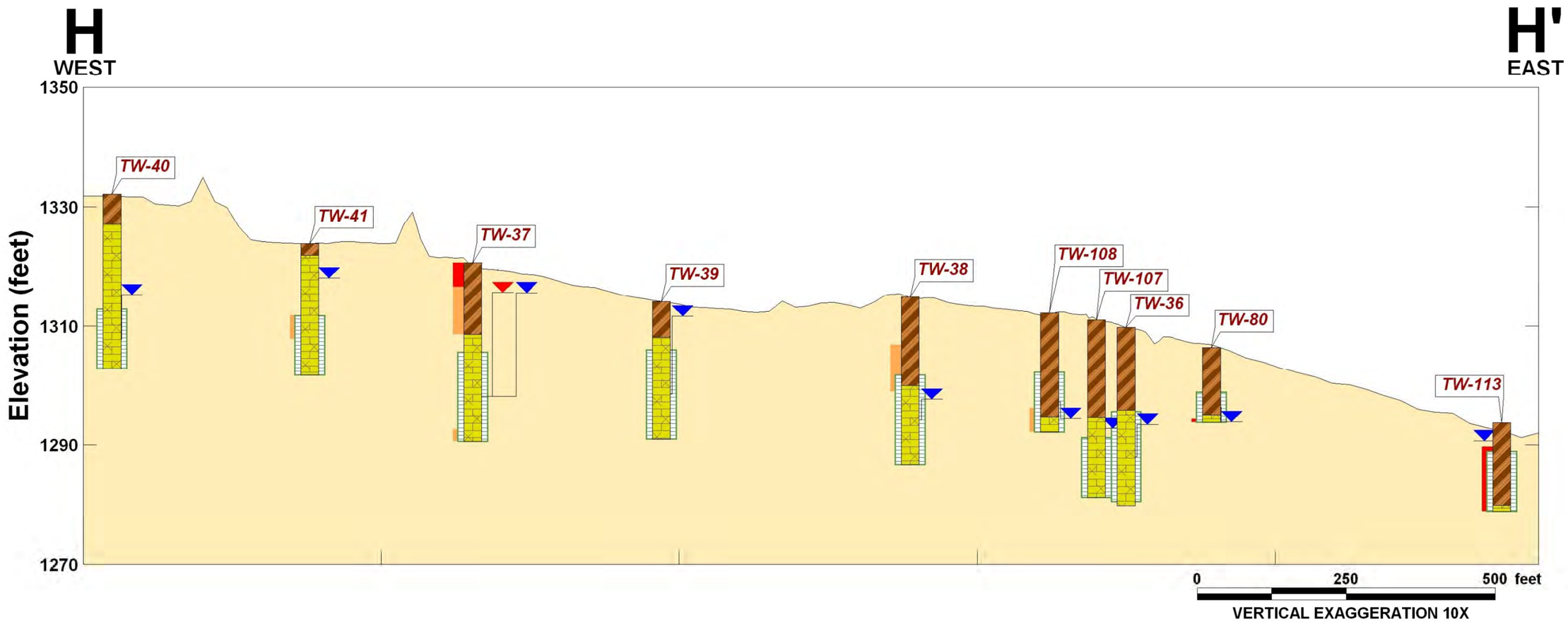
PROJECT

EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso MWH

FIGURE

28



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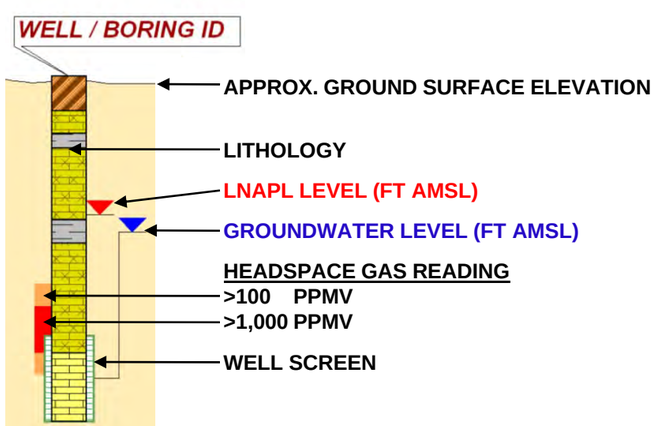
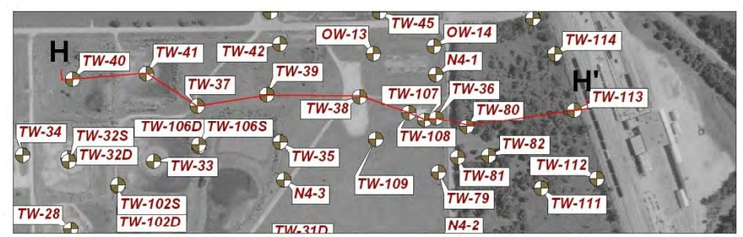


LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE



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- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION H-H'

PROJECT

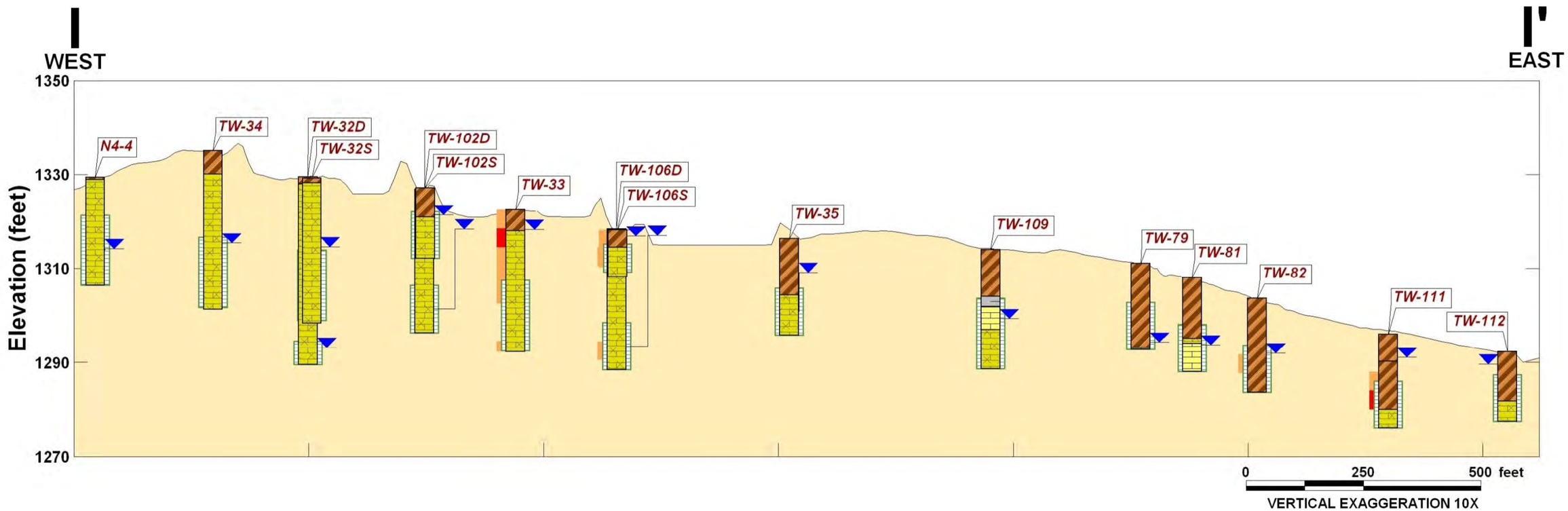
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso

MWH

FIGURE

29



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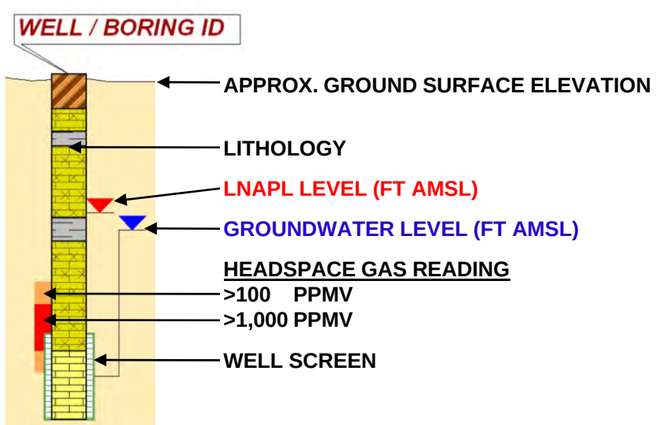
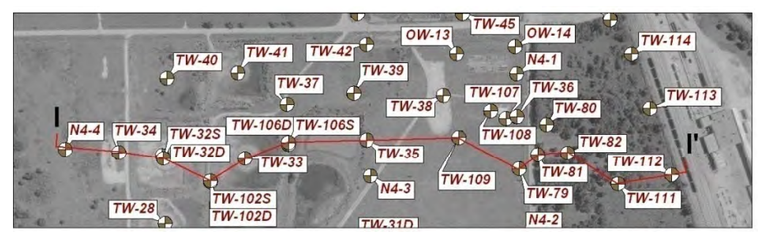


LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE



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- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION I-I'

PROJECT

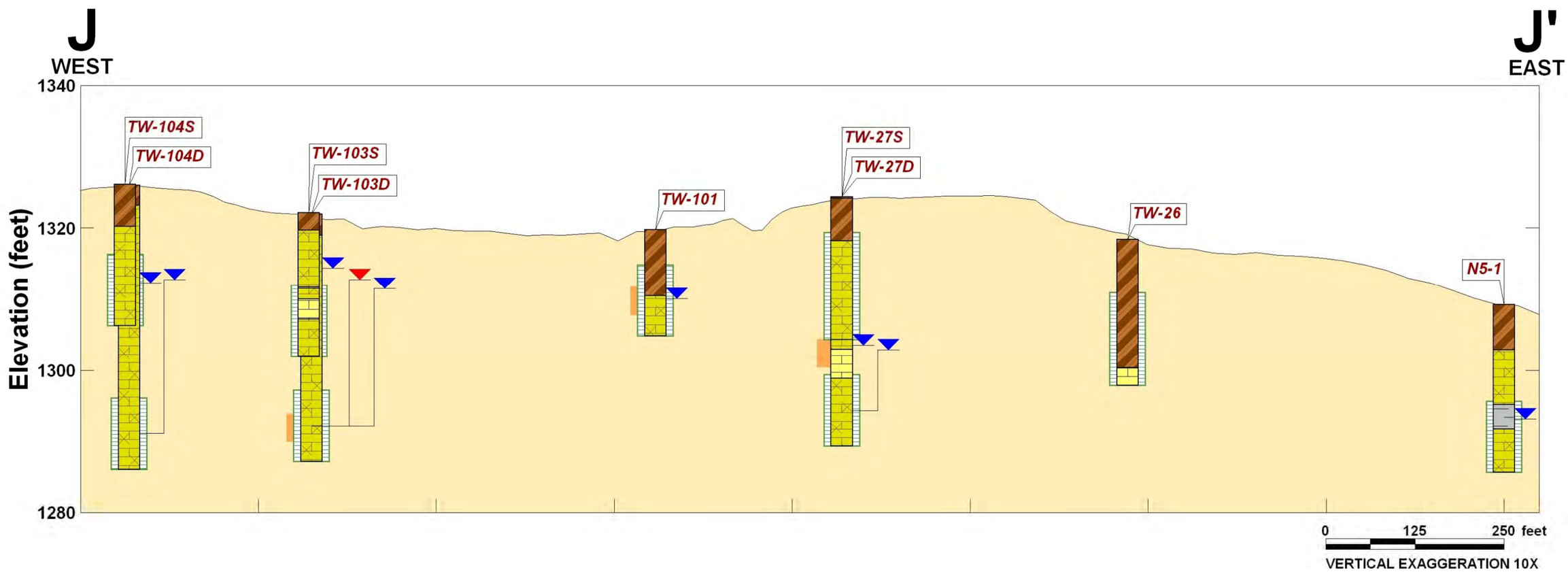
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

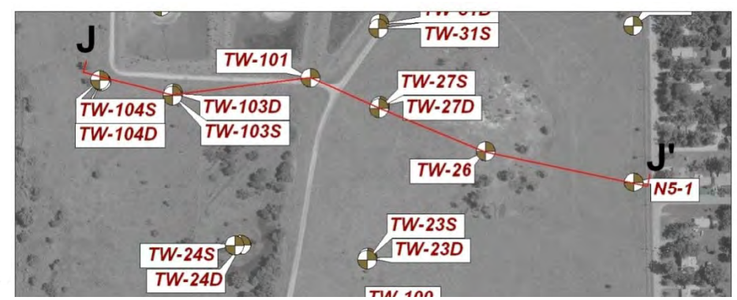
elpaso

MWH

FIGURE

30





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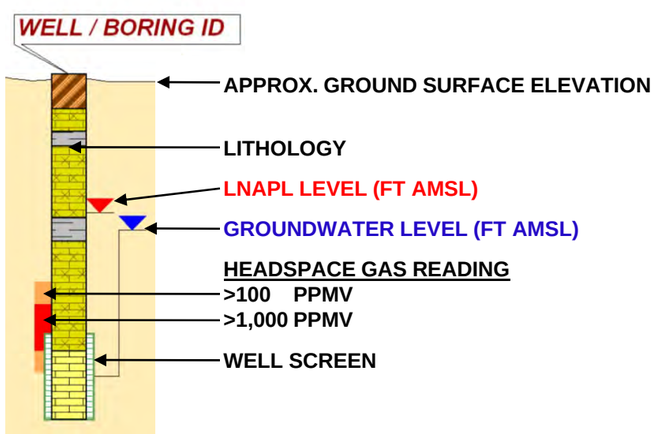
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

LEGEND:



LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE

TITLE

CROSS-SECTION J-J'

PROJECT

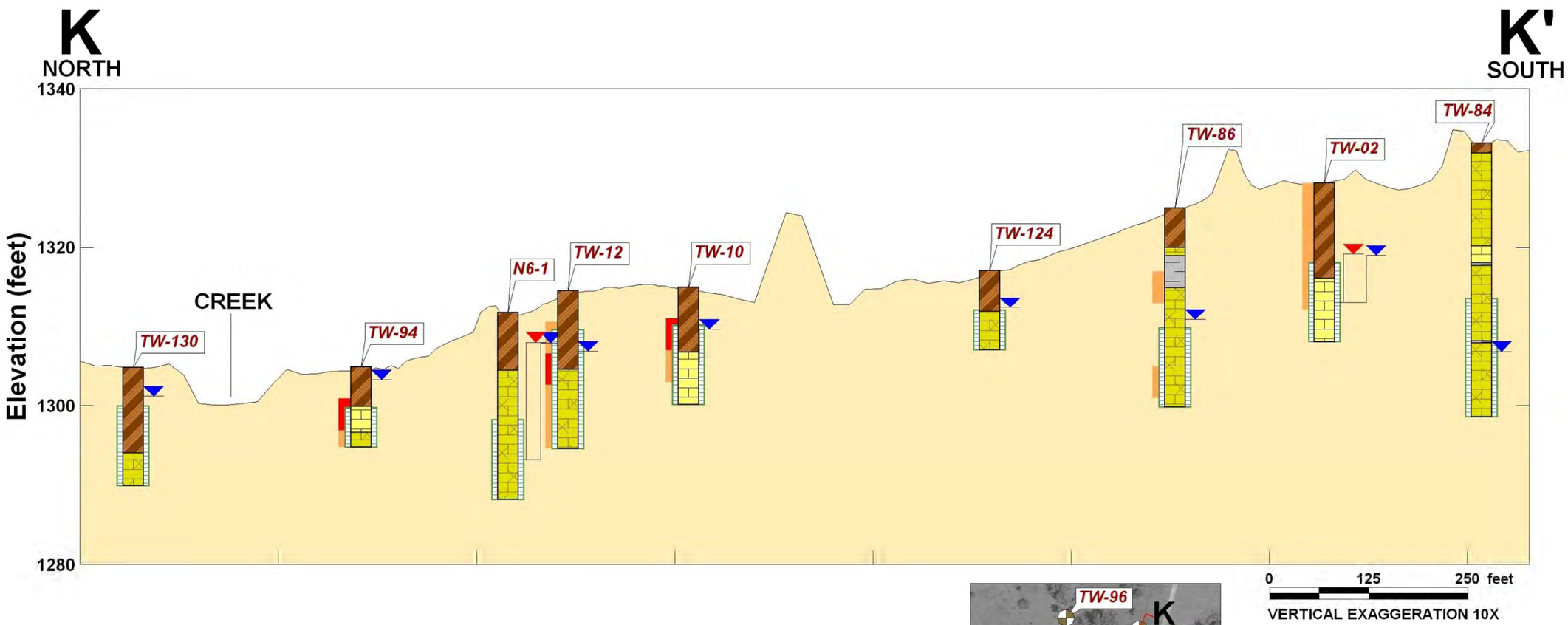
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

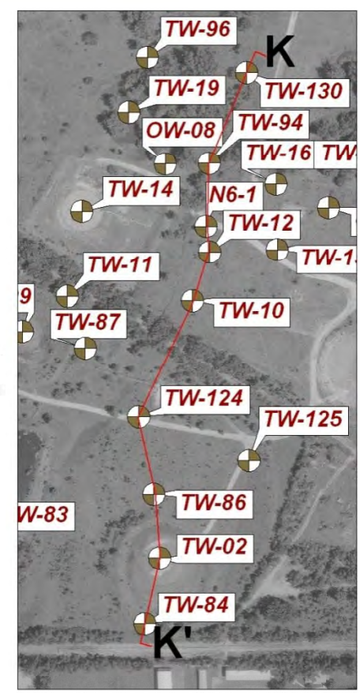
elpaso

MWH

FIGURE

31





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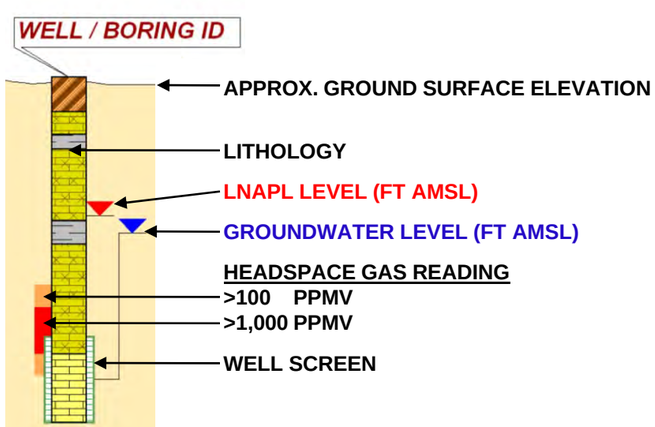


LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE

NOTES:

- AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET
- TOPOGRAPHY PRODUCED FROM DTM DATA FROM THE AERIAL PHOTOGRAPHY FROM JUNE 15, 2005 USING PHOTOGRAMMETRIC METHODS ON ANALYTICAL STEREOPLOTTERS
- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009, EXCEPT TW-02 WAS MEASURED FEBRUARY 14, 2008
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION K-K'

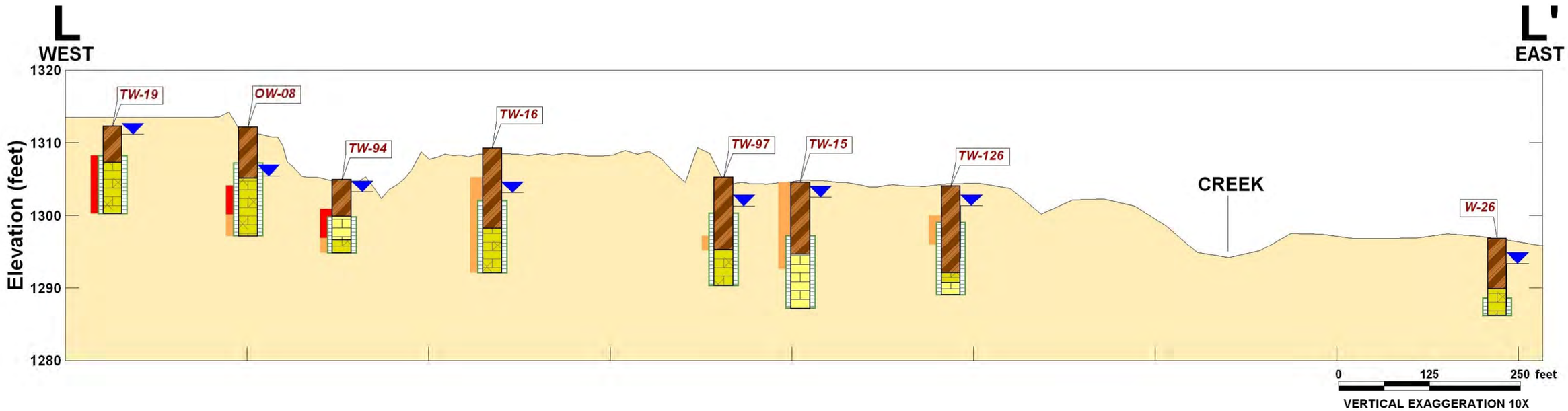
PROJECT

EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso MWH

FIGURE

32



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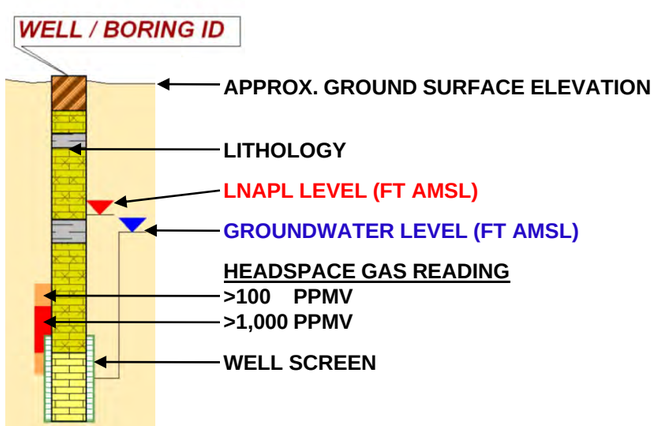
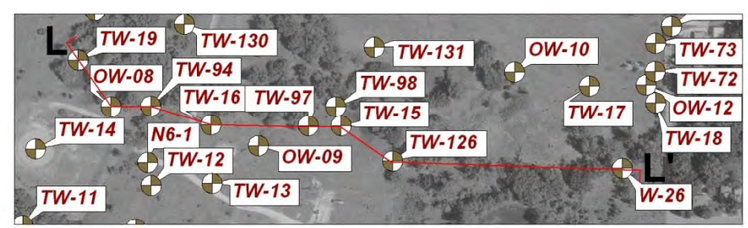


LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE



NOTES:

- AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET
- TOPOGRAPHY PRODUCED FROM DTM DATA FROM THE AERIAL PHOTOGRAPHY FROM JUNE 15, 2005 USING PHOTOGRAMMETRIC METHODS ON ANALYTICAL STEREOPLOTTERS
- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION L-L'

PROJECT

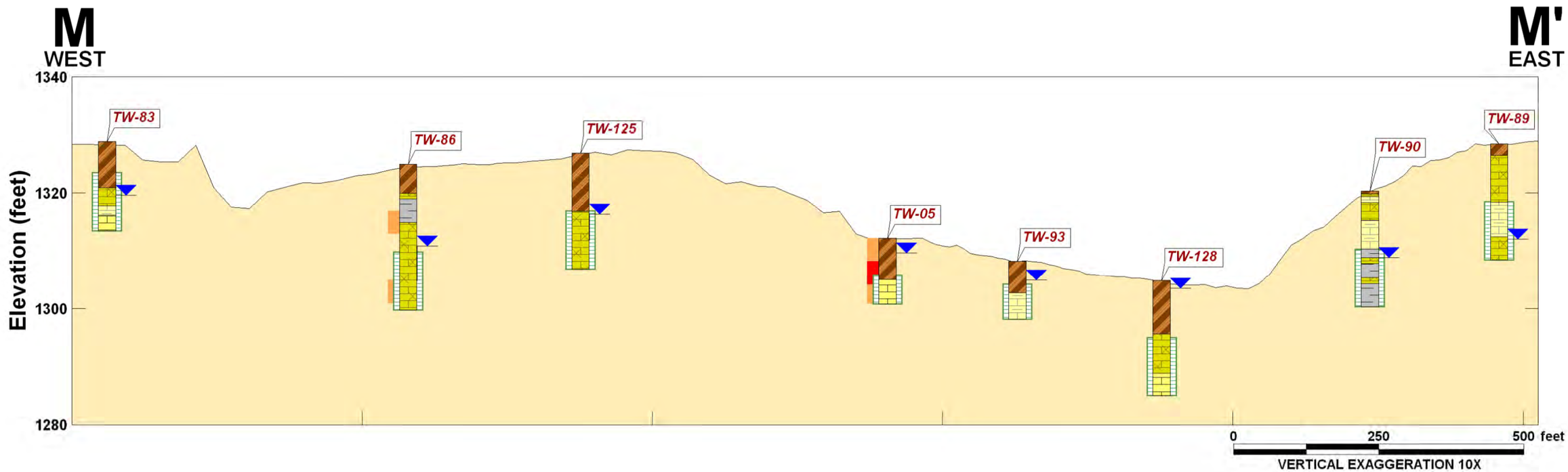
EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

elpaso

MWH

FIGURE

33



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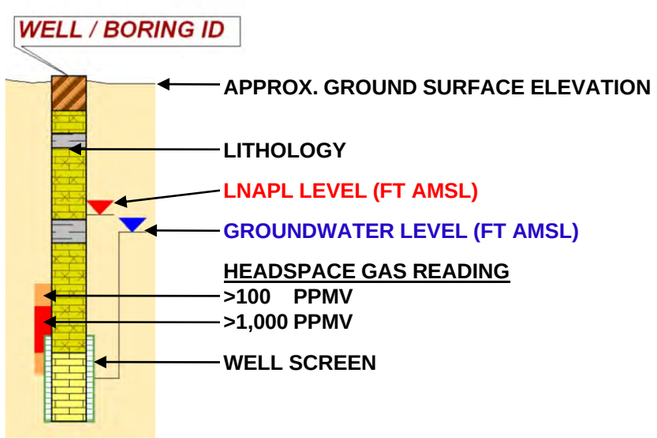
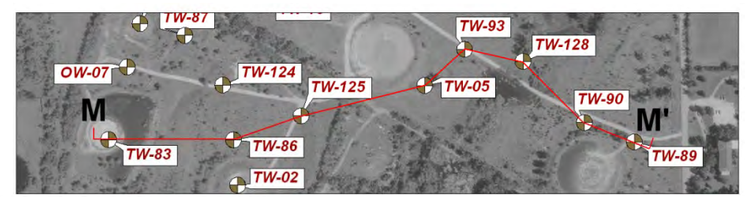


LITHOLOGY

- UNCONSOLIDATED MATERIAL (PRIMARILY CLAY AND SILT)
- LIMESTONE - WEATHERED
- LIMESTONE
- INTERBEDDED LIMESTONE / SHALE
- SHALE



NOTES:

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- TOPOGRAPHY PRODUCED FROM DTM DATA FROM THE AERIAL PHOTOGRAPHY FROM JUNE 15, 2005 USING PHOTOGRAMMETRIC METHODS ON ANALYTICAL STEREOPLOTTERS
- BORINGS / WELLS PROJECTED ONTO CROSS-SECTION RESULTING IN VISUAL DISCREPANCIES BETWEEN ACTUAL AND INTERPRETED ELEVATIONS
- ALL WATER AND LNAPL LEVELS WERE MEASURED FEBRUARY 10-12, 2009
- FT AMSL – FEET ABOVE MEAN SEA LEVEL
- LNAPL – LIGHT NON-AQUEOUS PHASE LIQUID
- PPMV – PARTS PER MILLION BY VOLUME IN SOIL HEADSPACE GAS

TITLE

CROSS-SECTION M-M'

PROJECT

EL DORADO, KANSAS
EL PASO MERCHANT ENERGY - PETROLEUM CO.

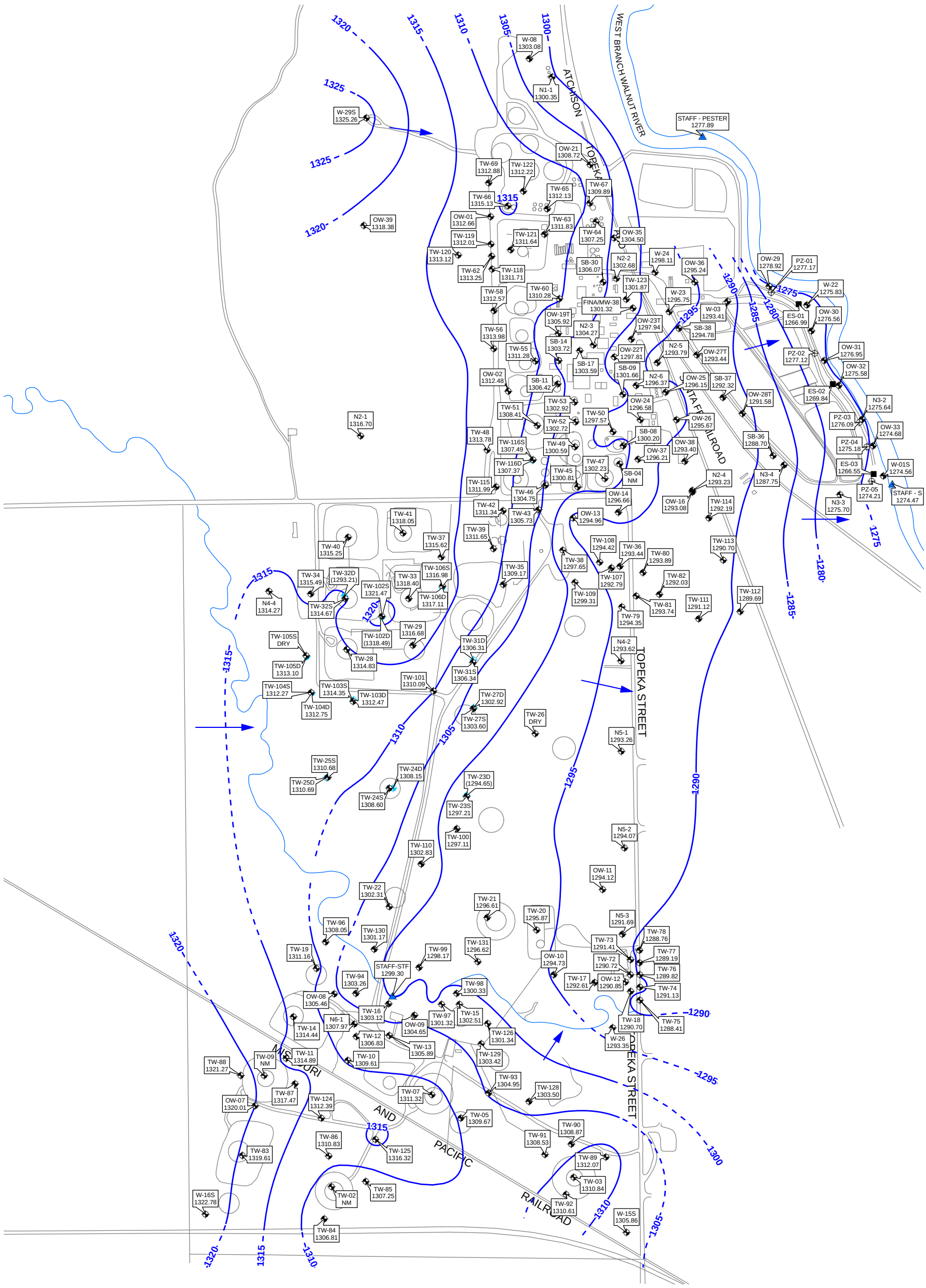
elpaso

MWH

FIGURE

34

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-017C_ShallowWLFeb09.mxd 8/9/2009



LEGEND

- STAFF GAUGE LOCATION
- EXTRACTION SUMP
- IN-TRENCH PIEZOMETER
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)

NOTES:
WELL ASYMBOLS LABELED WITH WELL NAME AND GROUNDWATER ELEVATION, FEET ABOVE MEAN SEA LEVEL (AMSL), FEBRUARY 10-12, 2009.
STAFF GAUGE SYMBOLS LABELED WITH NAME AND WALNUT RIVER ELEVATION OR SOUTH TANK FARM (STF) CREEK ELEVATION, FEET AMSL, FEBRUARY 10, 2009.
NM = NOT MEASURED
( ) = DATA NOT USED FOR CONTOURING (DEEP WELL).

CONTOURS

- POTENTIOMETRIC SURFACE CONTOUR (5 FOOT CONTOUR INTERVAL)
- INFERRED POTENTIOMETRIC SURFACE CONTOUR
- GROUNDWATER FLOW DIRECTION

N
W E
S

SCALE

0 600 1,200
SCALE IN FEET

TITLE
SHALLOW WELLS GROUNDWATER POTENTIOMETRIC SURFACE MAP - FEBRUARY 2009

FIGURE
35

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	04/09
DRAWN BY	R. Hultgren	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-017C_ShallowWLFeb09.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

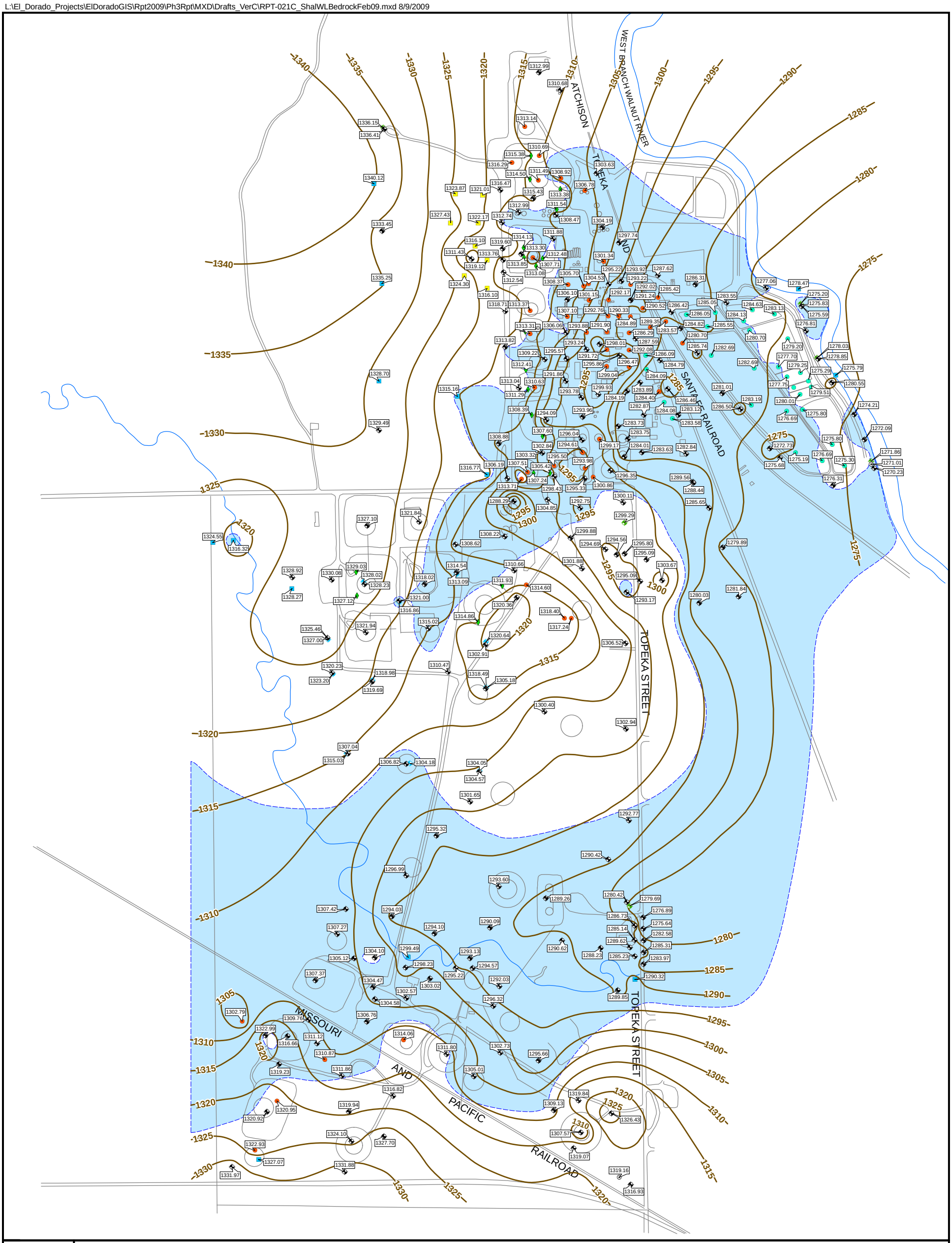
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SHALLOW WELLS GROUNDWATER POTENTIOMETRIC SURFACE MAP - FEBRUARY 2009

MWH

FIGURE
35

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-021C_ShalWLBedrockFeb09.mxd 8/9/2009



LEGEND:

- AHA BACKHOE SAMPLE
- SHALLOW SOIL SAMPLE
- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- EXTRACTION SUMP
- IN-TRENCH PIEZOMETER
- BEDROCK OUTCROP LOCATION

CONTOURS

- TOP OF BEDROCK STRUCTURE-CONTOUR, FEET AMSL (5 FOOT CONTOUR INTERVAL)
- GROUNDWATER POTENTIOMETRIC SURFACE, FEBRUARY 10-12, 2009, ABOVE TOP OF BEDROCK ELEVATION

N W E S

SCALE

0 600 1,200

SCALE IN FEET

NOTES:
WELLS AND SOIL BORING SYMBOLS LABELED WITH TOP OF BEDROCK ELEVATION IN FEET AMSL.
AMSL = ABOVE MEAN SEA LEVEL

TITLE
BEDROCK STRUCTURE-CONTOUR MAP AND SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE MAP - FEBRUARY 2009

FIGURE
36

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-021C_ShalWLBedrockFeb09.mxd	

elpaso

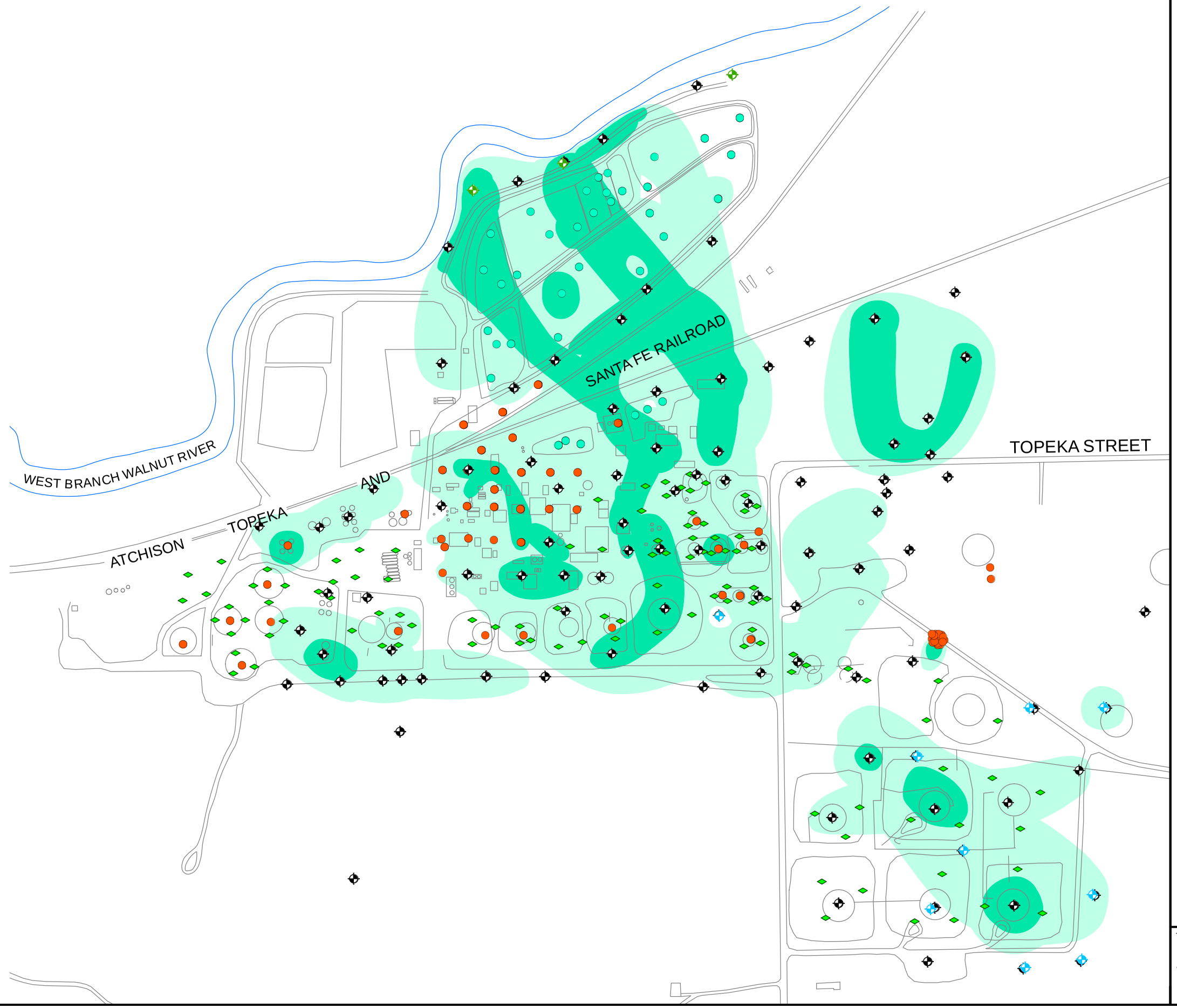
PROJECT LOCATION: EL DORADO, KANSAS

PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE: BEDROCK STRUCTURE-CONTOUR MAP AND SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE MAP - FEBRUARY 2009

MWH

FIGURE: 36



LEGEND:

- SHALLOW SOIL SAMPLE
- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL

NOTES:
WELLS AND SOIL BORINGS SHOWN WHERE PID RESULTS (PPMV) WERE OBSERVED BETWEEN 0 AND 32 FEET BELOW GROUND SURFACE (BGS).
SOIL HEADSPACE GAS CONCENTRATIONS (SHADED REGIONS) ARE OVERLAIN FOR THE EIGHT 4-FOOT INTERVALS BETWEEN 0 AND 32 FEET BGS.
PID = PHOTOIONIZATION DETECTOR

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-016C_SiteSoilVOC_0-32.mxd	

SOIL HEADSPACE GAS CONCENTRATIONS
- MAXIMUM PID RESULT <100 PPMV
- MAXIMUM PID RESULT 100 - 1000 PPMV
- MAXIMUM PID RESULT >1000 PPMV

N W E S

SCALE
0 400 800
SCALE IN FEET

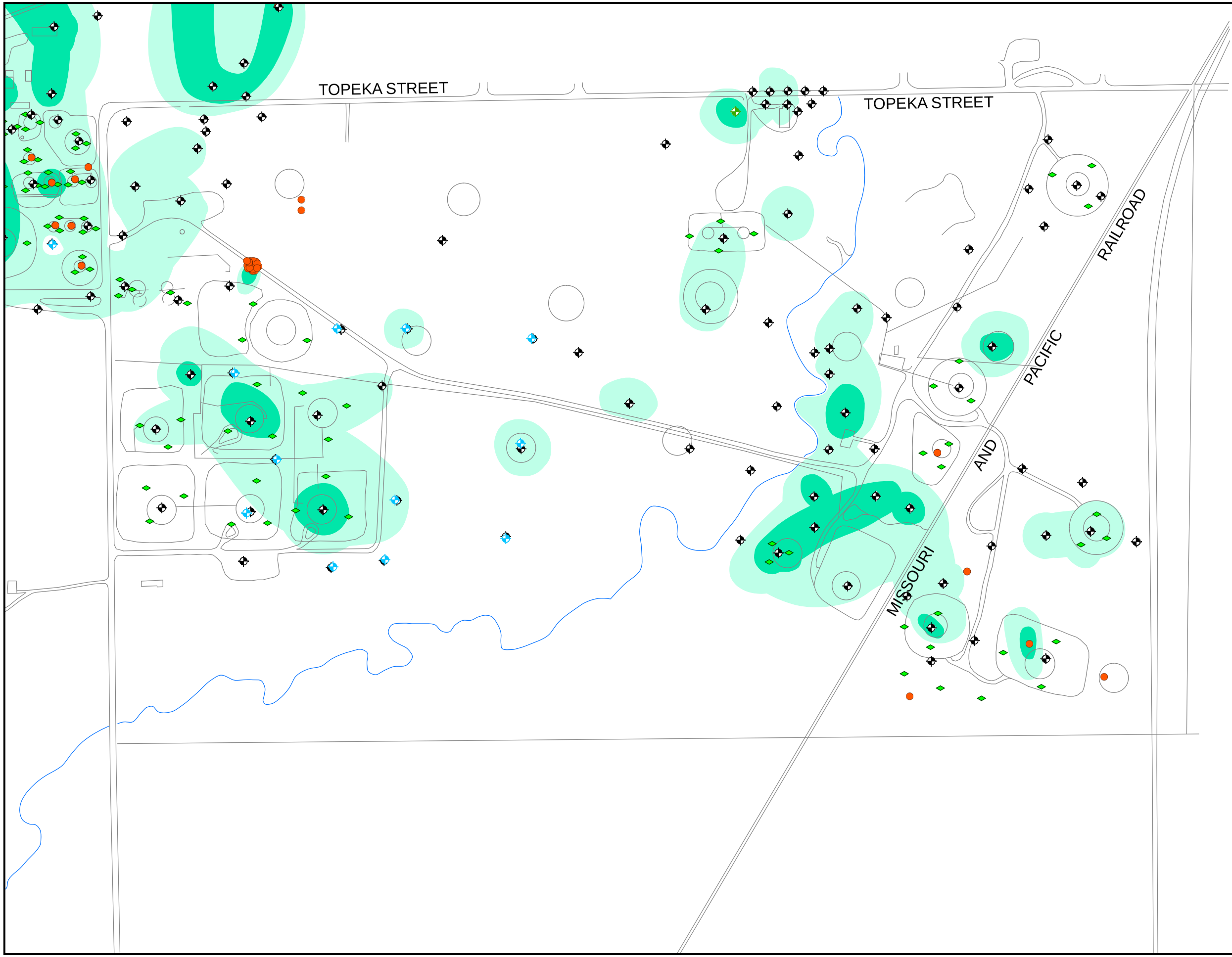
elpaso

MWH

PROJECT LOCATION: EL DORADO, KANSAS
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.
TITLE: SOIL HEADSPACE GAS DATA, 0-32' COMPOSITE NORTHERN AREA
FIGURE: 37

TITLE
SOIL HEADSPACE GAS DATA, 0-32' COMPOSITE NORTHERN AREA

FIGURE
37



SOIL HEADSPACE GAS CONCENTRATIONS

- MAXIMUM PID RESULT <100 PPMV
- MAXIMUM PID RESULT 100 - 1000 PPMV
- MAXIMUM PID RESULT >1000 PPMV

N W E S

SCALE

0 400 800

SCALE IN FEET

LEGEND:

- SHALLOW SOIL SAMPLE
- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL

NOTES:
WELLS AND SOIL BORINGS SHOWN WHERE PID RESULTS (PPMV) WERE OBSERVED BETWEEN 0 AND 32 FEET BELOW GROUND SURFACE (BGS).
SOIL HEADSPACE GAS CONCENTRATIONS (SHADED REGIONS) ARE OVERLAIN FOR THE EIGHT 4-FOOT INTERVALS BETWEEN 0 AND 32 FEET BGS.
PID = PHOTOIONIZATION DETECTOR

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DRAWN BY	R. Hultgren 08/09
CHECKED BY	R. Hultgren 08/09
APPROVED BY	W. Pickens 08/09
PROJECT MANAGER	D. Mick 08/09
PROJECT NO.	1914351.90010408
FILE NAME	RPT-016C_SiteSoilVOC_0-32.mxd

elpaso

MWH

PROJECT LOCATION: EL DORADO, KANSAS

PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE: SOIL HEADSPACE GAS DATA, 0-32' COMPOSITE SOUTHERN AREA

FIGURE: 38

TITLE

SOIL HEADSPACE GAS DATA, 0-32' COMPOSITE SOUTHERN AREA

FIGURE

38

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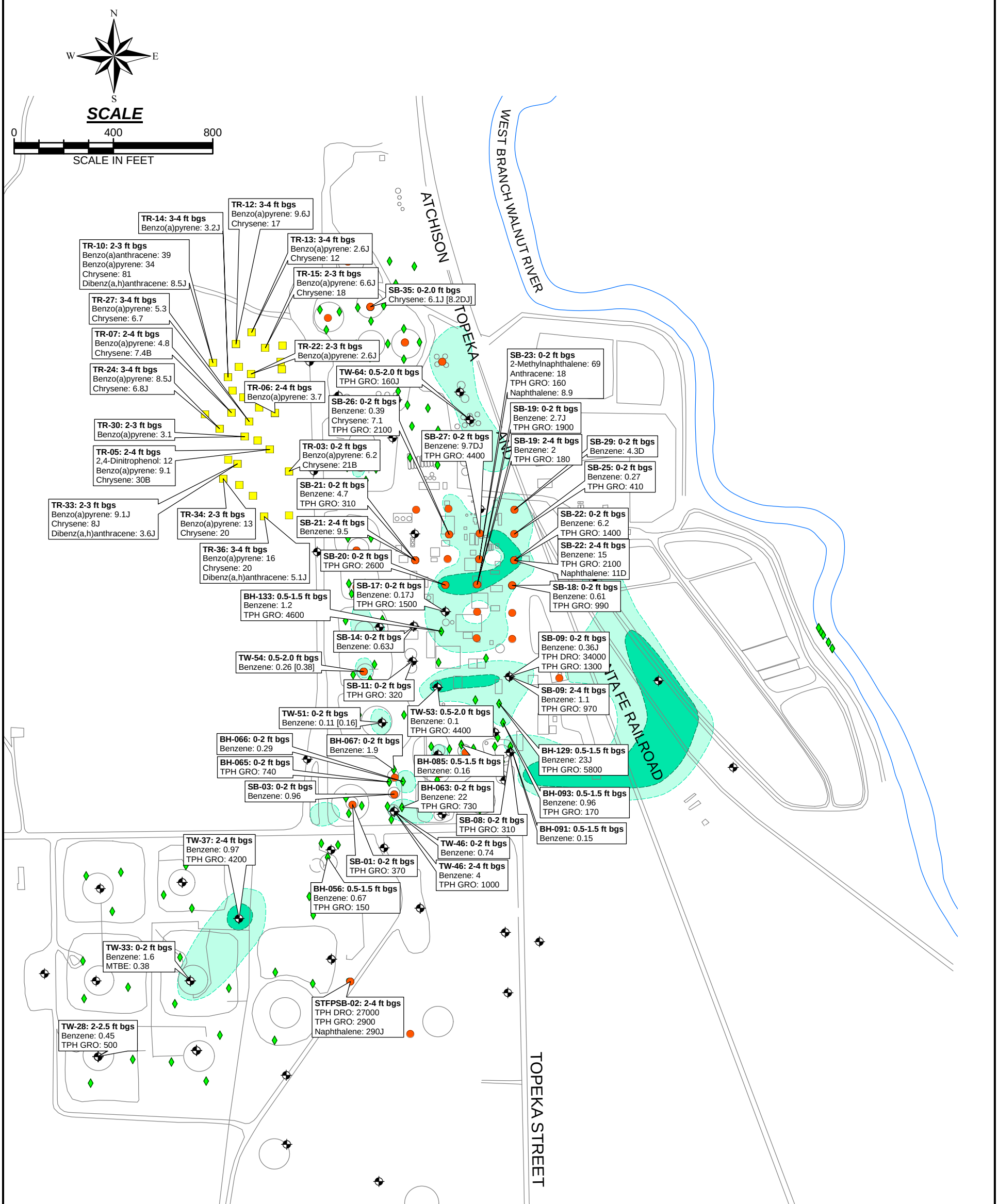

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 0-4' SAMPLING INTERVAL NORTHERN AREA

FIGURE
39

LEGEND:

- AHA BACKHOE SAMPLE
- SHALLOW SOIL SAMPLE
- SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

- MAXIMUM PID RESULT <100 PPMV
- MAXIMUM PID RESULT 100 - 1000 PPMV
- MAXIMUM PID RESULT >1000 PPMV

KANSAS TIER 2 RISK-BASED STANDARDS FOR NON-RESIDENTIAL (INDUSTRIAL) PATHWAYS:

ANALYTE	LEVEL	UNITS	PATHWAY(S)
2,4-DINITROPHENOL	2.1	mg/kg	SOIL TO GROUNDWATER
2-METHYLNAPHTHALENE	45	mg/kg	SOIL TO GROUNDWATER
ANTHRACENE	13	mg/kg	SOIL/SOIL TO GROUNDWATER
BENZENE	0.08	mg/kg	SOIL TO GROUNDWATER
BENZO(A)ANTHRACENE	26	mg/kg	SOIL
BENZO(A)PYRENE	2.6	mg/kg	SOIL
BENZO(B)FLUORANTHENE	19	mg/kg	SOIL/SOIL TO GROUNDWATER
CHLOROFORM	0.96	mg/kg	SOIL TO GROUNDWATER
CHRYSENE	6.4	mg/kg	SOIL/SOIL TO GROUNDWATER
DIBENZ(A,H)ANTHRACENE	2.6	mg/kg	SOIL
TPH DRO	15000	mg/kg	SOIL TO GROUNDWATER
ETHYLBENZENE	55	mg/kg	SOIL TO GROUNDWATER
TPH GRO	150	mg/kg	SOIL TO GROUNDWATER
MTBE	0.09	mg/kg	SOIL TO GROUNDWATER
NAPHTHALENE	3.52	mg/kg	SOIL TO GROUNDWATER
PYRIDINE	0.05	mg/kg	SOIL TO GROUNDWATER

NOTES:
WELLS AND SOIL BORINGS LABELED WITH NAME, SAMPLING DEPTH, ANALYTE, AND CONCENTRATION IN SOIL (mg/kg).
DATA ARE ONLY SHOWN WHERE RESULTS EXCEEDED THE CORRESPONDING SCREENING LEVEL FOR THE ORGANIC ANALYTES LISTED ON THE RIGHT.
DUPLICATE RESULTS SHOWN IN BRACKETS [ ] FOR APPLICABLE ANALYTE(S) AND RESULT(S).
ft bgs = FEET BELOW GROUND SURFACE. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
B = ANALYTE FOUND IN AN ASSOCIATED BLANK AND IN THE SAMPLE. D = COMPOUND DETECTED AT A SECONDARY DILUTION FACTOR.

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

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DRAWN BY	C. Pappas	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-108C_SoilHCResults_0-4.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 0-4' SAMPLING INTERVAL NORTHERN AREA

MWH

FIGURE
39

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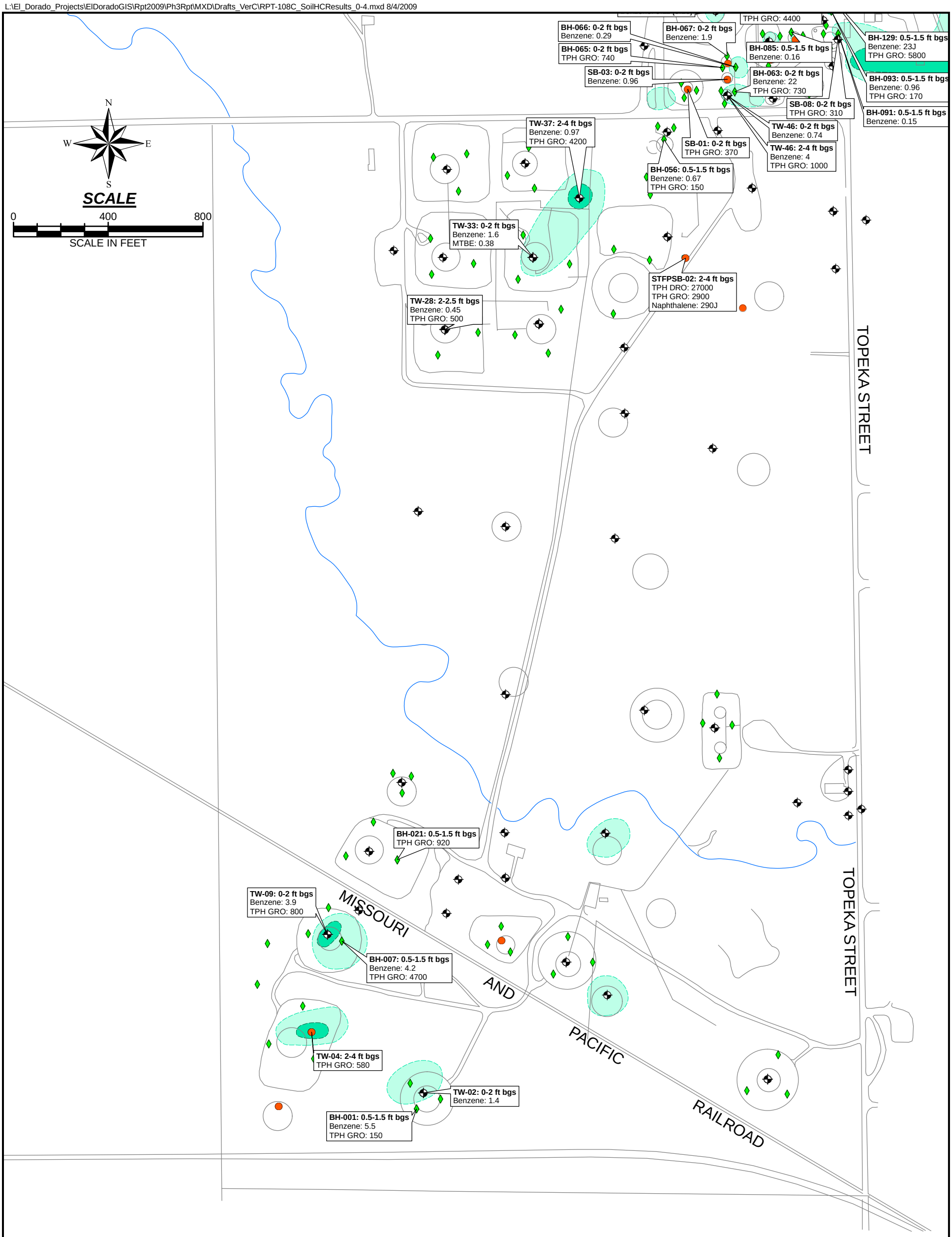

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 0-4' SAMPLING INTERVAL SOUTHERN AREA

FIGURE
40

LEGEND:

- AHA BACKHOE SAMPLE
- SHALLOW SOIL SAMPLE
- SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

- MAXIMUM PID RESULT <100 PPMV
- MAXIMUM PID RESULT 100 - 1000 PPMV
- MAXIMUM PID RESULT >1000 PPMV

KANSAS TIER 2 RISK-BASED STANDARDS FOR NON-RESIDENTIAL (INDUSTRIAL) PATHWAYS:

ANALYTE	LEVEL	UNITS	PATHWAY(S)
2,4-DINITROPHENOL	2.1	mg/kg	SOIL TO GROUNDWATER
2-METHYLNAPHTHALENE	45	mg/kg	SOIL TO GROUNDWATER
ANTHRACENE	13	mg/kg	SOIL/SOIL TO GROUNDWATER
BENZENE	0.08	mg/kg	SOIL TO GROUNDWATER
BENZO(A)ANTHRACENE	26	mg/kg	SOIL
BENZO(A)PYRENE	2.6	mg/kg	SOIL
BENZO(B)FLUORANTHENE	19	mg/kg	SOIL/SOIL TO GROUNDWATER
CHLOROFORM	0.96	mg/kg	SOIL TO GROUNDWATER
CHRYSENE	6.4	mg/kg	SOIL/SOIL TO GROUNDWATER
DIBENZ(A,H)ANTHRACENE	2.6	mg/kg	SOIL
TPH DRO	15000	mg/kg	SOIL TO GROUNDWATER
ETHYLBENZENE	55	mg/kg	SOIL TO GROUNDWATER
TPH GRO	150	mg/kg	SOIL TO GROUNDWATER
MTBE	0.09	mg/kg	SOIL TO GROUNDWATER
NAPHTHALENE	3.52	mg/kg	SOIL TO GROUNDWATER
PYRIDINE	0.05	mg/kg	SOIL TO GROUNDWATER

NOTES:
WELLS AND SOIL BORINGS LABELED WITH NAME, SAMPLING DEPTH, ANALYTE, AND CONCENTRATION IN SOIL (mg/kg).
DATA ARE ONLY SHOWN WHERE RESULTS EXCEEDED THE CORRESPONDING SCREENING LEVEL FOR THE ORGANIC ANALYTES LISTED ON THE RIGHT.
DUPLICATE RESULTS SHOWN IN BRACKETS [ ] FOR APPLICABLE ANALYTE(S) AND RESULT(S).
ft bgs = FEET BELOW GROUND SURFACE. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
B = ANALYTE FOUND IN AN ASSOCIATED BLANK AND IN THE SAMPLE. D = COMPOUND DETECTED AT A SECONDARY DILUTION FACTOR.

DRAWING REFERENCE(S):
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DRAWN BY	C. Pappas	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-108C_SoilHCResults_0-4.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

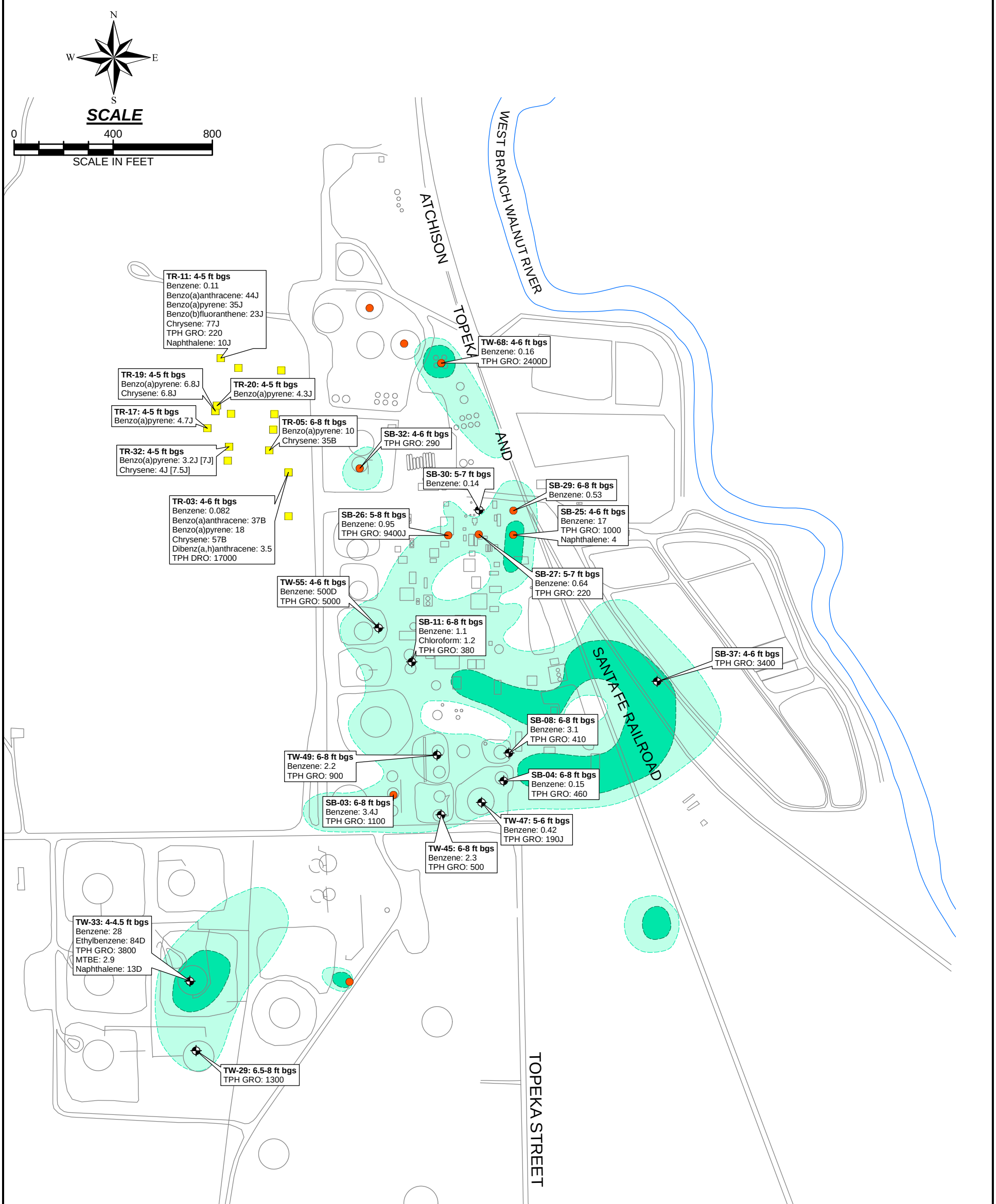
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 0-4' SAMPLING INTERVAL SOUTHERN AREA

MWH

FIGURE
40

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-109C_SoilHCResults_4-8.mxd 8/4/2009



TITLE
SOIL HEADSPACE DATA AND ORGANIC ANALYTICAL DATA, 4-8' SAMPLING INTERVAL NORTHERN AREA

FIGURE
41

LEGEND:

- AHA BACKHOE SAMPLE
- SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

- MAXIMUM PID RESULT <100 PPMV
- MAXIMUM PID RESULT 100 - 1000 PPMV
- MAXIMUM PID RESULT >1000 PPMV

KANSAS TIER 2 RISK-BASED STANDARDS FOR NON-RESIDENTIAL (INDUSTRIAL) PATHWAYS:

ANALYTE	LEVEL	UNITS	PATHWAY(S)
2,4-DINITROPHENOL	2.1	mg/kg	SOIL TO GROUNDWATER
2-METHYLNAPHTHALENE	45	mg/kg	SOIL TO GROUNDWATER
ANTHRACENE	13	mg/kg	SOIL/SOIL TO GROUNDWATER
BENZENE	0.08	mg/kg	SOIL TO GROUNDWATER
BENZO(A)ANTHRACENE	26	mg/kg	SOIL
BENZO(A)PYRENE	2.6	mg/kg	SOIL
BENZO(B)FLUORANTHENE	19	mg/kg	SOIL/SOIL TO GROUNDWATER
CHLOROFORM	0.96	mg/kg	SOIL TO GROUNDWATER
CHRYSENE	6.4	mg/kg	SOIL/SOIL TO GROUNDWATER
DIBENZ(A,H)ANTHRACENE	2.6	mg/kg	SOIL
TPH DRO	15000	mg/kg	SOIL TO GROUNDWATER
ETHYLBENZENE	55	mg/kg	SOIL TO GROUNDWATER
TPH GRO	150	mg/kg	SOIL TO GROUNDWATER
MTBE	0.09	mg/kg	SOIL TO GROUNDWATER
NAPHTHALENE	3.52	mg/kg	SOIL TO GROUNDWATER
PYRIDINE	0.05	mg/kg	SOIL TO GROUNDWATER

NOTES:
WELLS AND SOIL BORINGS LABELED WITH NAME, SAMPLING DEPTH, ANALYTE, AND CONCENTRATION IN SOIL (mg/kg).
DATA ARE ONLY SHOWN WHERE RESULTS EXCEEDED THE CORRESPONDING SCREENING LEVEL FOR THE ORGANIC ANALYTES LISTED ON THE RIGHT.
DUPLICATE RESULTS SHOWN IN BRACKETS [ ] FOR APPLICABLE ANALYTE(S) AND RESULT(S).
ft bgs = FEET BELOW GROUND SURFACE. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
B = ANALYTE FOUND IN AN ASSOCIATED BLANK AND IN THE SAMPLE. D = COMPOUND DETECTED AT A SECONDARY DILUTION FACTOR.

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-109C_SoilHCResults_4-8.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE DATA AND ORGANIC ANALYTICAL DATA, 4-8 SAMPLING INTERVAL NORTHERN AREA

MWH

FIGURE
41

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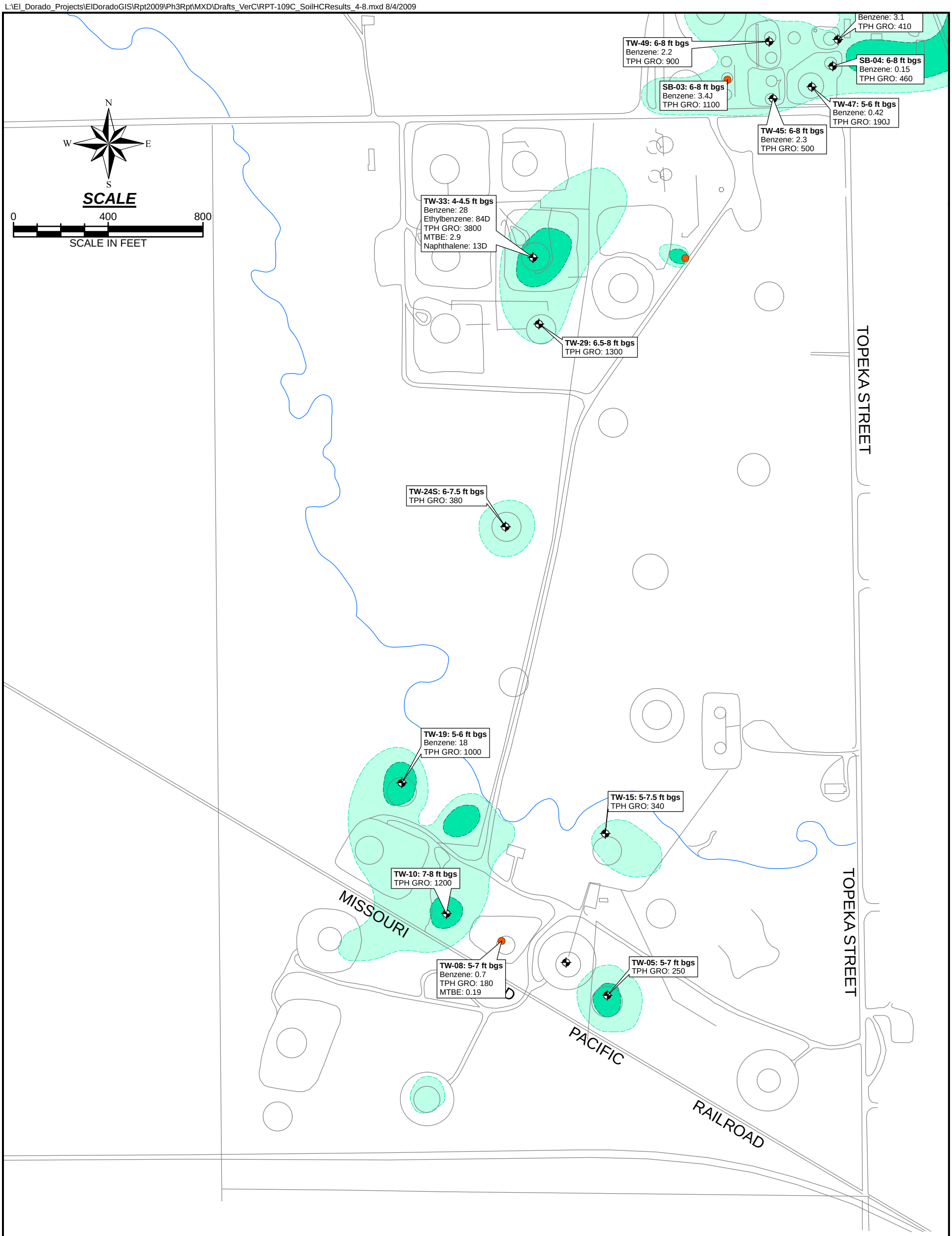

TITLE
SOIL HEADSPACE DATA AND ORGANIC ANALYTICAL DATA, 4-8' SAMPLING INTERVAL SOUTHERN AREA

FIGURE
42

LEGEND:

- AHA BACKHOE SAMPLE
- SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

- MAXIMUM PID RESULT <100 PPMV
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DRAWN BY	R. Hultgren	08/09
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PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-109C_SoilHCResults_4-8.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.
TITLE: SOIL HEADSPACE DATA AND ORGANIC ANALYTICAL DATA, 4-8 SAMPLING INTERVAL SOUTHERN AREA

MWH

FIGURE
42

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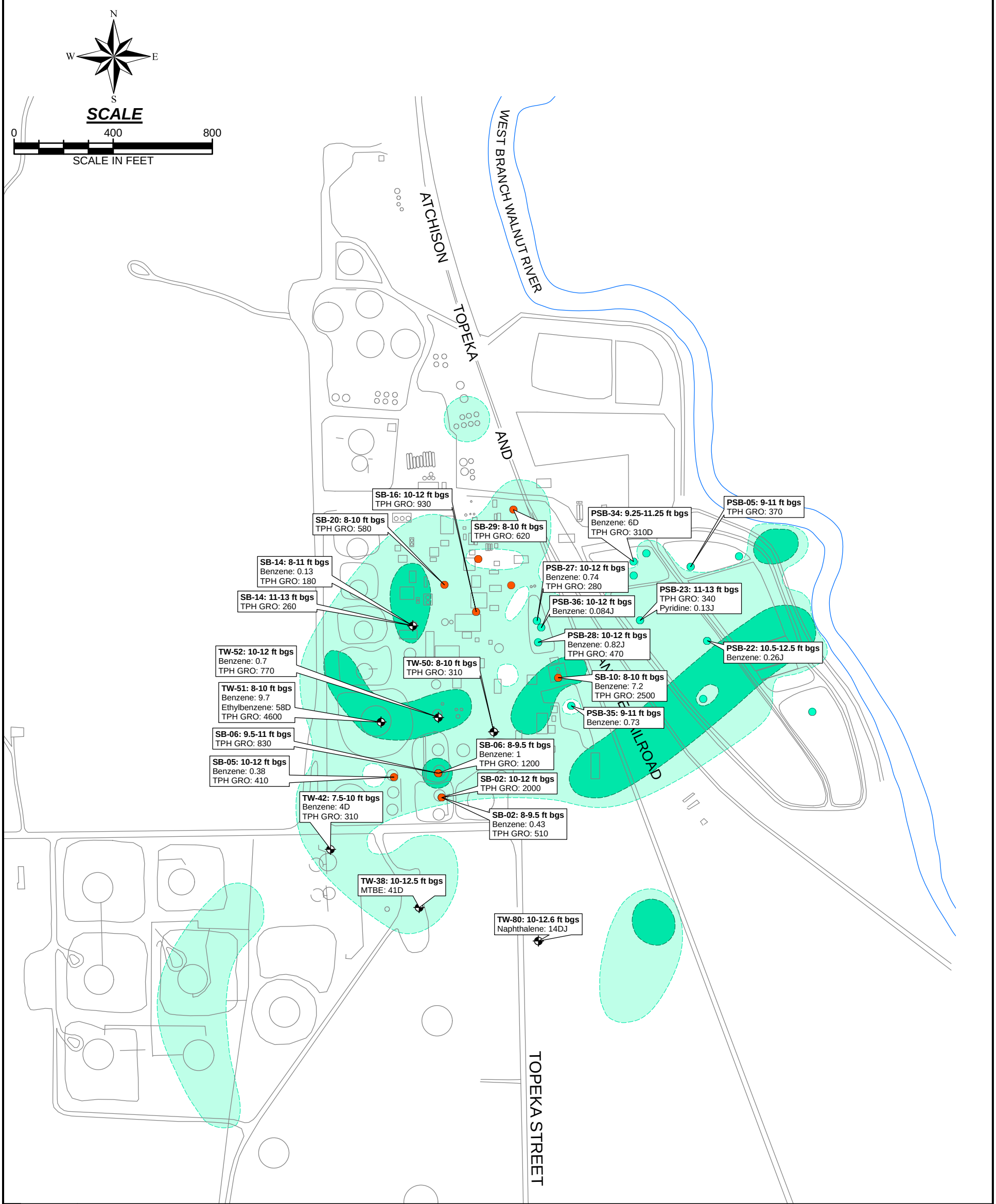

LEGEND:

- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

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PYRIDINE	0.05	mg/kg	SOIL TO GROUNDWATER

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SAMPLE DEPTHS FOR POND SOIL BORINGS (PSB) ARE REFERENCED FROM POND SURFACE WATER LEVEL.

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DRAWN BY	R. Hultgren	08/09
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APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-110C_SoilHCResults_8-12.mxd	

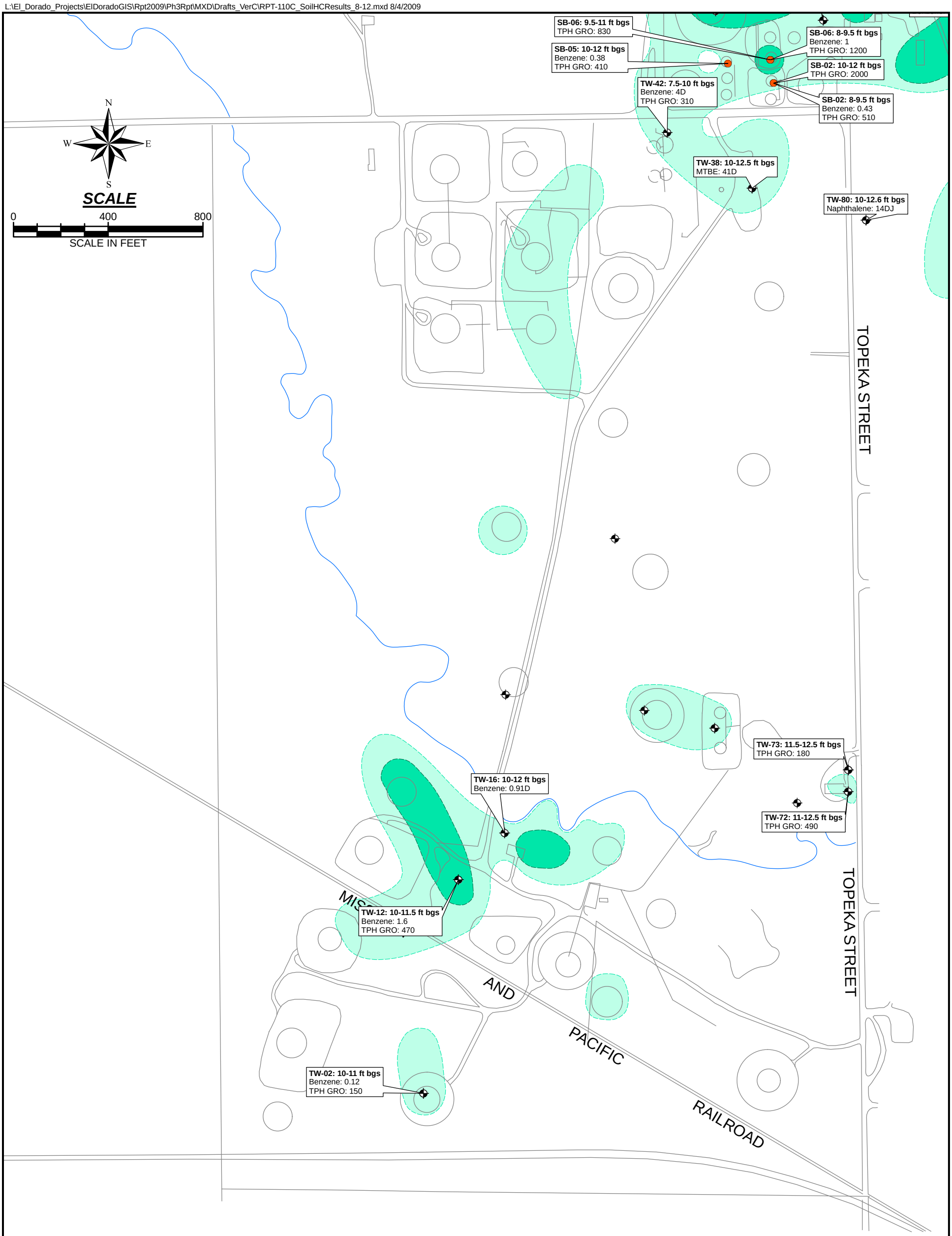
elpaso

PROJECT LOCATION: EL DORADO, KANSAS
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.
TITLE: SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 8-12' SAMPLING INTERVAL NORTHERN AREA
FIGURE: 43

MWH

TITLE: SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 8-12' SAMPLING INTERVAL NORTHERN AREA
FIGURE: 43

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-110C_SoilHCResults_8-12.mxd 8/4/2009



TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 8-12' SAMPLING INTERVAL SOUTHERN AREA

FIGURE
44

LEGEND:

- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

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TPH GRO	150	mg/kg	SOIL TO GROUNDWATER
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NAPHTHALENE	3.52	mg/kg	SOIL TO GROUNDWATER
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DRAWN BY	R. Hultgren	08/09
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APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-110C_SoilHCResults_8-12.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

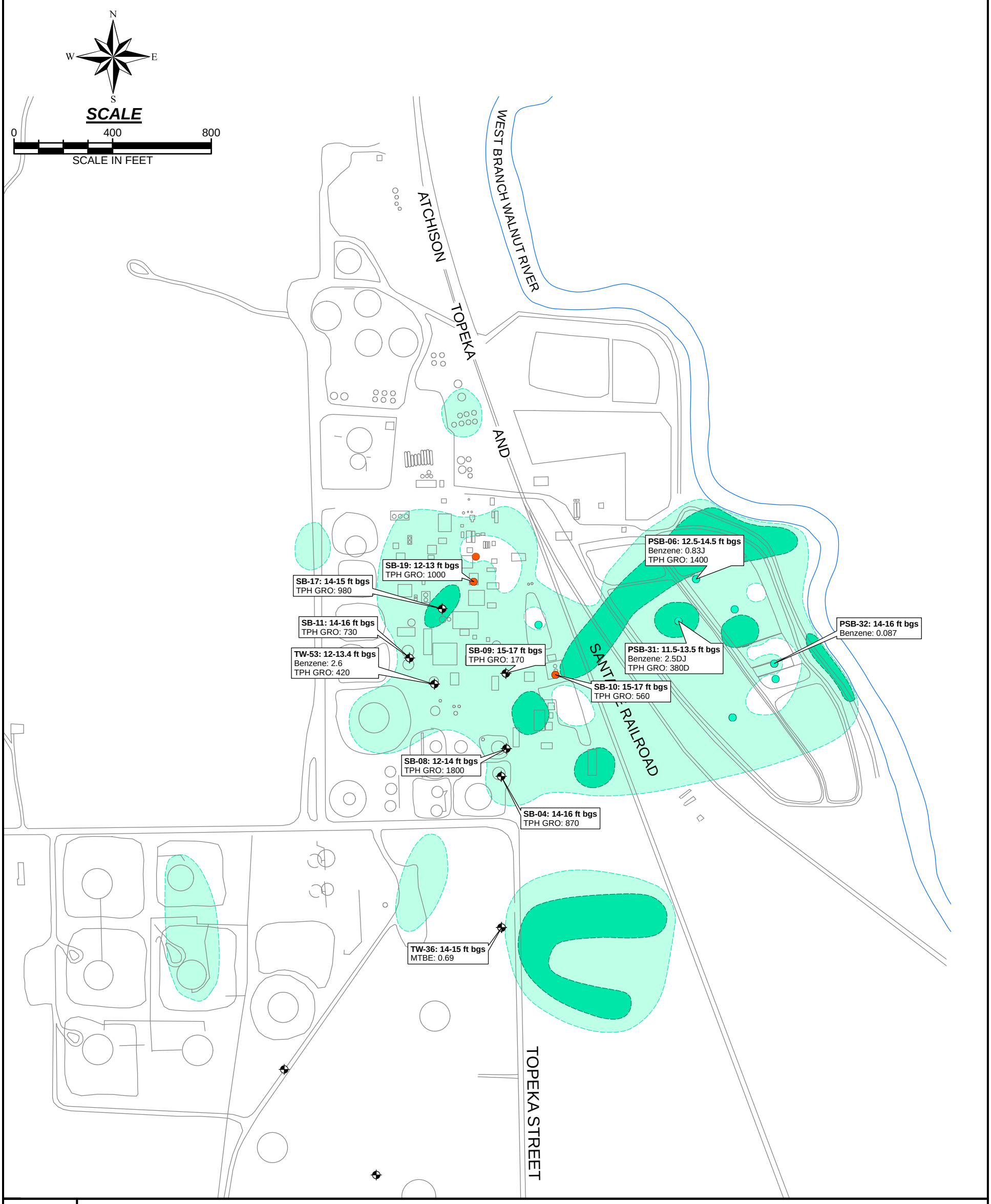
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 8-12' SAMPLING INTERVAL SOUTHERN AREA

MWH

FIGURE
44

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-111C_SoilHCResults_12-16.mxd 8/4/2009



TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 12-16' SAMPLING INTERVAL NORTHERN AREA

FIGURE
45

LEGEND:

- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

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PROJECT NO.	1914351.90010408	
FILE NAME	RPT-111C_SoilHCResults_12-16.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

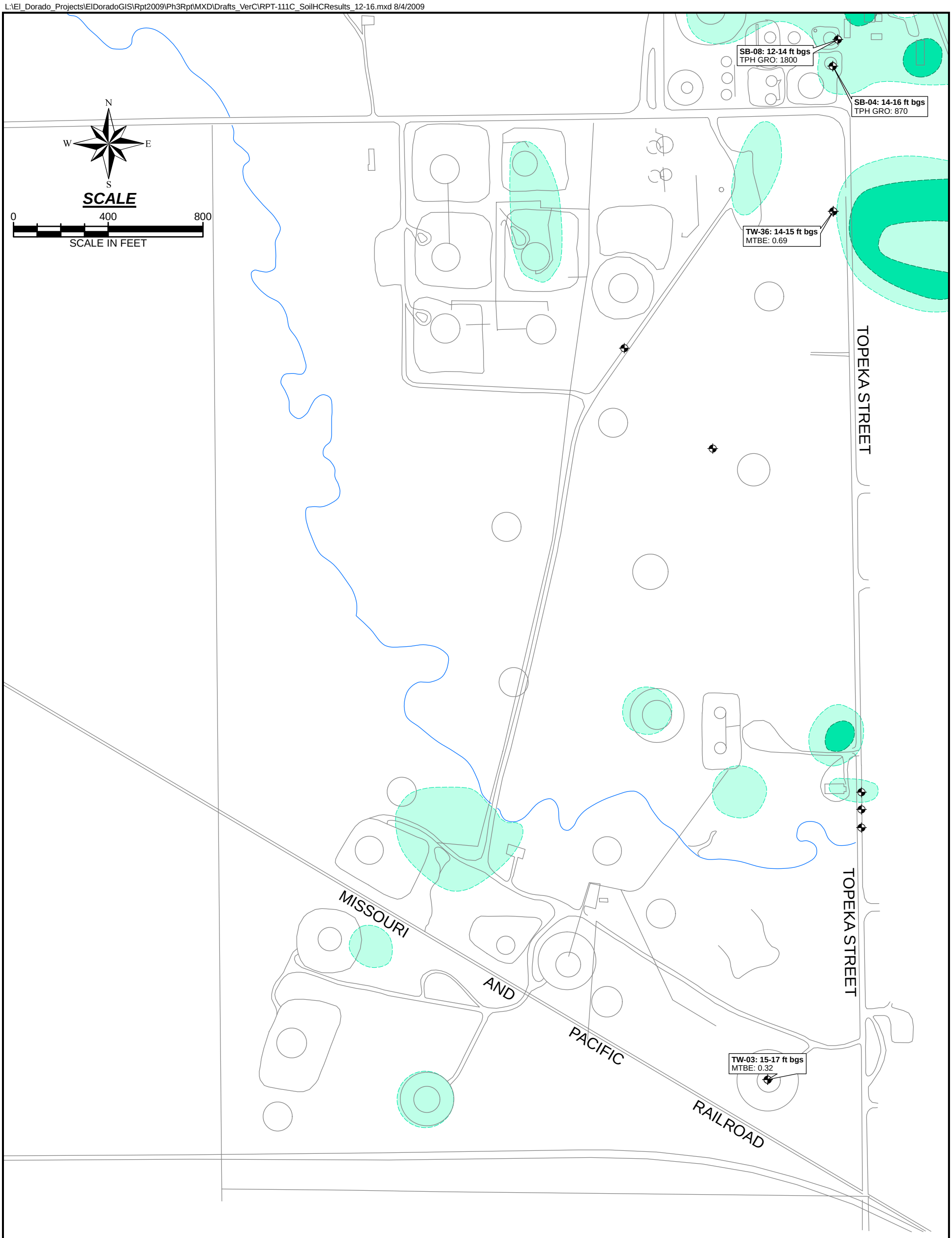
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 12-16' SAMPLING INTERVAL NORTHERN AREA

MWH

FIGURE
45

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-111C_SoilHCResults_12-16.mxd 8/4/2009



TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 12-16' SAMPLING INTERVAL SOUTHERN AREA

FIGURE
46

LEGEND:

- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

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PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-111C_SoilHCResults_12-16.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 12-16' SAMPLING INTERVAL SOUTHERN AREA

MWH

FIGURE
46

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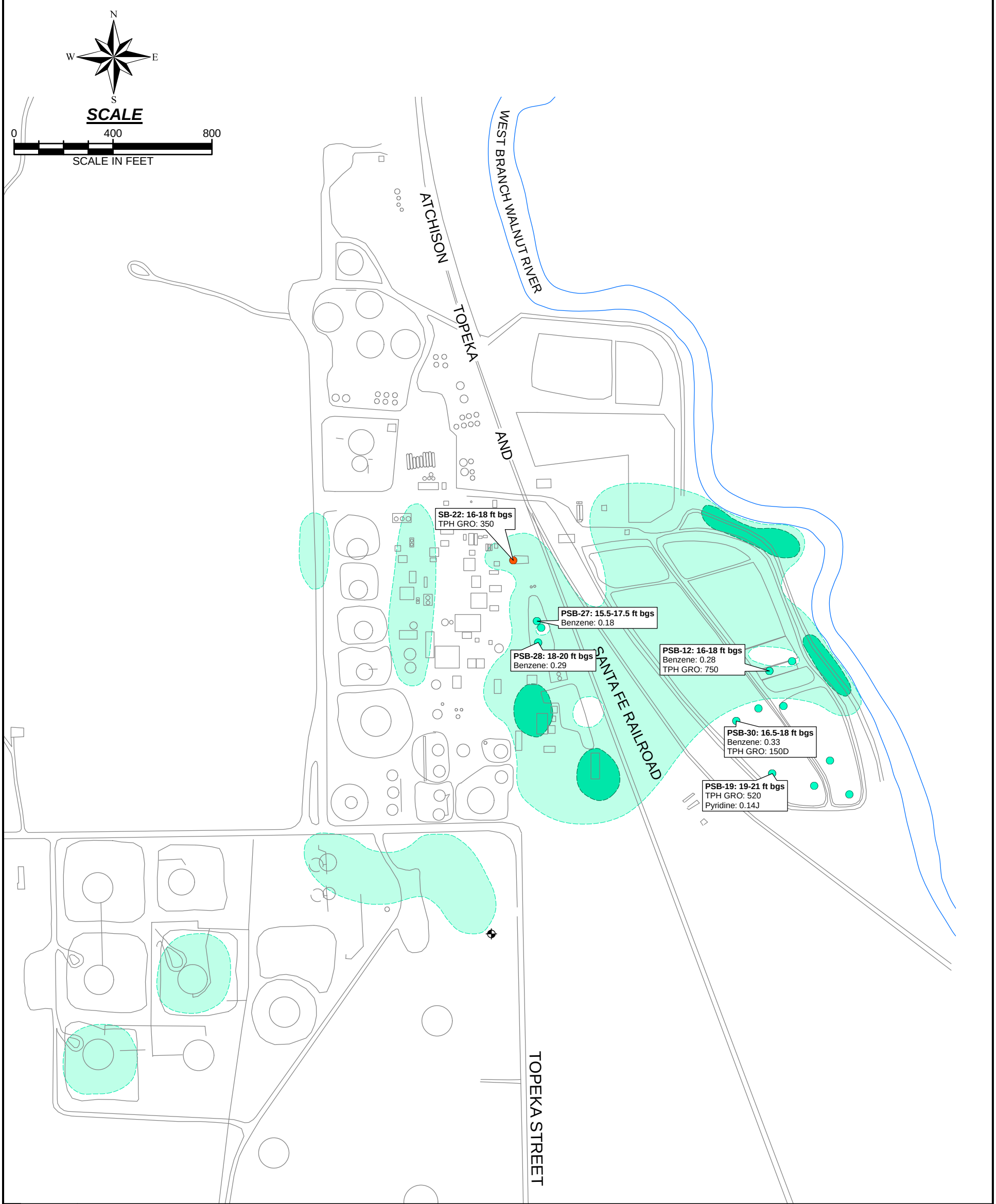

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 16-20' SAMPLING INTERVAL NORTHERN AREA

FIGURE
47

LEGEND:

- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

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BENZO(A)PYRENE	2.6	mg/kg	SOIL
BENZO(B)FLUORANTHENE	19	mg/kg	SOIL/SOIL TO GROUNDWATER
CHLOROFORM	0.96	mg/kg	SOIL TO GROUNDWATER
CHRYSENE	6.4	mg/kg	SOIL/SOIL TO GROUNDWATER
DIBENZ(A,H)ANTHRACENE	2.6	mg/kg	SOIL
TPH DRO	15000	mg/kg	SOIL TO GROUNDWATER
ETHYLBENZENE	55	mg/kg	SOIL TO GROUNDWATER
TPH GRO	150	mg/kg	SOIL TO GROUNDWATER
MTBE	0.09	mg/kg	SOIL TO GROUNDWATER
NAPHTHALENE	3.52	mg/kg	SOIL TO GROUNDWATER
PYRIDINE	0.05	mg/kg	SOIL TO GROUNDWATER

NOTES:
WELLS AND SOIL BORINGS LABELED WITH NAME, SAMPLING DEPTH, ANALYTE, AND CONCENTRATION IN SOIL (mg/kg).
DATA ARE ONLY SHOWN WHERE RESULTS EXCEEDED THE CORRESPONDING SCREENING LEVEL FOR THE ORGANIC ANALYTES LISTED ON THE RIGHT.
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B = ANALYTE FOUND IN AN ASSOCIATED BLANK AND IN THE SAMPLE. D = COMPOUND DETECTED AT A SECONDARY DILUTION FACTOR.
SAMPLE DEPTHS FOR POND SOIL BORINGS (PSB) ARE REFERENCED FROM POND SURFACE WATER LEVEL.

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-112C_SoilHCResults_16-20.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 16-20' SAMPLING INTERVAL NORTHERN AREA

MWH

FIGURE
47

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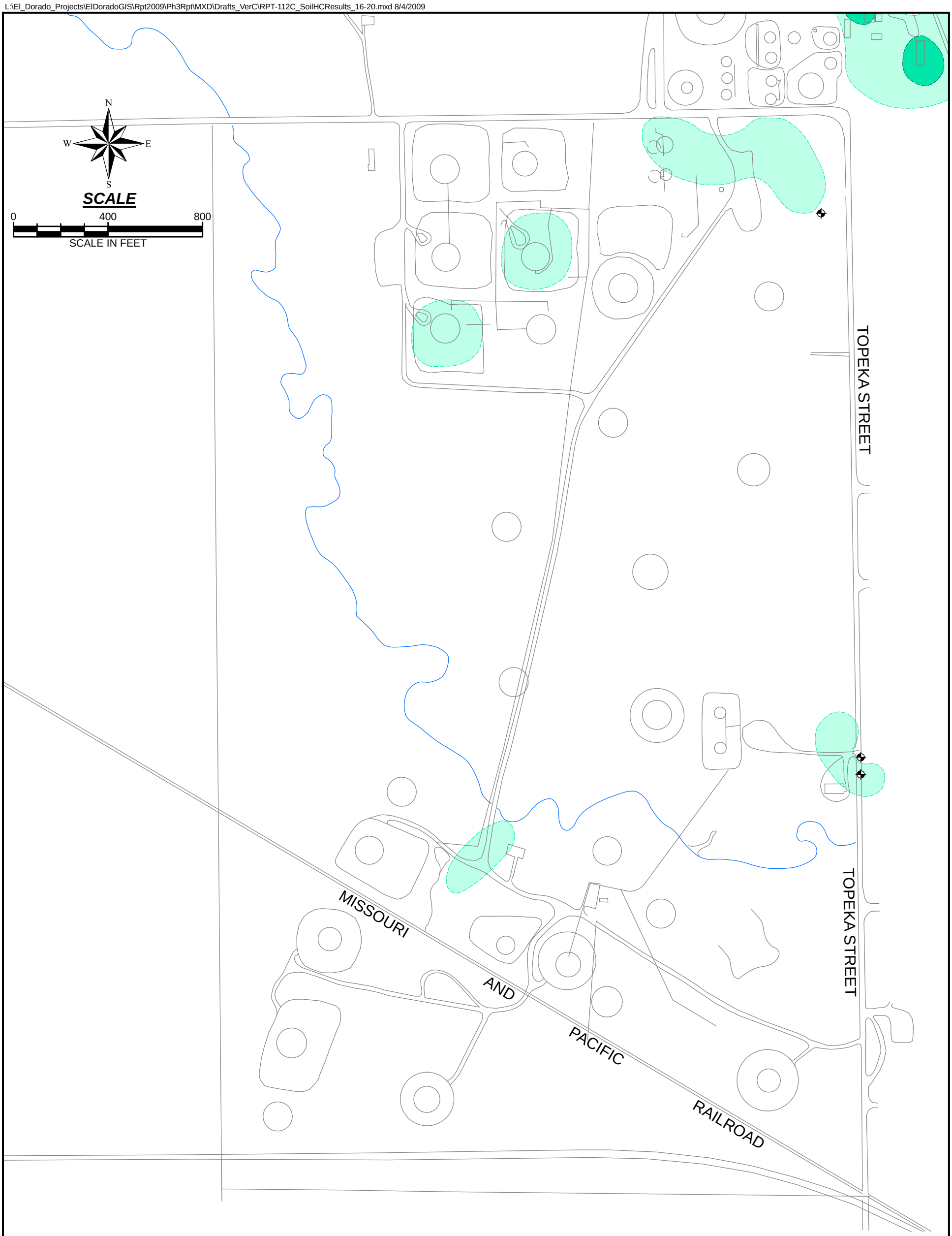

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 16-20' SAMPLING INTERVAL SOUTHERN AREA

FIGURE
48

LEGEND:

- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

- MAXIMUM PID RESULT <100 PPMV
- MAXIMUM PID RESULT 100 - 1000 PPMV
- MAXIMUM PID RESULT >1000 PPMV

KANSAS TIER 2 RISK-BASED STANDARDS FOR NON-RESIDENTIAL (INDUSTRIAL) PATHWAYS:

ANALYTE	LEVEL	UNITS	PATHWAY(S)
2,4-DINITROPHENOL	2.1	mg/kg	SOIL TO GROUNDWATER
2-METHYLNAPHTHALENE	45	mg/kg	SOIL TO GROUNDWATER
ANTHRACENE	13	mg/kg	SOIL/SOIL TO GROUNDWATER
BENZENE	0.08	mg/kg	SOIL TO GROUNDWATER
BENZO(A)ANTHRACENE	26	mg/kg	SOIL
BENZO(A)PYRENE	2.6	mg/kg	SOIL
BENZO(B)FLUORANTHENE	19	mg/kg	SOIL/SOIL TO GROUNDWATER
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TPH GRO	150	mg/kg	SOIL TO GROUNDWATER
MTBE	0.09	mg/kg	SOIL TO GROUNDWATER
NAPHTHALENE	3.52	mg/kg	SOIL TO GROUNDWATER
PYRIDINE	0.05	mg/kg	SOIL TO GROUNDWATER

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CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-112C_SoilHCResults_16-20.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 16-20' SAMPLING INTERVAL SOUTHERN AREA

MWH

FIGURE
48

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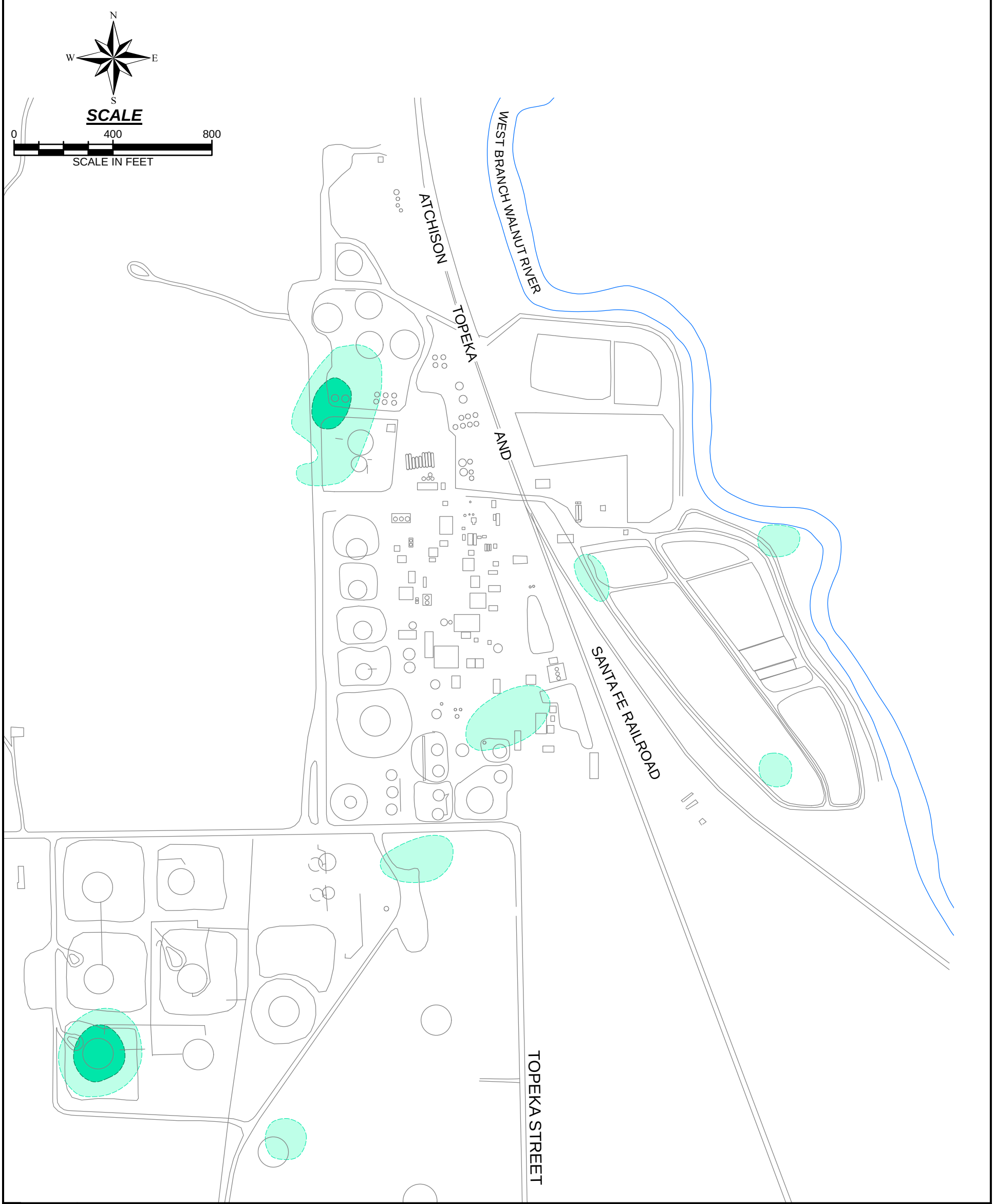

LEGEND:

SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

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TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 20-24' SAMPLING INTERVAL NORTHERN AREA

FIGURE
49

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

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PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-113C_SoilHCResults_20-24.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

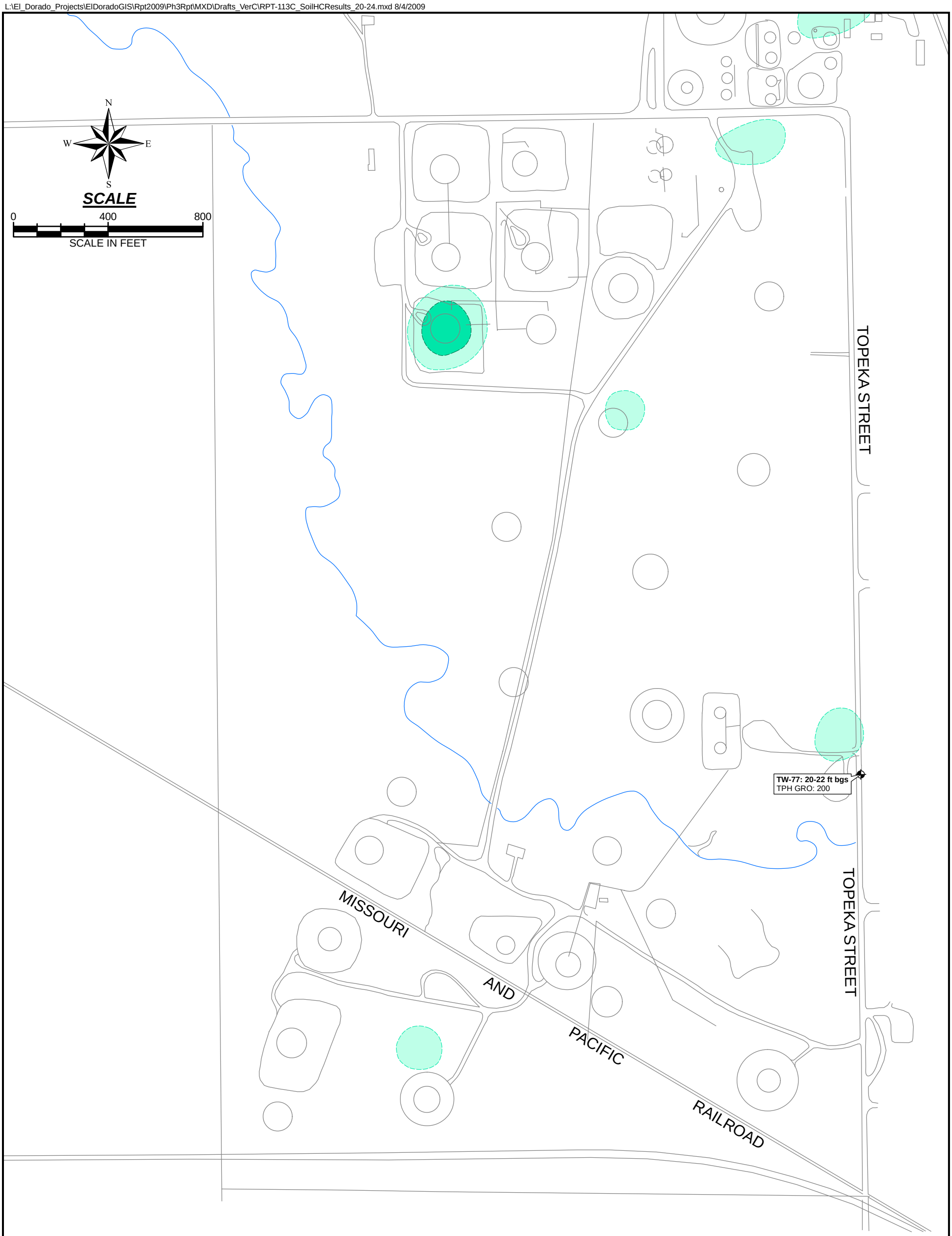
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

MWH

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 20-24' SAMPLING INTERVAL NORTHERN AREA

FIGURE
49

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-113C_SoilHCResults_20-24.mxd 8/4/2009



TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 20-24' SAMPLING INTERVAL SOUTHERN AREA

FIGURE
50

LEGEND:

SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

- MAXIMUM PID RESULT <100 PPMV
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PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-113C_SoilHCResults_20-24.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

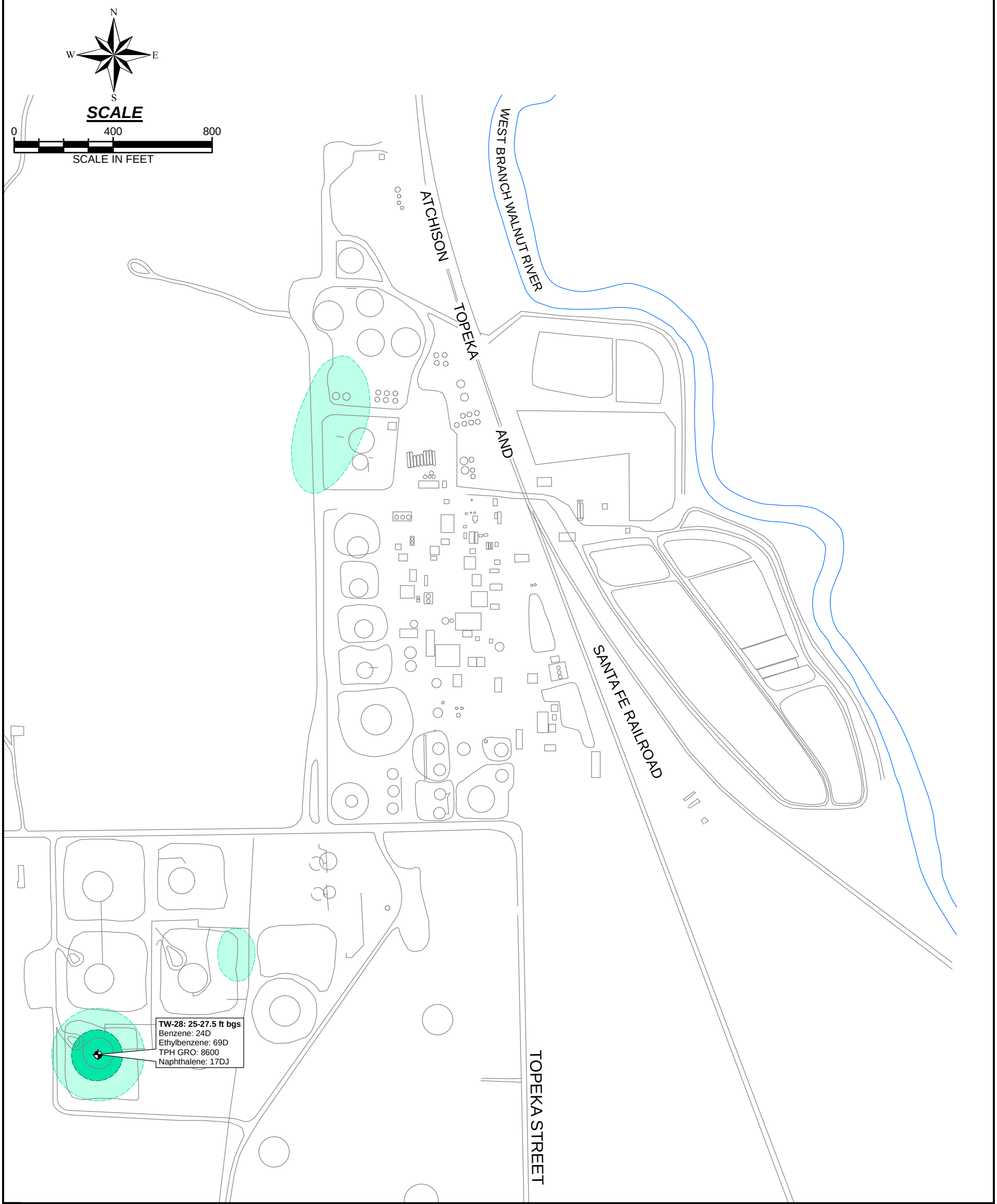
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 20-24' SAMPLING INTERVAL SOUTHERN AREA

MWH

FIGURE
50

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-114C_SoilHCResults_24-28.mxd 8/4/2009



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SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

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TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 24-28' SAMPLING INTERVAL NORTHERN AREA

FIGURE
51

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

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PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-114C_SoilHCResults_24-28.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

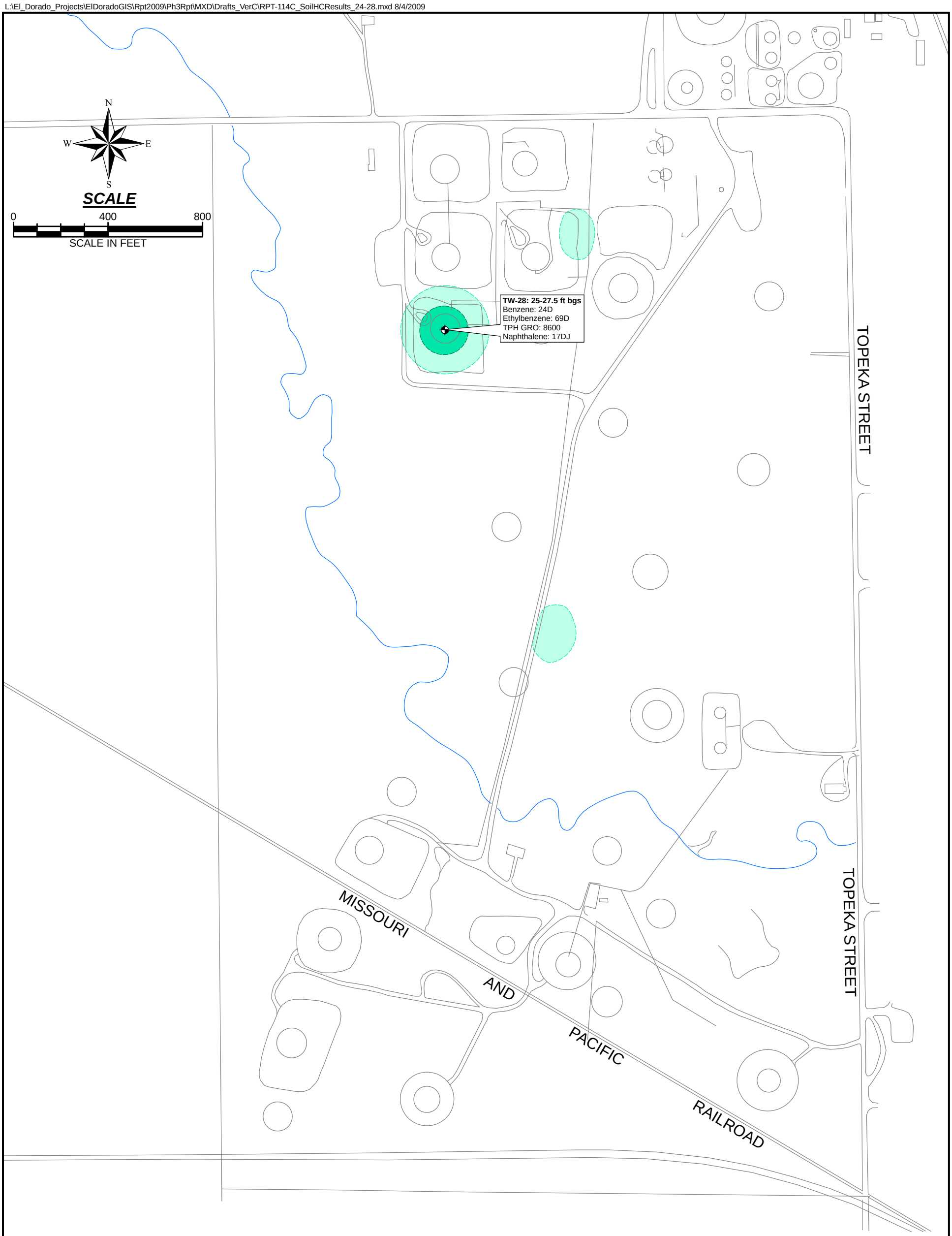
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 24-28' SAMPLING INTERVAL NORTHERN AREA

MWH

FIGURE
51

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-114C_SoilHCResults_24-28.mxd 8/4/2009



TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 24-28' SAMPLING INTERVAL SOUTHERN AREA

FIGURE
52

LEGEND:

SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SOIL HEADSPACE GAS CONCENTRATIONS (MEASURED IN THE FIELD WITH A PHOTOIONIZATION DETECTOR)

- MAXIMUM PID RESULT <100 PPMV
- MAXIMUM PID RESULT 100 - 1000 PPMV
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PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-114C_SoilHCResults_24-28.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 24-28' SAMPLING INTERVAL SOUTHERN AREA

MWH

FIGURE
52

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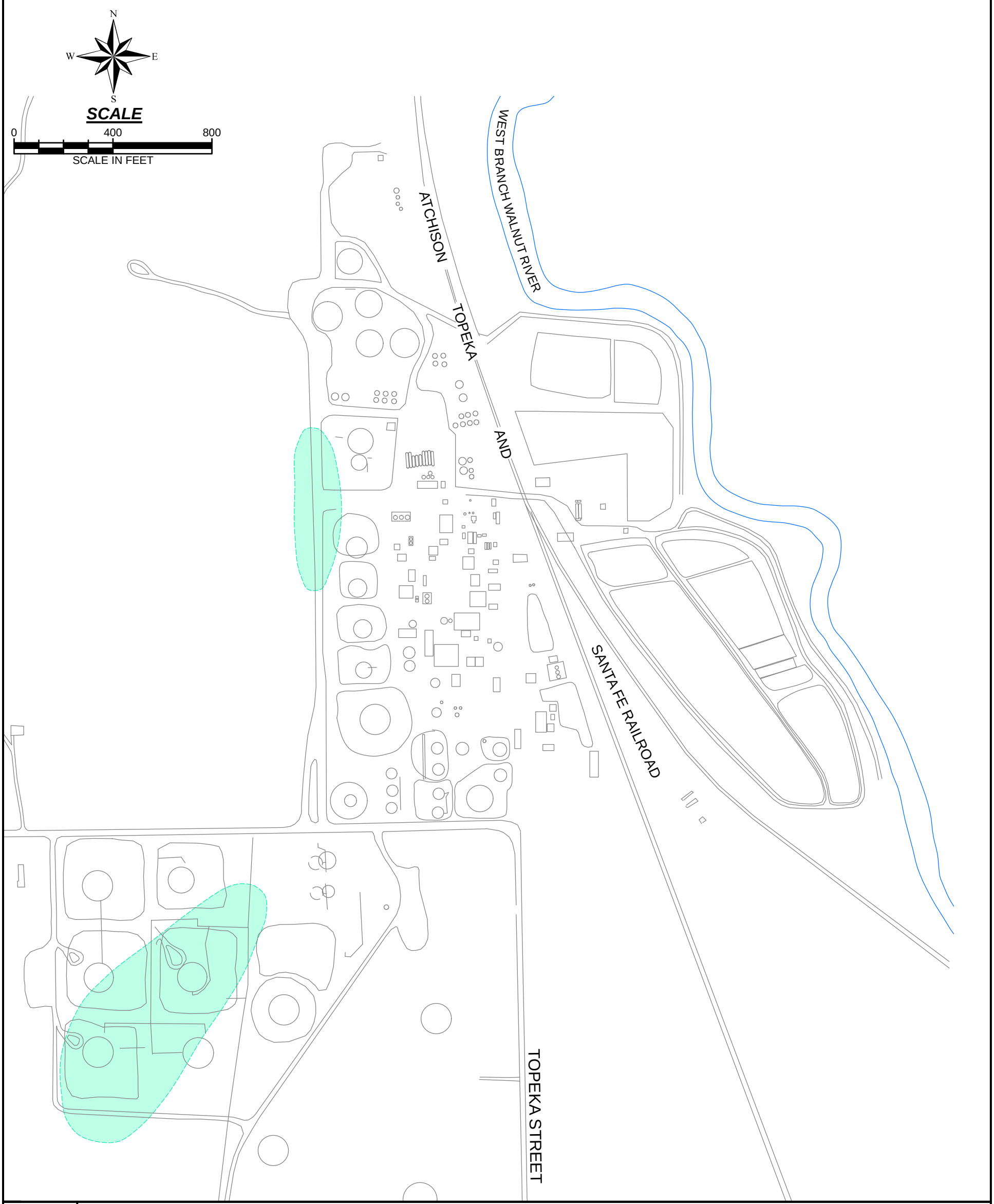

LEGEND:

SOIL HEADSPACE GAS CONCENTRATIONS

- MAXIMUM PID RESULT <100 PPMV
- MAXIMUM PID RESULT 100 - 1000 PPMV
- MAXIMUM PID RESULT >1000 PPMV

NOTES:
NO SOIL SAMPLES WERE COLLECTED FOR LABORATORY ANALYSIS FROM THE 28-32 FEET BELOW GROUND SURFACE INTERVAL.

KANSAS TIER 2 RISK-BASED STANDARDS FOR NON-RESIDENTIAL (INDUSTRIAL) PATHWAYS:

ANALYTE	LEVEL	UNITS	PATHWAY(S)
2,4-DINITROPHENOL	2.1	mg/kg	SOIL TO GROUNDWATER
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TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 28-32' SAMPLING INTERVAL NORTHERN AREA

FIGURE
53

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PROJECT MANAGER	D. Mick	07/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-115C_SoilHCResults_28-32.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

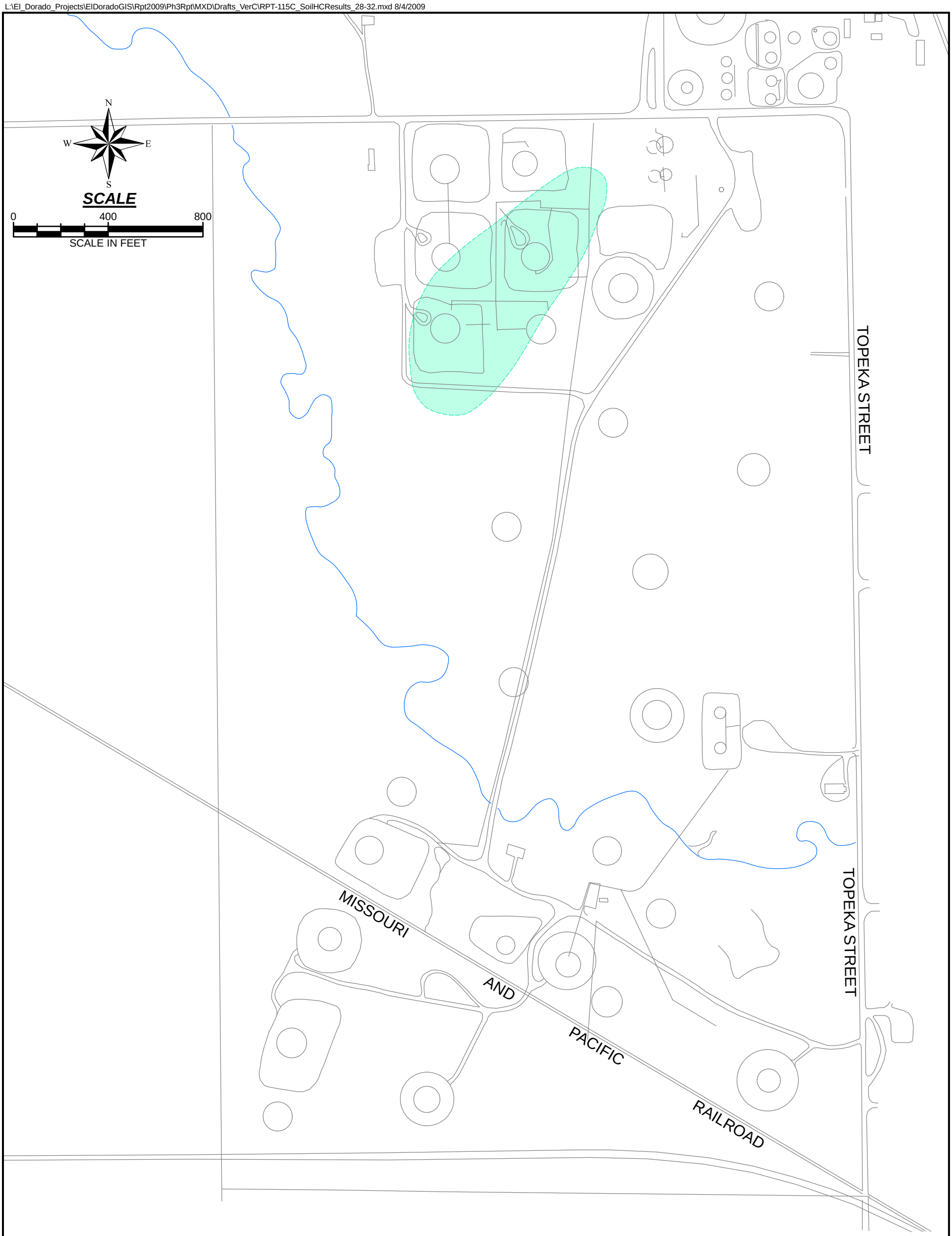
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 28-32' SAMPLING INTERVAL NORTHERN AREA

MWH

FIGURE
53

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-115C_SoilHCResults_28-32.mxd 8/4/2009



TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 28-32' SAMPLING INTERVAL SOUTHERN AREA

FIGURE
54

LEGEND:

SOIL HEADSPACE GAS CONCENTRATIONS

- MAXIMUM PID RESULT <100 PPMV
- MAXIMUM PID RESULT 100 - 1000 PPMV
- MAXIMUM PID RESULT >1000 PPMV

NOTES:
NO SOIL SAMPLES WERE COLLECTED FOR LABORATORY ANALYSIS FROM THE 28-32 FEET BELOW GROUND SURFACE INTERVAL.

KANSAS TIER 2 RISK-BASED STANDARDS FOR NON-RESIDENTIAL (INDUSTRIAL) PATHWAYS:

ANALYTE	LEVEL	UNITS	PATHWAY(S)
2,4-DINITROPHENOL	2.1	mg/kg	SOIL TO GROUNDWATER
2-METHYLNAPHTHALENE	45	mg/kg	SOIL TO GROUNDWATER
ANTHRACENE	13	mg/kg	SOIL/SOIL TO GROUNDWATER
BENZENE	0.08	mg/kg	SOIL TO GROUNDWATER
BENZO(A)ANTHRACENE	26	mg/kg	SOIL
BENZO(A)PYRENE	2.6	mg/kg	SOIL
BENZO(B)FLUORANTHENE	19	mg/kg	SOIL/SOIL TO GROUNDWATER
CHLOROFORM	0.96	mg/kg	SOIL TO GROUNDWATER
CHRYSENE	6.4	mg/kg	SOIL/SOIL TO GROUNDWATER
DIBENZ(A,H)ANTHRACENE	2.6	mg/kg	SOIL
TPH DRO	15000	mg/kg	SOIL TO GROUNDWATER
ETHYLBENZENE	55	mg/kg	SOIL TO GROUNDWATER
TPH GRO	150	mg/kg	SOIL TO GROUNDWATER
MTBE	0.09	mg/kg	SOIL TO GROUNDWATER
NAPHTHALENE	3.52	mg/kg	SOIL TO GROUNDWATER
PYRIDINE	0.05	mg/kg	SOIL TO GROUNDWATER

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	07/09
CHECKED BY	R. Hultgren	07/09
APPROVED BY	W. Pickens	07/09
PROJECT MANAGER	D. Mick	07/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-115C_SoilHCResults_28-32.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

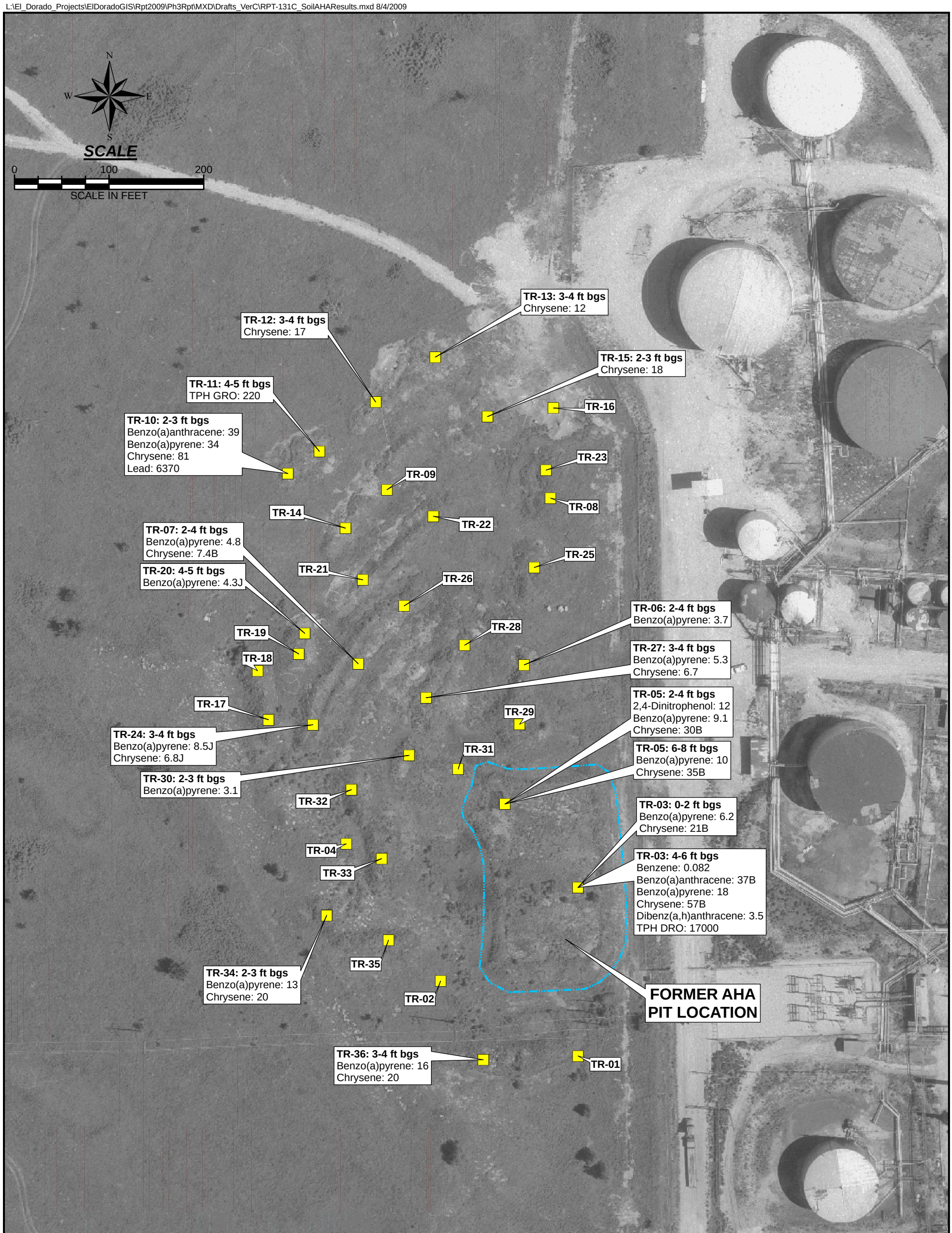
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
SOIL HEADSPACE GAS AND ORGANIC ANALYTICAL DATA, 28-32' SAMPLING INTERVAL SOUTHERN AREA

MWH

FIGURE
54

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-131C_SoilAHAResults.mxd 8/4/2009



TITLE
ASPHALT HANDLING AREA
SOIL SAMPLE DATA MAP

FIGURE
55

LEGEND:

- AHA BACKHOE SAMPLE
- FORMER ASPHALT HANDLING AREA PIT LOCATION

KANSAS TIER 2 RISK-BASED STANDARDS FOR NON-RESIDENTIAL (INDUSTRIAL) PATHWAYS:

ANALYTE	LEVEL	UNITS	PATHWAY(S)
2,4-DINITROPHENOL	2.1	mg/kg	SOIL TO GROUNDWATER
BENZENE	0.08	mg/kg	SOIL TO GROUNDWATER
BENZO(A)ANTHRACENE	26	mg/kg	SOIL
BENZO(A)PYRENE	2.6	mg/kg	SOIL
CHRYSENE	6.4	mg/kg	SOIL/SOIL TO GROUNDWATER
DIBENZ(A,H)ANTHRACENE	2.6	mg/kg	SOIL
TPH DRO	15000	mg/kg	SOIL TO GROUNDWATER
TPH GRO	150	mg/kg	SOIL TO GROUNDWATER
LEAD	1000	mg/kg	SOIL

NOTES:
SAMPLING LOCATIONS LABELED WITH NAME, SAMPLING DEPTH, ANALYTE, AND CONCENTRATION IN SOIL (mg/kg). DATA ARE ONLY SHOWN WHERE RESULTS EXCEEDED THE CORRESPONDING SCREENING LEVEL FOR AT LEAST ONE OF THE ANALYTES LISTED ON THE RIGHT.
DATA ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA ARE NOT SHOWN ON THIS FIGURE.
ft bgs = FEET BELOW GROUND SURFACE

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	C. Pappas	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-131C_SoilAHAResults.mxd	

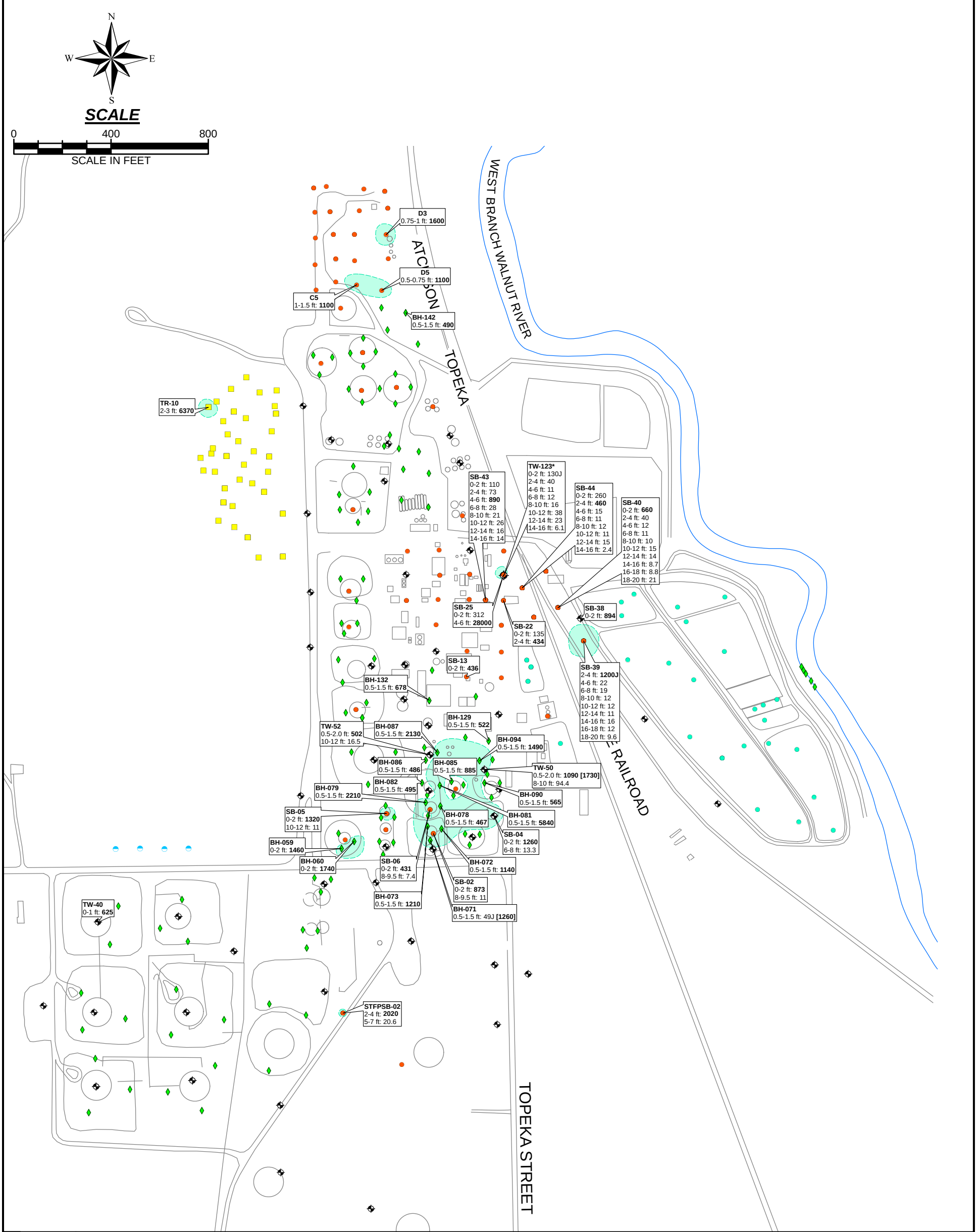
elpaso

PROJECT LOCATION: EL DORADO, KANSAS
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.
TITLE: ASHPALT HANDLING AREA SOIL SAMPLE DATA MAP

MWH

FIGURE: 55

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-054C_SoilLead.mxd 8/31/2009



TITLE

LEAD IN SOIL MAP
NORTHERN AREA

LEGEND:

- BACKGROUND SOIL SAMPLE
- AHA BACKHOE SAMPLE
- SHALLOW SOIL SAMPLE
- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)

SHADED REGIONS

SOIL LEAD CONCENTRATION >= 1,000 mg/kg
(NON-RESIDENTIAL SCREENING LEVEL)

NOTES:

SB-04
0-2 ft: **1260**
6-8 ft: 13.3

LEAD IN SOIL RESULTS
KANSAS TIER 2 RISK-BASED STANDARD FOR RESIDENTIAL SOIL PATHWAY FOR LEAD = 400 mg/kg.
KANSAS TIER 2 RISK-BASED STANDARD FOR NON-RESIDENTIAL SOIL PATHWAY FOR LEAD = 1,000 mg/kg.
FOR SAMPLING LOCATIONS WITH AT LEAST ONE SAMPLE RESULT EXCEEDING THE RESIDENTIAL SCREENING LEVEL, LOCATIONS LABELED WITH NAME, SAMPLING DEPTH INTERVAL (FEET BGS) AND LEAD CONCENTRATION IN SOIL (mg/kg).

* ALL LEAD IN SOIL RESULTS FOR SHALLOW MONITORING WELL TW-123 WERE BELOW RESIDENTIAL AND NON-RESIDENTIAL STANDARDS. RESULTS ARE SHOWN FOR COMPARISON BETWEEN TW-123 AND SOIL BORING SB-25.

SAMPLING LOCATIONS WITHOUT ANY EXCEEDANCES ARE NOT LABELED.

RESULTS EXCEEDING RESIDENTIAL SCREENING LEVEL ARE SHOWN IN **BOLDFACE** TYPE.
J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
DUPLICATE SAMPLE RESULTS SHOWN IN BRACKETS [ ].

FIGURE
56

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	07/09
CHECKED BY	R. Hultgren	07/09
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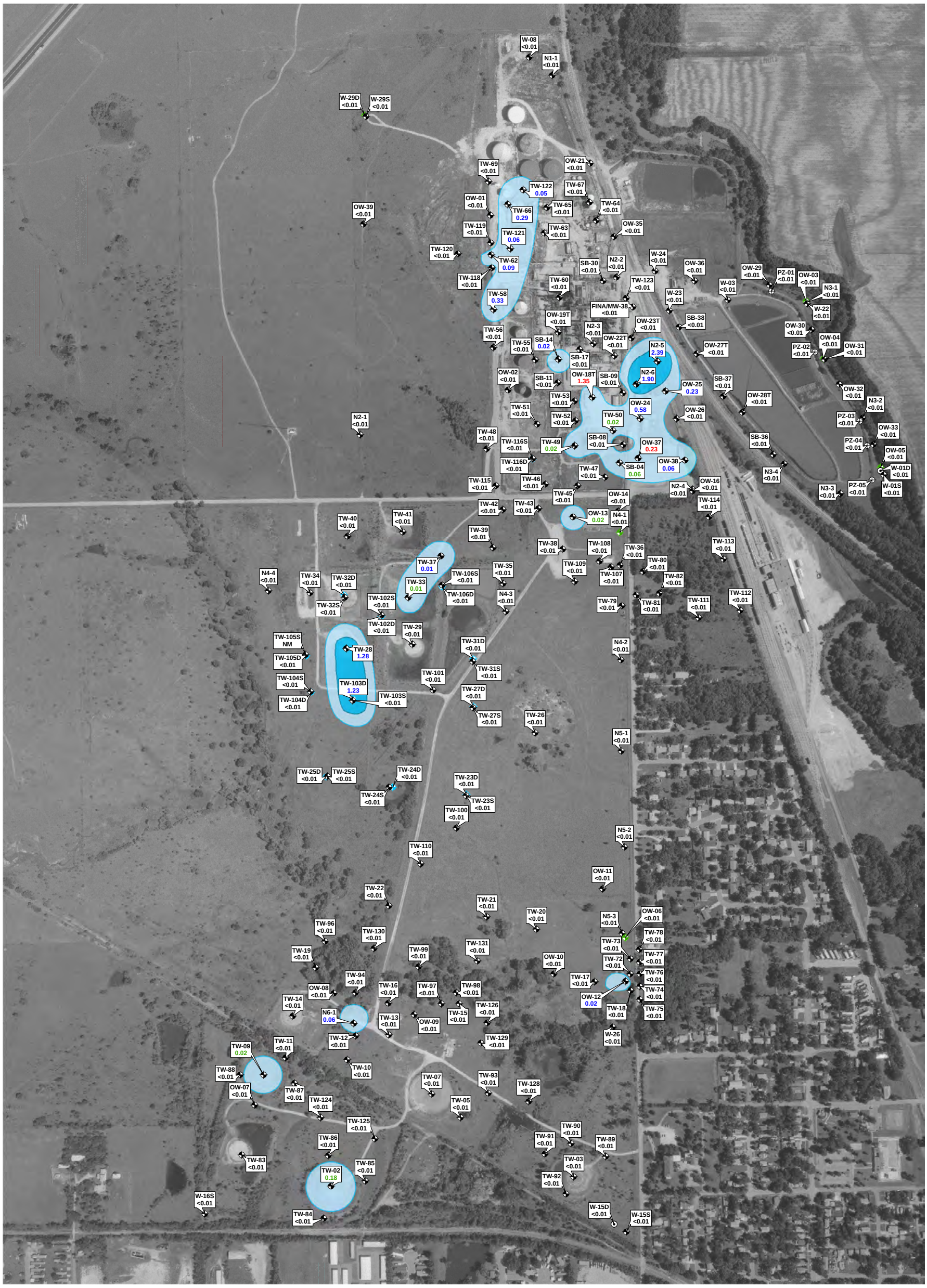
PROJECT MANAGER	D. Mick	07/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-054C_SoilLead.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.
TITLE: LEAD IN SOIL MAP NORTHERN AREA
FIGURE: 56

MWH

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-123C_LNAPLHistoric.mxd 9/17/2009



LEGEND:

- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- IN-TRENCH PIEZOMETER

MEASURABLE LNAPL THICKNESS:

- LNAPL THICKNESS <0.01 FEET
- LNAPL THICKNESS 0.01-1 FEET
- LNAPL THICKNESS >1-5 FEET

N
W E
S

SCALE

0 600 1,200

SCALE IN FEET

NOTES:
SYMBOLS LABELED WITH WELL NAME AND HISTORIC APPARENT LNAPL THICKNESS IN WELL (FEET).
HISTORIC DATA RANGES BETWEEN DECEMBER 5, 2005 AND FEBRUARY 11, 2009.
LNAPL THICKNESSES COLOR-CODED BY SAMPLING YEAR: 2005, 2008, AND 2009.
<0.01 = WELL WITHOUT MEASURED LNAPL THICKNESS (SHOWN IN BLACK FOR ALL YEARS).
NM = NOT MEASURED TRACE = TRACE OF LNAPL DETECTED

TITLE
LNAPL ISOPACH MAP
HISTORICAL

FIGURE
57

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	09/09
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APPROVED BY	W. Pickens	09/09
PROJECT MANAGER	D. Mick	09/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-123C_LNAPLHistoric.mxd	

elpaso

PROJECT LOCATION
EL DORADO, KANSAS

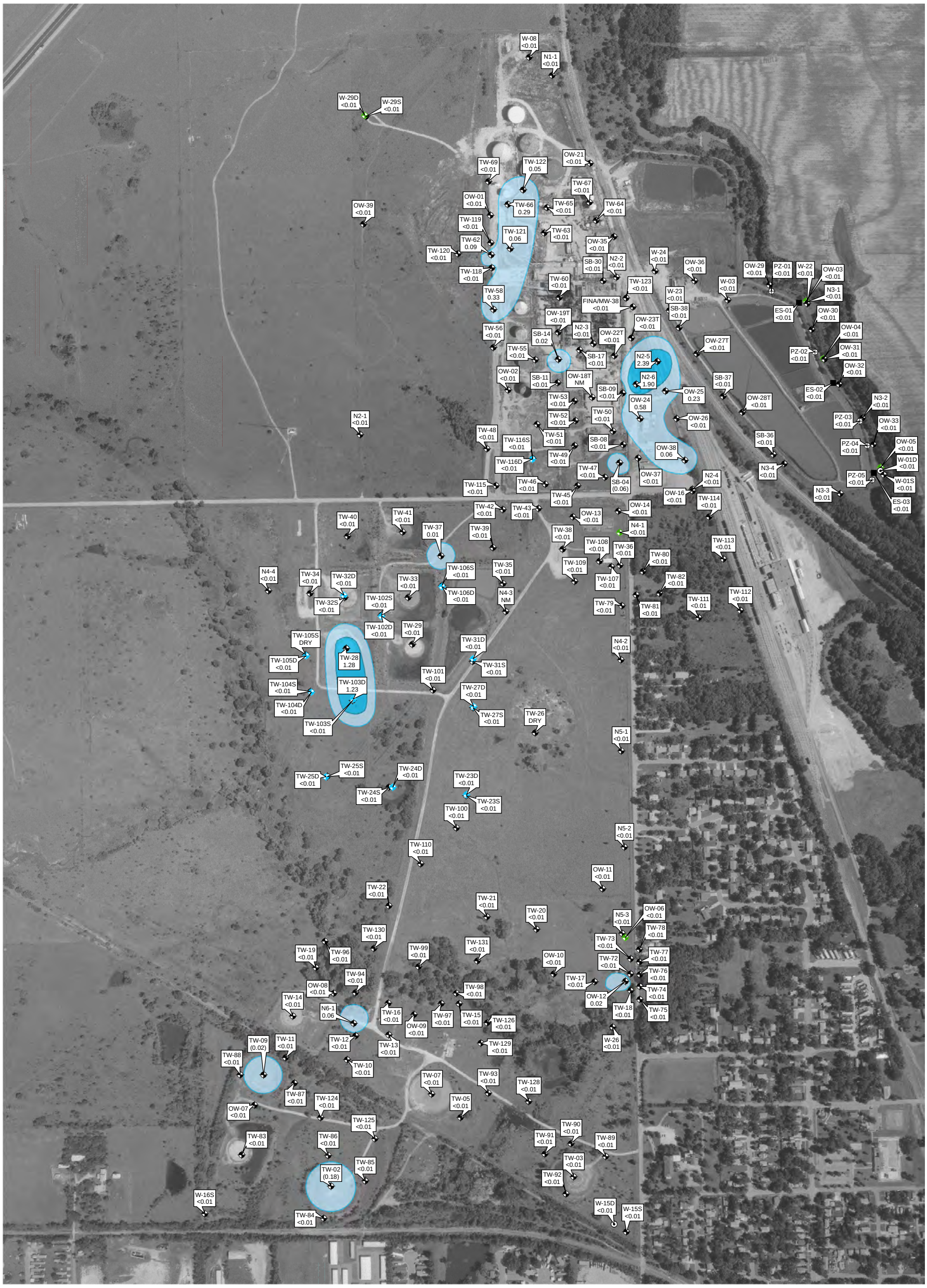
PROJECT
EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE
LNAPL ISOPACH MAP
HISTORICAL

MWH

FIGURE
57

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-020C_LNAPLFeb09.mxd 8/4/2009



TITLE

LNAPL ISOPACH MAP
FEBRUARY 2009

FIGURE

58

LEGEND:

- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- EXTRACTION SUMP
- IN-TRENCH PIEZOMETER

MEASURABLE LNAPL THICKNESS:

- LNAPL THICKNESS <0.01 FEET
- LNAPL THICKNESS 0.01-1 FEET
- LNAPL THICKNESS >1-5 FEET

N
W E
S

SCALE

0 600 1,200

SCALE IN FEET

NOTES:
SYMBOLS LABELED WITH WELL NAME AND APPARENT LNAPL THICKNESS IN WELL (FEET).
MONITORING WELLS GAUGED FEBRUARY 10, 11, AND 12, 2009.
<0.01 = WELL WITHOUT MEASURED LNAPL THICKNESS
NM = NOT MEASURED
( ) = WELLS SB-04, TW-02, AND TW-09 WERE NOT GAUGED DUE TO PONDING. LNAPL THICKNESSES FROM FEBRUARY 14, 2008 SHOWN.

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	R. Hultgren	08/09
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APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-020C_LNAPLFeb09.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

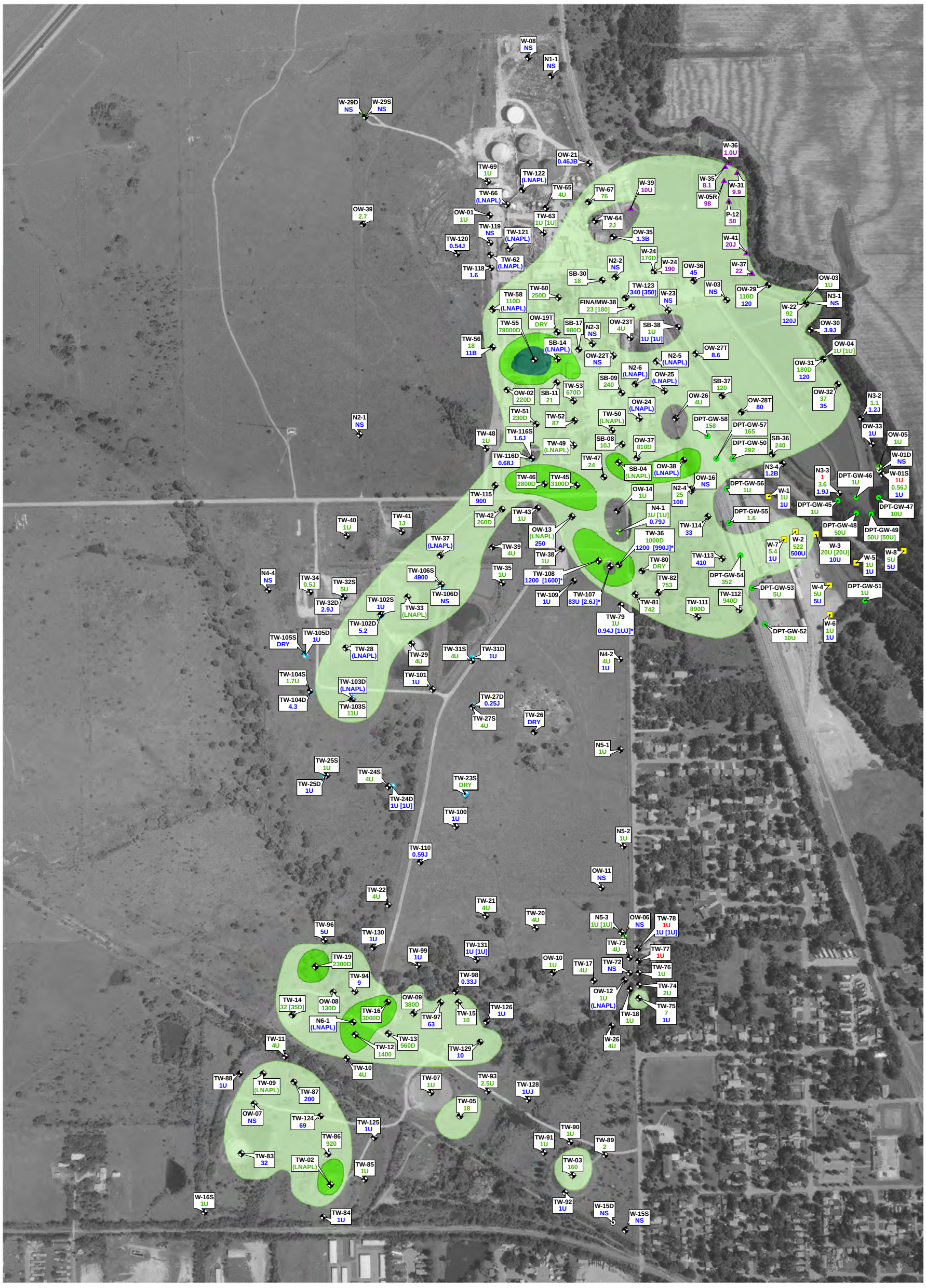
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE: LNAPL ISOPACH MAP FEBRUARY 2009

MWH

FIGURE: 58

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-126C_GWBenzeneFeb09.mxd 8/14/2009



TITLE

BENZENE IN GROUNDWATER MAP - FEBRUARY 2009

FIGURE

59

LEGEND:

- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- UTC GEOPROBE BORING
- UTC MONITORING WELL
- PESTER MONITORING WELL

NOTES:
WELLS LABELED WITH NAME AND BENZENE CONCENTRATION IN GROUNDWATER (ug/L).
RESULTS COLOR-CODED BY SAMPLING YEAR: 2006, 2007, 2008, AND 2009.
[ ] = DUPLICATE SAMPLE RESULTS. [ ]* = RE-SAMPLED FOR LOWER DETECTION LIMIT. NS = NOT SAMPLED. N/A = NOT ANALYZED.
(LNAPL) = WELL NOT SAMPLED DUE TO PRESENCE OF LNAPL IN 2008 OR 2009. DRY = DRY MONITORING WELL NOT SAMPLED.
1U = BENZENE NOT DETECTED AT REPORTING LIMIT SHOWN. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
KANSAS TIER 2 RISK-BASED STANDARD FOR RESIDENTIAL GROUNDWATER PATHWAY FOR BENZENE = 5 ug/L.
UTC DATA SOURCE: Groundwater Monitoring Report, Union Tank Car, El Dorado, Kansas, July 2008 (The Forrester Group); and March 2009 (Foth).
PESTER DATA SOURCE: Fourth Quarter 2006 Groundwater Monitoring Report, Pester Burn Pond, El Dorado, Kansas, December 2006 (RMT, Inc.).

SHADED REGIONS:

- BENZENE <5 ug/L
- BENZENE 5 - 1,000 ug/L
- BENZENE >1,000 - 10,000 ug/L
- BENZENE >10,000 ug/L

N
W E
S

SCALE

0 600 1,200

SCALE IN FEET

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	C. Pappas	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-126C_GWBenzeneFeb09.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

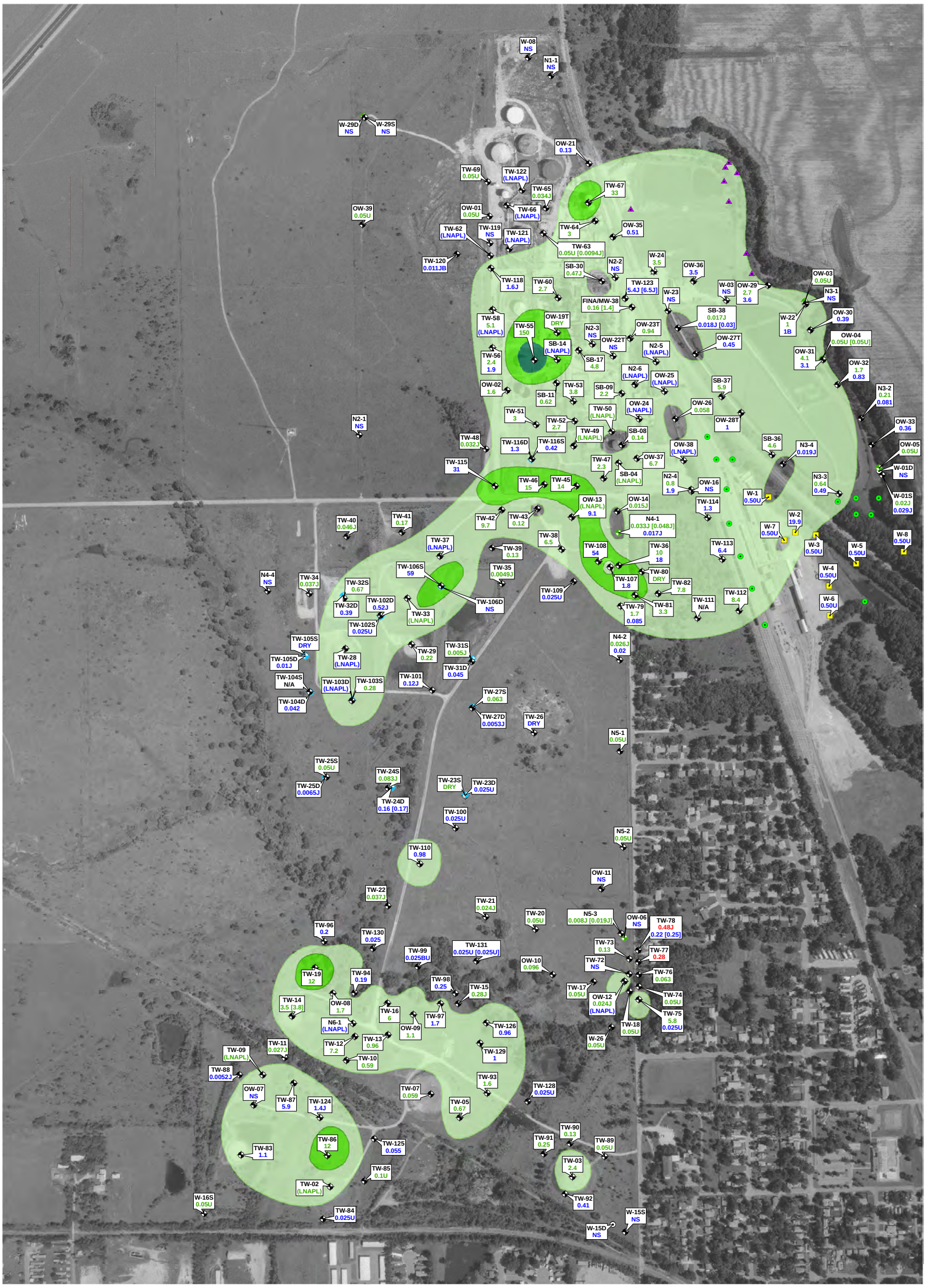
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE: BENZENE IN GROUNDWATER MAP - FEBRUARY 2009

MWH

FIGURE: 59

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-127C_GWGROFeb09.mxd 8/14/2009



LEGEND:

- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- UTC GEOPROBE BORING
- UTC MONITORING WELL
- PESTER MONITORING WELL - NOT ANALYZED FOR TPH GRO

NOTES:
WELLS LABELED WITH NAME AND TPH GRO CONCENTRATION IN GROUNDWATER (mg/L).
RESULTS COLOR-CODED BY SAMPLING YEAR: 2006, 2007, 2008, AND 2009.
[ ] = DUPLICATE SAMPLE RESULTS. [ ]* = RE-SAMPLED FOR LOWER DETECTION LIMIT. NS = NOT SAMPLED. N/A = NOT ANALYZED.
(LNAPL) = WELL NOT SAMPLED DUE TO PRESENCE OF LNAPL IN 2008 OR 2009. DRY = DRY MONITORING WELL NOT SAMPLED.
1U = TPH GRO NOT DETECTED AT REPORTING LIMIT SHOWN. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
KANSAS TIER 2 RISK-BASED STANDARD FOR RESIDENTIAL GROUNDWATER PATHWAY FOR TPH GRO = 0.5 mg/L.
UTC DATA SOURCE: Groundwater Monitoring Report, Union Tank Car, El Dorado, Kansas, July 2008 (The Forrester Group); and March 2009 (Foth).
PESTER DATA SOURCE: Fourth Quarter 2006 Groundwater Monitoring Report, Pester Burn Pond, El Dorado, Kansas, December 2006 (RMT, Inc.).

SHADED REGIONS:

- TPH GRO <0.5 mg/L
- TPH GRO 0.5 - 10 mg/L
- TPH GRO 10 - 100 mg/L
- TPH GRO >100 mg/L

N
W E
S

SCALE

0 600 1,200

SCALE IN FEET

TITLE
TPH GRO IN GROUNDWATER MAP - FEBRUARY 2009

FIGURE
60

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	C. Pappas	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-127C_GWGROFeb09.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

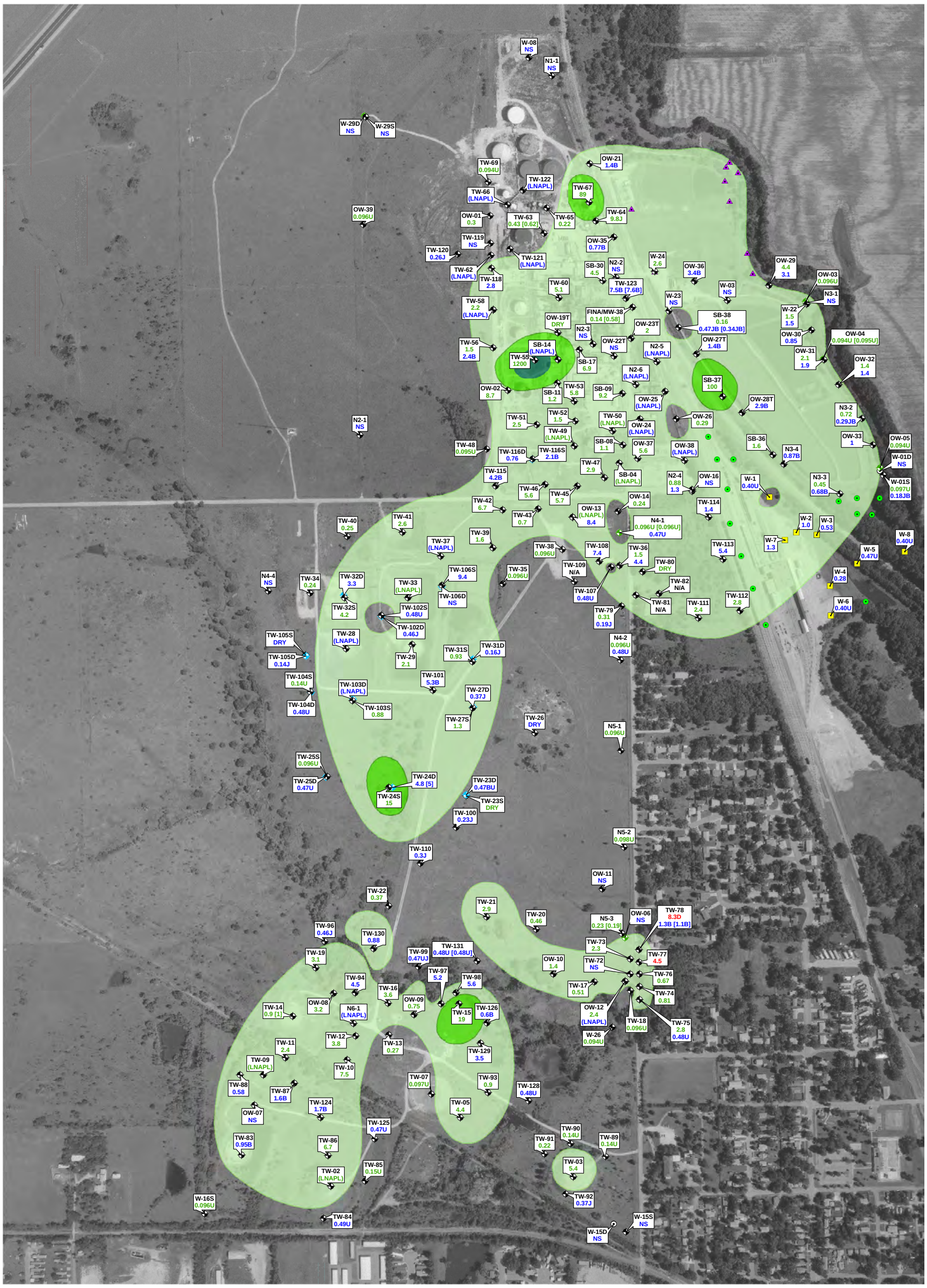
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

MWH

TITLE: TPH GRO IN GROUNDWATER MAP - FEBRUARY 2009

FIGURE: 60

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-128C_GWDROFeb09.mxd 8/13/2009



LEGEND:

- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- UTC GEOPROBE BORING - NOT ANALYZED FOR TPH DRO
- UTC MONITORING WELL - NOT ANALYZED FOR TPH DRO
- PESTER MONITORING WELL - NOT ANALYZED FOR TPH DRO

NOTES:
WELLS LABELED WITH NAME AND TPH DRO CONCENTRATION IN GROUNDWATER (mg/L).
RESULTS COLOR-CODED BY SAMPLING YEAR: 2006, 2007, 2008, AND 2009.
[ ] = DUPLICATE SAMPLE RESULTS. [ ]* = RE-SAMPLED FOR LOWER DETECTION LIMIT. NS = NOT SAMPLED. N/A = NOT ANALYZED.
(LNAPL) = WELL NOT SAMPLED DUE TO PRESENCE OF LNAPL IN 2008 OR 2009. DRY = DRY MONITORING WELL NOT SAMPLED.
1U = TPH DRO NOT DETECTED AT REPORTING LIMIT SHOWN. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
KANSAS TIER 2 RISK-BASED STANDARD FOR RESIDENTIAL GROUNDWATER PATHWAY FOR TPH DRO = 0.5 mg/L.
UTC DATA SOURCE: Groundwater Monitoring Report, Union Tank Car, El Dorado, Kansas, July 2008 (The Forrester Group); and March 2009 (Foth).
PESTER DATA SOURCE: Fourth Quarter 2006 Groundwater Monitoring Report, Pester Burn Pond, El Dorado, Kansas, December 2006 (RMT, Inc.).

SHADED REGIONS:
- TPH DRO <0.5 mg/L
- TPH DRO 0.5 - 10 mg/L
- TPH DRO 10 - 100 mg/L
- TPH DRO >100 mg/L

N
W E
S

SCALE
0 600 1,200
SCALE IN FEET

TITLE
TPH DRO IN GROUNDWATER MAP - FEBRUARY 2009

FIGURE
61

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

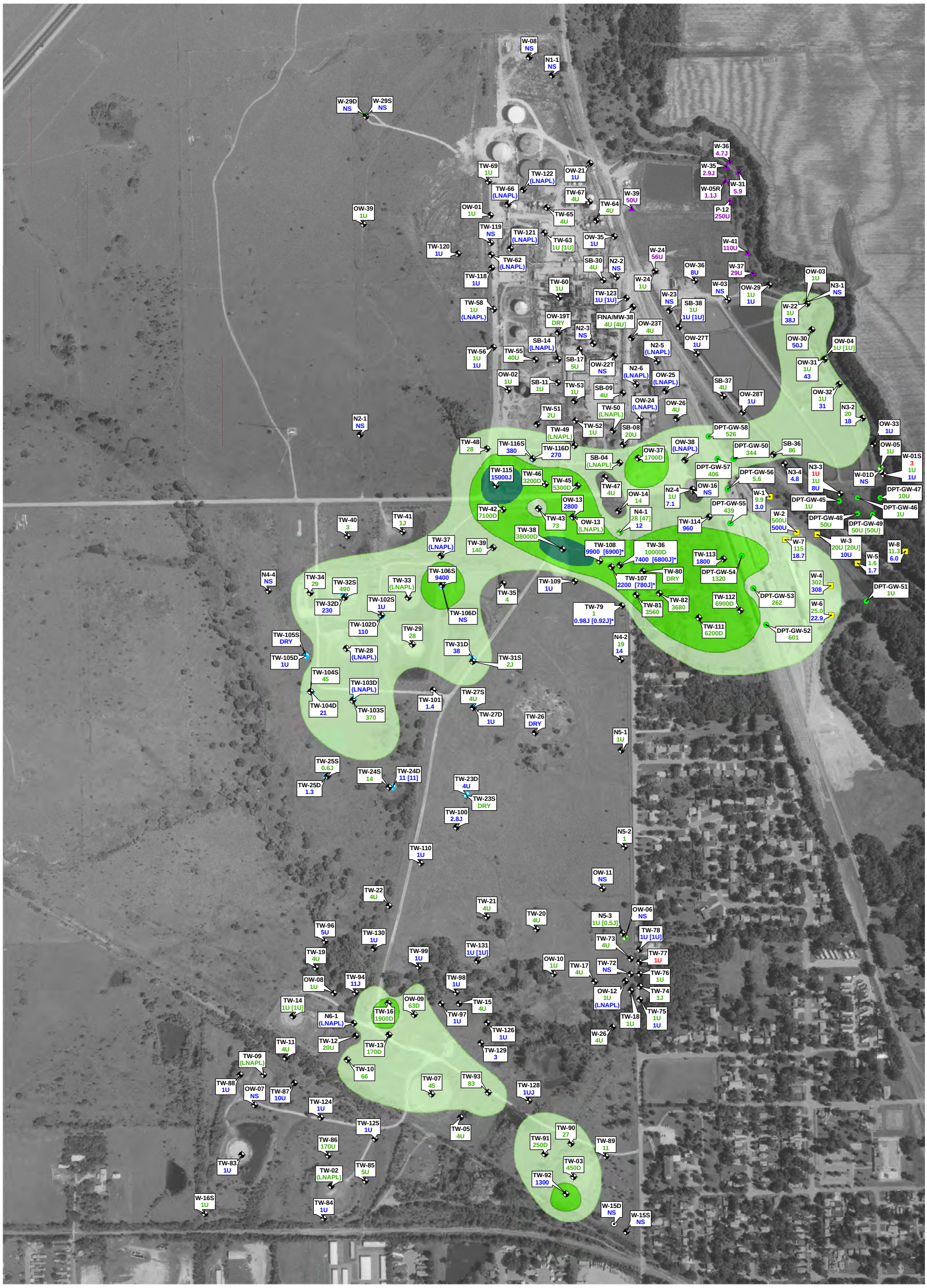
DESIGNED BY	R. Hultgren	07/09
DRAWN BY	C. Pappas	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-128C_GWDROFeb09.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.
TITLE: TPH DRO IN GROUNDWATER MAP - FEBRUARY 2009
FIGURE: 61

MWH

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-129C_GWMTBEFeb09.mxd 8/14/2009



TITLE

MTBE IN GROUNDWATER MAP - FEBRUARY 2009

FIGURE

62

LEGEND:

- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- UTC GEOPROBE BORING
- UTC MONITORING WELL
- PESTER MONITORING WELL

NOTES:
WELLS LABELED WITH NAME AND MTBE CONCENTRATION IN GROUNDWATER (ug/L).
RESULTS COLOR-CODED BY SAMPLING YEAR: 2006, 2007, 2008, AND 2009.
[ ] = DUPLICATE SAMPLE RESULTS. [ ]* = RE-SAMPLED FOR LOWER DETECTION LIMIT. NS = NOT SAMPLED. N/A = NOT ANALYZED.
(LNAPL) = WELL NOT SAMPLED DUE TO PRESENCE OF LNAPL IN 2008 OR 2009. DRY = DRY MONITORING WELL NOT SAMPLED.
1U = MTBE NOT DETECTED AT REPORTING LIMIT SHOWN. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
KANSAS TIER 2 RISK-BASED STANDARD FOR RESIDENTIAL GROUNDWATER PATHWAY FOR MTBE = 20 ug/L.
UTC DATA SOURCE: Groundwater Monitoring Report, Union Tank Car, El Dorado, Kansas, July 2008 (The Forrester Group); and March 2009 (Foth).
PESTER DATA SOURCE: Fourth Quarter 2006 Groundwater Monitoring Report, Pester Burn Pond, El Dorado, Kansas, December 2006 (RMT, Inc.).

SHADED REGIONS:

- MTBE <20 ug/L
- MTBE 20 - 1,000 ug/L
- MTBE >1,000 - 10,000 ug/L
- MTBE >10,000 ug/L

N
W E
S

SCALE

0 600 1,200

SCALE IN FEET

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	C. Pappas	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-129C_GWMTBEFeb09.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

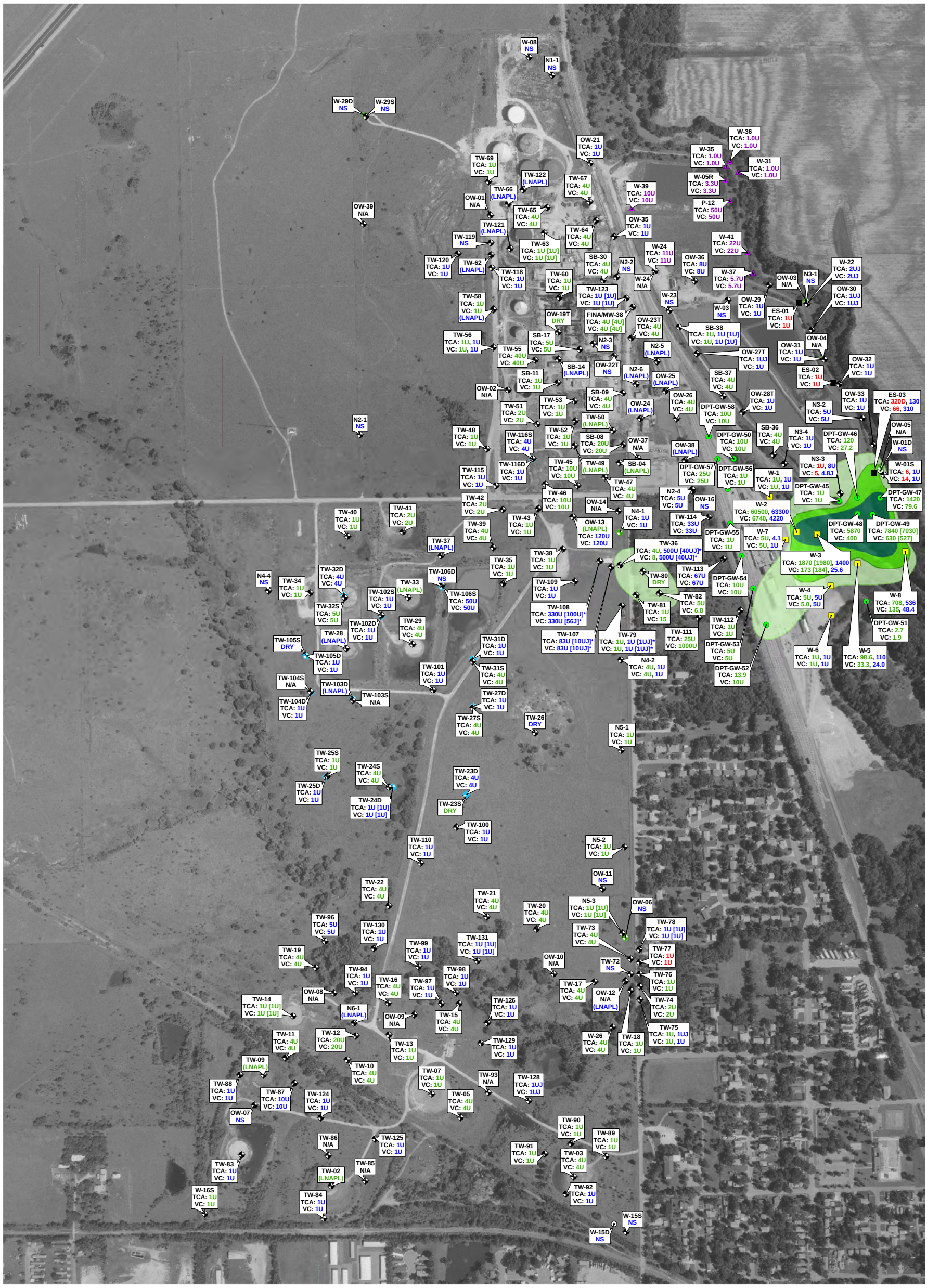
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

MWH

TITLE: MTBE IN GROUNDWATER MAP - FEBRUARY 2009

FIGURE: 62

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-125C_GWClSolventsFeb09.mxd 8/14/2009



TITLE

1,1,2-TCA AND VINYL CHLORIDE IN GROUNDWATER MAP - FEBRUARY 2009

FIGURE

63

LEGEND:

- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- EXTRACTION SUMP
- UTC GEOPROBE BORING
- UTC MONITORING WELL
- PESTER MONITORING WELL

NOTES:
WELLS LABELED WITH NAME AND 1,1,2-TCA AND VINYL CHLORIDE (VC) CONCENTRATIONS IN GROUNDWATER (ug/L).
RESULTS COLOR-CODED BY SAMPLING YEAR: 2006, 2007, 2008, AND 2009.
[ ] = DUPLICATE SAMPLE RESULTS. [ ]* = RE-SAMPLED FOR LOWER DETECTION LIMIT. NS = NOT SAMPLED. N/A = NOT ANALYZED.
(LNAPL) = WELL NOT SAMPLED DUE TO PRESENCE OF LNAPL IN 2008 OR 2009. DRY = DRY MONITORING WELL NOT SAMPLED.
1U = 1,1,2-TCA OR VC NOT DETECTED AT REPORTING LIMIT SHOWN. J = DATA ARE ESTIMATED DUE TO ASSOCIATED QUALITY CONTROL DATA.
KANSAS TIER 2 RISK-BASED STANDARD FOR RESIDENTIAL GROUNDWATER PATHWAY FOR 1,1,2-TCA = 5 ug/L; VC = 2 ug/L.
UTC DATA SOURCE: Groundwater Monitoring Report, Union Tank Car, El Dorado, Kansas, July 2008 (The Forrester Group); and March 2009 (Foth).
PESTER DATA SOURCE: Fourth Quarter 2006 Groundwater Monitoring Report, Pester Burn Pond, El Dorado, Kansas, December 2006 (RMT, Inc.).

SHADED REGIONS:

- 1,1,2-TCA < 5 ug/L; VC < 2 ug/L
- 1,1,2-TCA 5 - 100 ug/L; VC 2 - 100 ug/L
- 1,1,2-TCA and/or VC >100 - 1,000 ug/L
- 1,1,2-TCA and/or VC >1,000 ug/L

N
W E
S

SCALE

0 600 1,200

SCALE IN FEET

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	07/09
DRAWN BY	C. Pappas	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-125C_GWClSolventsFeb09.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

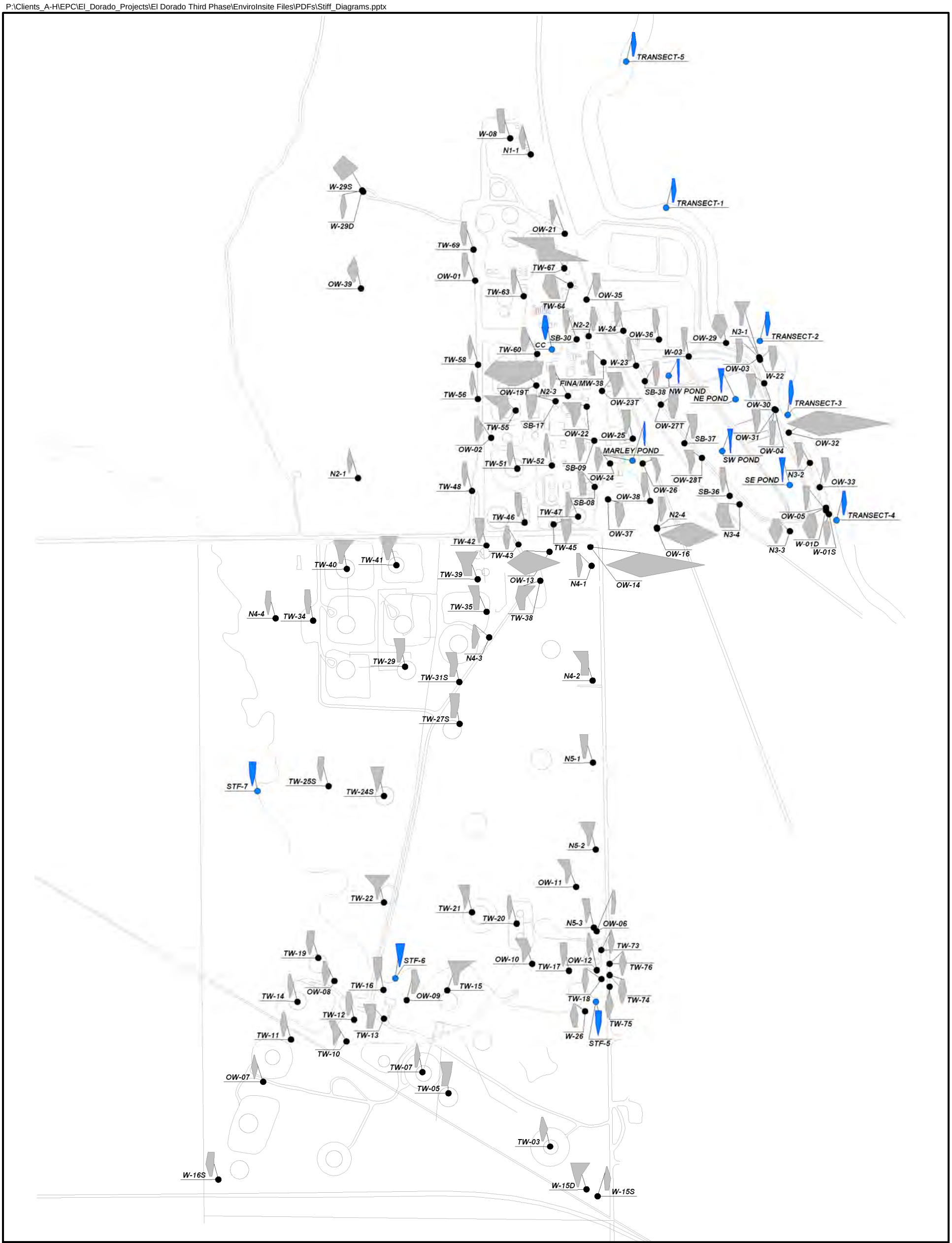
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

MWH

TITLE: 1,1,2-TCA AND VINYL CHLORIDE IN GROUNDWATER MAP - FEBRUARY 2009

FIGURE: 63

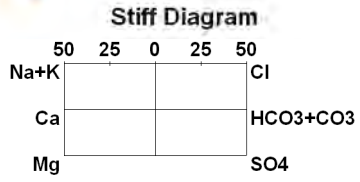
P:\Clients_A-H\EPC\El_Dorado_Projects\El Dorado Third Phase\EnviroInsite Files\PDFs\Stiff_Diagrams.pptx



LEGEND:

- Groundwater Wells
- Surface Water

Stiff Diagram



NOTES:
DATA FOR FINA/MW-38, N4-2, N5-1, N5-2, N5-3, OW-23T, OW-26, W-16S, W-26, ALL OF THE TW AND SB, WELLS AND WBWR COLLECTED DURING THE THIRD PHASE. DATA FOR REMAINING N AND W WELLS COLLECTED IN 2004. DATA FOR REMAINING SURFACE WATER COLLECTED IN 2005.

N
W E
S

SCALE

0 250 500 750 1000 feet

TITLE: STIFF DIAGRAMS

FIGURE: 64

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

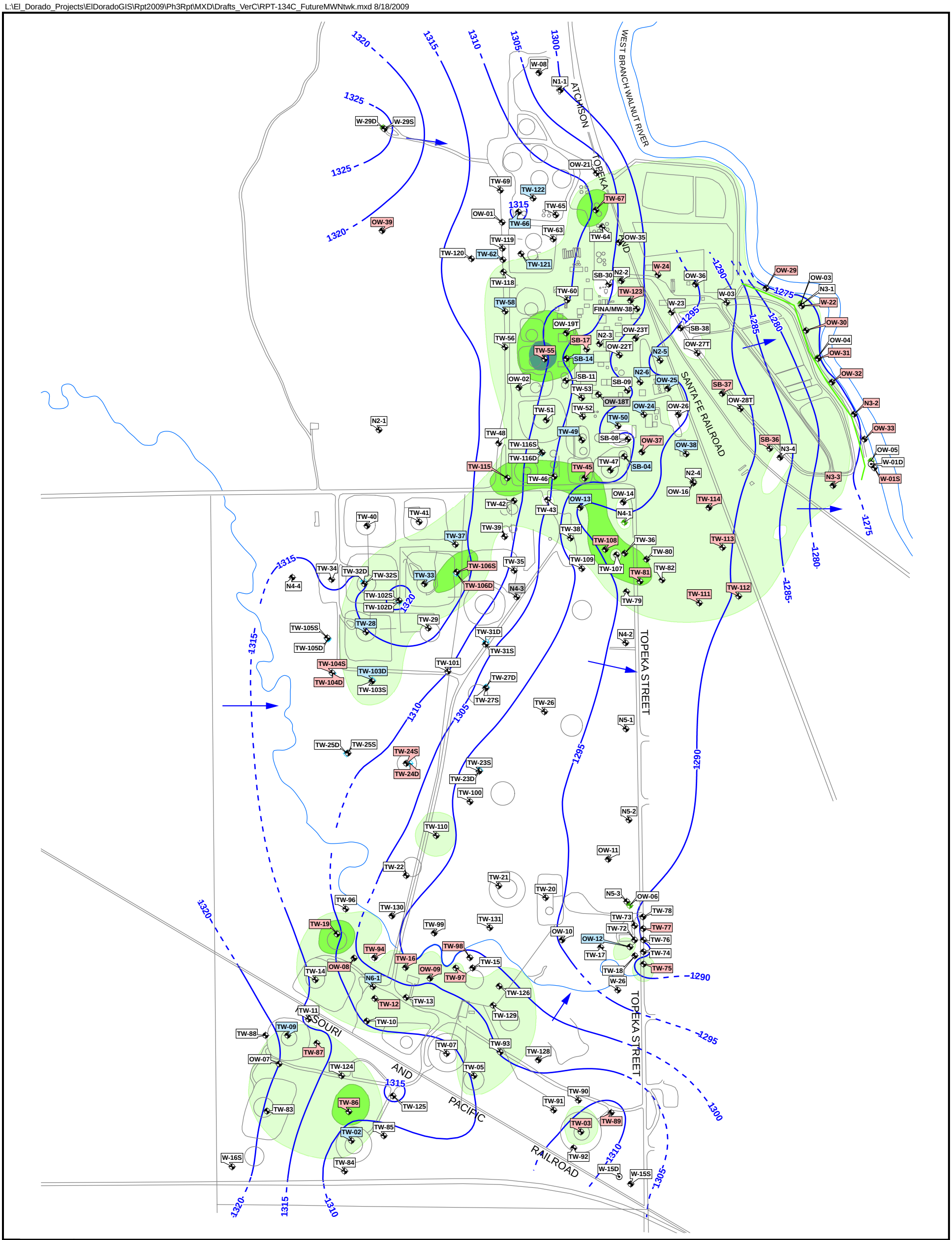
PROJECT: EL PASO MERCHANT ENERGY – PETROLEUM CO.

TITLE: STIFF DIAGRAMS

MWH

FIGURE: 64

L:\El_Dorado_Projects\ElDoradoGIS\Rpt2009\Ph3Rpt\MXD\Drafts_VerC\RPT-134C_FutureMWNtwk.mxd 8/18/2009



LEGEND:

- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- GROUNDWATER INTERCEPTOR TRENCH

CONTOURS

- POTENTIOMETRIC SURFACE CONTOUR (5 FOOT CONTOUR INTERVAL)
- INFERRED POTENTIOMETRIC SURFACE CONTOUR
- GROUNDWATER FLOW DIRECTION

NOTES:
WELL SYMBOLS LABELED WITH WELL NAME.

SHADED REGIONS:

- TPH GRO <0.5 mg/L
- TPH GRO 0.5 - 10 mg/L
- TPH GRO 10 - 100 mg/L
- TPH GRO >100 mg/L

(SHADING BASED ON DATA PRESENTED ON FIGURE 60)

MONITORING WELL LABELS:

- TW-86 WELL TO ADD TO MONITORING PROGRAM
- W-15S WELL NOT TO ADD TO MONITORING PROGRAM
- TW-02 WELL WITH FREE PRODUCT IN 2008 AND/OR 2009
- N4-3 DESTROYED MONITORING WELL

N W E S

SCALE

0 600 1,200
SCALE IN FEET

TITLE
PROPOSED MONITORING WELL NETWORK MAP

FIGURE
65

DRAWING REFERENCE(S):
1. LINE DRAWING SITE MAP BASED ON AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

DESIGNED BY	R. Hultgren	08/09
DRAWN BY	R. Hultgren	08/09
CHECKED BY	R. Hultgren	08/09
APPROVED BY	W. Pickens	08/09
PROJECT MANAGER	D. Mick	08/09
PROJECT NO.	1914351.90010408	
FILE NAME	RPT-134C_FutureMWNtwk.mxd	

elpaso

PROJECT LOCATION: EL DORADO, KANSAS
PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.
TITLE: PROPOSED MONITORING WELL NETWORK MAP
FIGURE: 65

MWH

LEGEND:

MONITORING WELLS AND SOIL BORINGS

- AHA BACKHOE SAMPLE
- SHALLOW SOIL SAMPLE
- SOIL BORING
- POND SOIL BORING
- SHALLOW MONITORING WELL (ALLUVIUM AND WEATHERED BEDROCK)
- DEEP WEATHERED BEDROCK MONITORING WELL (DOYLE SHALE OR SHALLOW FORT RILEY FORMATION)
- DEEP FORT RILEY MONITORING WELL
- FLORENCE MONITORING WELL
- EXTRACTION SUMP
- IN-TRENCH PIEZOMETER

NOTES:
SOIL BORING STFPSB-02, FROM WHICH SOIL SAMPLES WERE COLLECTED IS SHOWN.
SOIL BORINGS STFPSB-01, AND STFPSB-03 THROUGH STFPSB-16 ARE NOT SHOWN.

N

SCALE

0 250 500 750 1,000

SCALE IN FEET

DRAWING REFERENCE(S):
1. AERIAL PHOTOGRAPH PRODUCED BY AERO-METRIC, INC. FROM JUNE 15, 2005 AERIAL SURVEY. STATE PLANE KANSAS SOUTH COORDINATES, NAD 83, US FEET.

elpaso

PROJECT LOCATION: EL DORADO, KANSAS

PROJECT: EL PASO MERCHANT ENERGY - PETROLEUM CO.

TITLE: SITE LAYOUT

MWH

FIGURE: Plate 1

Appendix A

Analytical Data Validation

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. D597

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from TestAmerica Laboratories, Inc. for the analysis of soil samples collected October 29, 30 and 31, 2008 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the soil at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 Skinner List –Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8270 Skinner List – Semivolatile Organic Compounds (SVOC) by GC/MS;
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- SW-846 6010 Skinner List – Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES); and
- SW-846 7471 – Mercury by manual cold-vapor.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Five (5) soil samples were analyzed for BTEX, SVOCs, DRO, GRO and metals. Three (3) trip blanks were submitted to the laboratory and were analyzed for BTEX. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the detection limit (DL). Soil sample results and detection limits were adjusted for moisture content.

DLs for samples PSB-05-9-11, PSB-06-12.5-14.5, PSB-11-19.0-21.0 and PSB-12-16.0-18.0 were elevated for GRO analysis due to sample dilution necessary for high concentrations of target analytes.

According to TestAmerica, six (6) analytes (xylenes, 2,4-dinitrophenol, 3&4-Methylphenol, 4-nitrophenol, pyridine and quinoline) did not meet the client reporting limits and were shown as J flagged above the method detection limit (MDL).

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The laboratory sample receipt checklists stated the samples were received within 2°C and 6°C. One trip blank was listed on the C-O-C and was marked for analysis. The laboratory analyzed an additional two trip blanks that were not marked for analysis on the C-O-Cs. The laboratory reanalyzed BTEX samples PSB-05-9-11 and PSB-06-12.5-14.5 outside of holding time and the BTEX reanalysis for each sample was qualified as estimated (J or UJ).

Calibrations

Calibrations were within range for DRO, GRO and metals.

BTEX initial calibration curve A8I0000862-1 for surrogate 4-bromofluorobenzene-d4 had greater than 15% RSD and was calibrated using linear regression. Since the average RSD

was less than 15% and no individual compound exceeded an RSD of 30%, qualification was not required.

SVOCs initial calibration curve A8I0000873-1 for 2,4-dinitrophenol had greater than 15% RSD and was calibrated using linear regression. Since the average RSD was less than 15% and no individual compound exceeded an RSD of 30%, qualification was not required.

Blanks

BTEX, SVOCs, DRO, GRO and metals were reported as not-detected in the method blanks.

The three (3) trip blanks were reported as not-detected for BTEX.

Internal Standard and Surrogate Recoveries

SVOC and GRO surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Methods 8260 and 8270.

BTEX samples PSB-05-9-11 and PSB-06-12.5-14.5 had low surrogate recovery for 4-bromofluorobenzene-d4 and toluene-d8. The samples were reinjected outside hold time and reanalyzed with similar results. Both the original sample results and the reanalysis were qualified as estimated (J or UJ) for BTEX, due to low surrogate recovery.

DRO sample PSB-11-19.0-21.0 had elevated surrogate recovery for o-terphenyl. Sample PSB-11-19.0-21.0 was reported as detected for DRO and was qualified as estimated (J) for DRO, due to elevated surrogate recovery.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for metals, DRO and GRO.

BTEX LCS associated with the reanalysis of sample PSB-06-12.5-14.5 had low recovery for benzene and xylenes. Sample PSB-06-12.5-14.5 reanalysis (11-24-08) was qualified as estimated (J) for benzene and xylenes, due to low LCS recovery.

SVOCs LCS associated with samples PSB-04-10-12, PSB-05-9-11, PSB-06-12.5-14.5, PSB-11-19.0-21.0 and PSB-12-16.0-18.0 had elevated recovery for bis(2-ethylhexyl)phthalate. The associated samples were reported as not-detected for bis(2-ethylhexyl)phthalate, and did not require qualification.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was analyzed for BTEX on a sample not associated with the project site and was within acceptance limits. According to TestAmerica, a MS/MSD was not analyzed for SVOCs, DRO, GRO and metals, due to insufficient sample volume supplied to the laboratory.

Post Digestion Spikes and Serial Dilutions

According to TestAmerica, post digestion spike (PDS) and serial dilution analysis was not performed for metals analysis due to insufficient sample volume supplied to the laboratory.

Laboratory Duplicates

According to TestAmerica, laboratory duplicate analysis was not performed for metals analysis due to insufficient sample volume supplied to the laboratory.

Field Precision

Field duplicate samples were not included in this data package.

Summary

The soil analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that sample PSB-06-12.5-14.5 reanalysis (11-24-08) was qualified as estimated (J) for benzene and xylenes, due to low LCS recovery. BTEX samples PSB-05-9-11 and PSB-06-12.5-14.5 were reanalyzed outside of holding time and the BTEX reanalysis for each sample was qualified as estimated (J or UJ). Samples PSB-05-9-11 and PSB-06-12.5-14.5 original sample results and reanalysis sample results were qualified as estimated (J or UJ) for BTEX, due to low surrogate recovery. Sample PSB-11-19.0-21.0 was reported as detected for DRO and was qualified as estimated (J) for DRO, due to elevated surrogate recovery.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
A8D70803	PSB-04-10-12	Soil
A8D70805	PSB-05-9-11	Soil
A8D81002	PSB-06-12.5-14.5	Soil
A8D85103	PSB-11-19.0-21.0	Soil
A8D85105	PSB-12-16.0-18.0	Soil
A8D70806	TRIP BLANK (10-29-08)	Water
A8D81006	TRIP BLANK (10-30-08)	Water
A8D85106	TRIP BLANK (10-31-08)	Water

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
PSB-06-12.5-14.5 Reanalysis (11-24-08)	Benzene Xylenes	J	Low LCS recovery.
PSB-05-9-11 Reanalysis (11-13-08)	Benzene Toluene Ethylbenzene Xylenes	UJ	Analyzed outside holding time.
PSB-06-12.5-14.5 Reanalysis (11-24-08)	Benzene Ethylbenzene Xylenes	J	Analyzed outside holding time.
PSB-06-12.5-14.5 Reanalysis (11-24-08)	Toluene	UJ	Analyzed outside holding time.
PSB-05-9-11 Original (11-12-08)	Benzene Toluene Ethylbenzene Xylenes	UJ	Low surrogate recovery.
PSB-05-9-11 Reanalysis (11-13-08)	Benzene Toluene Ethylbenzene Xylenes	UJ	Low surrogate recovery.
PSB-06-12.5-14.5 Original (11-13-08)	Benzene Ethylbenzene Xylenes	J	Low surrogate recovery.
PSB-06-12.5-14.5 Original (11-13-08)	Toluene	UJ	Low surrogate recovery.
PSB-06-12.5-14.5 Reanalysis (11-24-08)	Benzene Ethylbenzene Xylenes	J	Low surrogate recovery.
PSB-06-12.5-14.5 Reanalysis (11-24-08)	Toluene	UJ	Low surrogate recovery.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
PSB-11-19.0-21.0	DRO	J	Elevated surrogate recovery.

J – The analyte was positively identified, the quantitation is an estimation.

UJ – Potential false negative due to low QC recoveries.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. D891

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from TestAmerica Laboratories, Inc. for the analysis of soil samples collected November 3, 4, 6 and 7, 2008 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the soil at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 –Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8270 Skinner List – Semivolatile Organic Compounds (SVOC) by GC/MS;
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- SW-846 6010 Skinner List – Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES); and
- SW-846 7471 – Mercury by manual cold-vapor.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Twelve (12) soil samples were analyzed for BTEX, SVOCs, DRO, GRO and metals. Four (4) trip blanks were submitted to the laboratory and were analyzed for BTEX. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the detection limit (DL). Soil sample results and detection limits were adjusted for moisture content. Qualified sample data is included on Table 2.

DLs for samples PSB-19-19-21, PSB-21-10-12, PSB-22-10.5-12.5, PSB-23-11-13 and PSB-24-10-12 were elevated for GRO analysis due to sample dilution necessary for high concentrations of target analytes. DLs for samples PSB-22-10.5-12.5 and PSB-24-10-12 were elevated for SVOC analysis due to sample dilution necessary for viscosity. DLs for sample PSB-22-10.5-12.5 were elevated for BTEX analysis due to sample dilution necessary for high concentrations of non-target analytes. The DL for sample PSB-24-10-12 was elevated for manganese analysis, due to sample dilution necessary for high concentrations of the target analytes.

According to TestAmerica, six (6) analytes (xylenes, 2,4-dinitrophenol, 3&4-Methylphenol, 4-nitrophenol, pyridine and quinoline) did not meet the client reporting limits and were shown as J flagged above the method detection limit (MDL).

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The laboratory sample receipt checklists stated the samples were received within 2°C and 6°C. Sample PSB-17-18-20 had the GRO methanol vial broken during shipment. Sample PSB-23-11-13 was reanalyzed on 12-3-08 outside holding time and was qualified as estimated (J or UJ).

Calibrations

Calibrations were within range for DRO, GRO and metals.

BTEX initial calibration curves A8I00009464-1 and A8I0000862-1 had surrogate relative standard deviation (RSD) greater than 15%, and were calibrated using linear regression. Since the average RSD was less than 15% and no individual compound exceeded an RSD of 30%, qualification was not required.

SVOCs initial calibration curve A8I0000885-1 for 2,4-dinitrophenol and 4-nitrophenol, curve A8I0000927-1 for 2,4-dinitrophenol and curves A8I0000886-1 and A8I0000936-1 for pyridine had greater than 15% RSD and were calibrated using linear regression. Since the average RSD was less than 15% and no individual compound exceeded an RSD of 30%, qualification was not required.

SVOC continuing calibration verification (CCV) A8C0003111-2 had greater than 20% difference for Pyridine. Samples PSB-23-11-13 and PSB-19-19-21 were reported as detected for pyridine and were qualified as estimated, due to elevated CCV percent difference. SVOC CCV A8C0003125-1 had greater than 20% difference for 2,4-dinitrophenol. Associated samples were reported as not-detected and did not require qualification.

Blanks

BTEX, SVOCs, DRO, GRO and metals were reported as not-detected in the method blanks.

Four (4) trip blanks were reported as not-detected for BTEX.

Internal Standard and Surrogate Recoveries

SVOC surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Method 8270.

BTEX sample PSB-22-10.5-12.5 analyzed at 1X dilution had low and elevated surrogate recovery and was qualified as estimated (J) for BTEX. This sample was reanalyzed at a 4X dilution with surrogates below acceptance limits. Sample PSB-22-10.5-12.5 analyzed at 4X dilution was qualified as estimated (J or UJ) for BTEX.

BTEX sample PSB-23-11-13 original analysis 11-21-08 had low surrogate recovery and was qualified as estimated (J or UJ). This sample was reanalyzed on 12-3-08 outside holding time with low surrogate recovery and was qualified as estimated (J or UJ).

DRO samples PSB-19-19-21, PSB-22-10.5-12.5 and PSB-24-10-12 had elevated surrogate recovery and were reported as detected for DRO and were qualified as estimated (J) for DRO, due to elevated surrogate recovery.

GRO sample PSB-24-10-12 had elevated surrogate recovery and was reported as detected for GRO and was qualified as estimated (J) for GRO, due to elevated surrogate recovery.

BTEX sample PSB-22-10.5-12.5 (1X dilution) had elevated internal standard (chlorobenzene-d5) recovery. This sample was reported as detected for BTEX and was qualified as estimated (J), due to elevated internal standard recovery.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for BTEX, metals, DRO and GRO.

SVOCs LCS analyzed on 11-28-08 had elevated relative percent difference (RPD) between the LCS and laboratory control sample duplicate (LCSD) for benzo(b)fluoranthene. Samples PSB-22-10.5-12.5, PSB-23-11-13 and PSB-24-10-12 were reported as detected for benzo(b)fluoranthene and were qualified as estimated (J), due to elevated LCS/LCSD RPD.

SVOCs LCS analyzed on 11-14-08 had low recovery for 2,4-dimethylphenol, 2-methylphenol and naphthalene. Samples PSB-13-14-16, PSB-15-19-21 and PSB-16-19-21 were reported as not-detected and were qualified as non-detect estimated (UJ) for 2,4-dimethylphenol, 2-methylphenol and naphthalene, due to low LCS recovery. This LCS also had elevated RPD between the LCS/LCSD for 1,2-dichlorobenzene and 2-methylphenol. The associated samples were reported as not-detected for 1,2-dichlorobenzene and 2-methylphenol, and did not require qualification.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was not analyzed for BTEX, SVOCs, DRO and GRO. According to TestAmerica, a MS/MSD was not analyzed, due to insufficient sample volume supplied to the laboratory.

Metals MS/MSD analyzed on sample PSB-20-16-18 had low recovery for antimony and manganese and elevated recovery for barium. The amount of manganese and barium spiked was less than four times the unspiked parent sample and may not represent the matrix effect and were not qualified. Sample PSB-20-16-18 was qualified as non-detect estimated (UJ) for antimony, due to low MS/MSD recovery.

Post Digestion Spikes and Serial Dilutions

The post digestion spike analyzed on sample PSB-20-16-18 had low recovery for manganese and was qualified as estimated (J).

The serial dilution analyzed on sample PSB-20-16-18 had elevated percent difference for arsenic, cobalt, lead, nickel and vanadium. Sample PSB-20-16-18 was qualified as estimated (J) for arsenic, cobalt, lead, nickel and vanadium, due to serial dilution outside acceptance criteria.

Laboratory Duplicates

The metals laboratory duplicate analyzed on sample PSB-20-16-18 was within laboratory acceptance criteria.

Field Precision

Field duplicate samples were not included in this data package.

Summary

The soil analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that sample PSB-23-11-13 was reanalyzed on 12-3-08 outside holding time and was qualified as estimated (J or UJ). Samples PSB-23-11-13 and PSB-19-19-21 were qualified as estimated for pyridine, due to elevated CCV percent difference. Sample PSB-22-10.5-12.5 analyzed at 1X dilution was qualified as estimated (J) for BTEX, due to low and elevated surrogate recovery. Sample PSB-22-10.5-12.5 analyzed at 4X dilution was qualified as estimated (J or UJ) for BTEX, due to surrogates below acceptance limits. Sample PSB-23-11-13 original analysis 11-21-08 was qualified as estimated (J or UJ) for BTEX, due to low surrogate recovery. Sample PSB-23-11-13 was reanalyzed on 12-3-08 and was qualified as estimated (J or UJ) for BTEX, due to low surrogate recovery. DRO samples PSB-19-19-21, PSB-22-10.5-12.5 and PSB-24-10-12 were qualified as estimated (J) for DRO, due to elevated surrogate recovery. GRO sample PSB-24-10-12 was qualified as estimated (J) for GRO, due to elevated surrogate recovery. Sample PSB-22-10.5-12.5 (1X dilution) was qualified as estimated (J) for BTEX, due to elevated internal standard recovery. Samples PSB-22-10.5-12.5, PSB-23-11-13 and PSB-24-10-12 were reported as detected for benzo(b)fluoranthene and were qualified as estimated (J), due to elevated LCS/LCSD RPD. Samples PSB-13-14-16, PSB-15-19-21 and PSB-16-19-21 were qualified as non-detect estimated (UJ) for 2,4-dimethylphenol, 2-methylphenol and naphthalene, due to low LCS recovery. Sample PSB-20-16-18 was qualified as non-detect estimated (UJ) for antimony, due to low MS/MSD recovery. The post digestion spike analyzed on sample PSB-20-16-18 had low recovery for manganese and was qualified as estimated (J). Sample PSB-20-16-18 was qualified as estimated (J) for arsenic, cobalt, lead, nickel and vanadium, due to serial dilution outside acceptance criteria.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
A8D89102	PSB-13-14-16	Soil
A8D89105	PSB-15-19-21	Soil
A8D89107	PSB-16-19-21	Soil
A8D98902	PSB-17-18-20	Soil
A8D98904	PSB-18-16-18	Soil
A8D98906	PSB-19-19-21	Soil
A8E20502	PSB-20-16-18	Soil
A8E20504	PSB-21-10-12	Soil
A8E20506	PSB-22-10.5-12.5	Soil
A8E25502	PSB-23-11-13	Soil
A8E25504	PSB-24-10-12	Soil
A8E25507	PSB-26-10-12	Soil
A8D89108	TRIP BLANK (11-3-08)	Water
A8D98907	TRIP BLANK (11-4-08)	Water
A8E20507	TRIP BLANK (11-6-08)	Water
A8E25508	TRIP BLANK (11-7-08)	Water

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
PSB-23-11-13 (reanalyzed 12-3-08)	Benzene Ethylbenzene Toluene	UJ	Holding time exceedance.
PSB-23-11-13 (reanalyzed 12-3-08)	Xylenes	J	Holding time exceedance.
PSB-23-11-13 PSB-19-19-21	Pyridine	J	Elevated CCV percent difference.
PSB-22-10.5-12.5 1X dilution	Benzene Ethylbenzene Toluene Xylenes	J	Elevated and low surrogate recovery.
PSB-22-10.5-12.5 4X dilution	Benzene Ethylbenzene Xylenes	J	Low surrogate recovery.
PSB-22-10.5-12.5 4X dilution	Toluene	UJ	Low surrogate recovery.
PSB-23-11-13 (original 11-21-08)	Benzene Ethylbenzene Toluene	UJ	Low surrogate recovery.
PSB-23-11-13 (original 11-21-08)	Xylenes	J	Low surrogate recovery.
PSB-23-11-13 (reanalyzed 12-3-08)	Benzene Ethylbenzene Toluene	UJ	Low surrogate recovery.
PSB-23-11-13 (reanalyzed 12-3-08)	Xylenes	J	Low surrogate recovery.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
PSB-19-19-21 PSB-22-10.5-12.5 PSB-24-10-12	DRO	J	Elevated surrogate recovery.
PSB-24-10-12	GRO	J	Elevated surrogate recovery.
PSB-22-10.5-12.5 (1X dilution)	Benzene Ethylbenzene Toluene Xylenes	J	Elevated internal standard recovery.
PSB-22-10.5-12.5 PSB-23-11-13 PSB-24-10-12	Benzo(b)fluoranthene	J	Elevated LCS/LCSD RPD.
PSB-13-14-16 PSB-15-19-21 PSB-16-19-21	2,4-Dimethylphenol 2-Methylphenol Naphthalene	UJ	Low LCS recovery.
PSB-20-16-18	Antimony	UJ	Low MS/MSD recovery.
PSB-20-16-18	Manganese	J	Low post digestion spike recovery.
PSB-20-16-18	Arsenic Cobalt Lead Nickel Vanadium	J	Elevated serial dilution percent difference.

J – The analyte was positively identified, the quantitation is an estimation.

UJ – Potential false negative due to low QC recoveries.

R – The data are rejected and may not be usable due to QC deficiencies.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. E318

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from TestAmerica Laboratories, Inc. for the analysis of soil samples collected November 10, 11 and 13, 2008 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the soil at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 –Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8260 Skinner List –Volatile Organic Compounds (VOCs) by GC/MS;
- SW-846 8270 Skinner List – Semivolatile Organic Compounds (SVOC) by GC/MS;
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- SW-846 6010 Skinner List – Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES); and
- SW-846 7471 – Mercury by manual cold-vapor.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Eight (8) soil samples and one (1) duplicate soil sample were analyzed for SVOCs, DRO, GRO and metals. These samples were also analyzed for either BTEX or VOCs. Three (3) trip blanks were submitted to the laboratory and were analyzed for BTEX. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the detection limit (DL). Soil sample results and detection limits were adjusted for moisture content. Qualified sample data is included on Table 2.

DLs for samples PSB-27-10-12, PSB-27-15.5-17.5, PSB-28-10-12, PSB-28-18-20 and PSB-28-50 were elevated for GRO analysis due to sample dilution necessary for high concentrations of target analytes. DLs for sample STFPSB-02-2-4 were elevated for DRO, GRO, SVOC and VOC analysis due to sample dilution necessary for high concentrations of target analytes.

According to TestAmerica, eight (8) analytes (1,4-dioxane, 2-butanone, xylenes, 2,4-dinitrophenol, 3&4-Methylphenol, 4-nitrophenol, pyridine and quinoline) did not meet the client reporting limits and were shown as J flagged above the method detection limit (MDL).

Sample PSB-27-8-10 had an adjusted final volume during extraction for SVOC and DRO, due to extract viscosity. Sample STFPSB-02-2-4 had an adjusted final volume during extraction for DRO, due to extract viscosity.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The laboratory sample receipt checklists stated the samples were received within 2°C and 6°C. Trip Blank (11-11-08) was analyzed outside holding time for VOCs, due to a laboratory oversight. This trip blank was reported as not-detected for VOCs and was qualified as non-detect estimated (UJ) for VOCs, due to holding time

exceedance. Sample PSB-28-10-12 reanalyzed on 11-25-08, was analyzed outside holding time and was qualified as estimated (J), due to holding time exceedance.

Calibrations

Calibrations were within range for DRO, GRO and metals.

VOCs/BTEX initial calibration curve A8I0000934-1 had 1,4-dioxane relative standard deviation (RSD) greater than 30%. The associated samples were reported as not-detected for 1,4-dioxane and did not require qualification.

SVOCs initial calibration curve A8I0000927-1 for 2,4-dinitrophenol and A8I0000936-1 for pyridine had greater than 15% (RSD) and were calibrated using linear regression. Since the average RSD was less than 15% and no individual compound exceeded an RSD of 30%, qualification was not required.

SVOC continuing calibration verification (CCV) A8C0003125-1 had greater than 20% difference for 2,4-dinitrophenol. Associated samples were reported as not-detected and did not require qualification. SVOC CCV A8C0003144-1 had greater than 20% difference for 2,4-dinitrophenol and bis(2-ethylhexyl)phthalate. Associated samples were reported as not-detected and did not require qualification.

Blanks

BTEX, VOCs, DRO, GRO and metals were reported as not-detected in the method blanks.

SVOCs had bis(2-ethylhexyl)phthalate reported at 64 J ug/kg in the method blank. The associated samples were reported as not-detected for bis(2-ethylhexyl)phthalate, and did not require qualification.

Trip Blank (11-11-08) and Trip Blank (11-13-08) were reported as not-detected for VOCs. Trip Blank (11-10-08) was reported as not-detected for BTEX.

Internal Standard and Surrogate Recoveries

GRO surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Methods 8260 and 8270.

VOCs sample STFPSB-02-2-4 analyzed at 1X dilution had low surrogate recovery and was qualified as estimated (J or UJ) for VOCs. This sample was reanalyzed at a 5X dilution with surrogates within acceptance limits.

BTEX sample PSB-28-10-12 original analysis 11-24-08 and reanalysis 11-25-08 had low surrogate recovery and were qualified as estimated (J).

SVOC sample STFPSB-02-2-4 had elevated nitrobenzene-d5 and phenol-d5 surrogate recovery. Sample STFPSB-02-2-4 was qualified as estimated (J) for detections of SVOCs, due to elevated surrogate recovery.

DRO sample STFPSB-02-2-4 had zero percent surrogate recovery for o-terphenyl. This sample was analyzed at a 20X dilution and the surrogates were diluted out of the sample. Qualification was not needed for diluted surrogates. DRO sample PSB-28-50 had elevated surrogate recovery and was reported as detected for DRO and was qualified as estimated (J) for DRO, due to elevated surrogate recovery.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for BTEX, VOCs, SVOCS, metals, DRO and GRO. SVOCs had elevated relative percent difference (RPD) between the LCS and laboratory control sample duplicate (LCSD) for benzo(b)fluoranthene. The associated samples were reported as not-detected for benzo(b)fluoranthene, and did not require qualification.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was not analyzed for BTEX, VOCs, SVOCs, DRO and GRO. According to TestAmerica, a MS/MSD was not analyzed, due to insufficient sample volume supplied to the laboratory.

Metals MS/MSD analyzed on sample PSB-27-10-12 had zero percent recovery for antimony. Sample PSB-27-10-12 was qualified as rejected (R) for antimony, due to low MS/MSD recovery.

Post Digestion Spikes and Serial Dilutions

The post digestion spike analyzed on sample PSB-27-10-12 was within laboratory acceptance criteria. The serial dilution analyzed on sample PSB-27-10-12 had elevated percent difference for arsenic, barium, beryllium, chromium, cobalt, lead, magnesium, manganese, nickel, vanadium and zinc. Sample PSB-27-10-12 was qualified as estimated (J) for arsenic, barium, beryllium, chromium, cobalt, lead, magnesium, manganese, nickel, vanadium and zinc, due to serial dilution outside acceptance criteria.

Laboratory Duplicates

The metals laboratory duplicate analyzed on sample PSB-27-10-12 was within laboratory acceptance criteria.

Field Precision

One field duplicate sample was included in this data package (PSB-28-50). However, the original sample PSB-28-8-10 was not analyzed; therefore, sample/duplicate precision calculations could not be completed. Sample PSB-28-50 was collected from 8-10 feet below ground surface and will be used for data reporting purposes and not as a quality control sample.

Summary

The soil analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property. Except for antimony in sample PSB-27-10-12 which was qualified as rejected (R), due to low MS/MSD recovery.

The data user is advised that sample Trip Blank (11-11-08) was qualified as non-detect estimated (UJ) for VOCs, due to holding time exceedance. Sample PSB-28-10-12 reanalyzed on 11-25-08 was qualified as estimated (J) for BTEX, due to holding time exceedance. VOCs sample STFPSB-02-2-4 analyzed at 1X dilution had low surrogate recovery and was qualified as estimated (J or UJ) for VOCs. BTEX sample PSB-28-10-12 original analysis 11-24-08 and reanalysis 11-25-08 had low surrogate recovery and were qualified as estimated (J). Sample STFPSB-02-2-4 was qualified as estimated (J) for detections of SVOCs, due to elevated surrogate recovery. Sample PSB-28-50 was qualified as estimated (J) for DRO, due to elevated surrogate recovery. Sample PSB-27-10-12 was qualified as estimated (J) for arsenic, barium, beryllium, chromium, cobalt, lead, magnesium, manganese, nickel, vanadium and zinc, due to serial dilution outside acceptance criteria.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
A8E31802	PSB-27-10-12	Soil
A8E31803	PSB-27-15.5-17.5	Soil
A8E31805	PSB-28-10-12	Soil
A8E31806	PSB-28-18-20	Soil
A8E31807	PSB-20-50	Soil
A8E56202	STF-CR-E-0-6	Soil
A8E56201	STF-CR-W-0-6	Soil
A8E40001	STFPSB-02-2-4	Soil
A8E40002	STFPSB-02-5-7	Soil
A8E31808	TRIP BLANK (11-10-08)	Water
A8E40003	TRIP BLANK (11-11-08)	Water
A8E56203	TRIP BLANK (11-13-08)	Water

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
PSB-27-10-12	Antimony	R	Zero percent MS/MSD recovery.
TRIP BLANK (11-11-08)	1,1,1-Trichloroethane 1,1-Dichloroethane 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,4-Dioxane 2-Butanone Benzene Carbon Disulfide Chlorobenzene Chloroform Ethylbenzene Methyl tert butyl ether Styrene Tetrachloroethene Toluene Xylenes	UJ	Holding time exceedance.
PSB-28-10-12 (reanalyzed 11-25-08)	Benzene Ethylbenzene Toluene Xylenes	J	Holding time exceedance.
STFPSB-02-2-4 1X dilution	Ethylbenzene Xylenes	J	Low surrogate recovery.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
STFPSB-02-2-4 1X dilution	1,1,1-Trichloroethane 1,1-Dichloroethane 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,4-Dioxane 2-Butanone Benzene Carbon Disulfide Chlorobenzene Chloroform Methyl tert butyl ether Styrene Tetrachloroethene Toluene	UJ	Low surrogate recovery.
PSB-28-10-12 (original 11-24-08)	Benzene Ethylbenzene Toluene Xylenes	J	Low surrogate recovery.
PSB-28-10-12 (reanalyzed 11-25-08)	Benzene Ethylbenzene Toluene Xylenes	J	Low surrogate recovery.
STFPSB-02-2-4	Acenaphthene Chrysene Fluoranthene Fluorene Naphthalene Phenanthrene Pyrene	J	Elevated surrogate recovery.
PSB-28-50	DRO	J	Elevated surrogate recovery.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
PSB-27-10-12	Arsenic Barium Beryllium Chromium Cobalt Lead Magnesium Manganese Nickel Vanadium Zinc	J	Elevated serial dilution percent difference.

J – The analyte was positively identified, the quantitation is an estimation.

UJ – Potential false negative due to low QC recoveries.

R – The data are rejected and may not be usable due to QC deficiencies.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. F402

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from TestAmerica Laboratories, Inc. for the analysis of soil samples collected December 3, 4, 5 and 8, 2008 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the soil at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 –Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and Methyl tert-Butyl Ether (MTBE) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8270 Skinner List – Semivolatile Organic Compounds (SVOC) by GC/MS;
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- SW-846 6010 Skinner List – Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES); and
- SW-846 7471 – Mercury by manual cold-vapor.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Twenty-two (22) soil samples were analyzed for BTEX/MTBE, SVOCs, DRO, GRO and metals. Four (4) trip blanks were submitted to the laboratory and were analyzed for BTEX/MTBE. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the detection limit (DL). Soil sample results and detection limits were adjusted for moisture content. Qualified sample data is included on Table 2.

DLs for samples TR-13, TR-12, TR-11, TR-10, TR-15, TR-16, TR-14, TR-21, TR-22, TR-26, TR-20, TR-19, TR-18, TR-17, TR-24, TR-23, TR-25, TR-28, TR-27, TR-29, TR-30 and TR-31 were elevated for SVOC analysis due to sample dilution necessary for sample matrix effects. DLs for sample TR-11 were elevated for GRO and BTEX/MTBE analysis due to sample dilution necessary for high concentrations of target analytes. DLs for sample TR-16 were elevated for barium analysis due to sample dilution necessary for high concentrations of target analytes. DLs for sample TR-28 were elevated for antimony and selenium analysis due to sample dilution necessary for sample matrix effects.

According to TestAmerica, six (6) analytes (xylenes, 2,4-dinitrophenol, 3&4-Methylphenol, 4-nitrophenol, pyridine and quinoline) did not meet the client reporting limits and were shown as J flagged above the method detection limit (MDL).

Samples TR-13, TR-12, TR-11, TR-10, TR-15, TR-22, TR-26, TR-20, TR-19, TR-18, TR-17, TR-24, TR-27 and TR-31 had an adjusted final volume during extraction and Gel-Permeation Chromatography (GPC) cleanup process for SVOCs, due to extract matrix and viscosity. Samples TR-13, TR-12, TR-11, TR-10, TR-15, TR-14, TR-21, TR-22, TR-26, TR-20, TR-19, TR-18, TR-17, TR-24, TR-23, TR-28, TR-27, TR-29, TR-30 and TR-31 had an adjusted final volume during extraction for DRO, due to extract matrix and viscosity.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork

filled out properly. The laboratory sample receipt checklists stated the samples were received within 2°C and 6°C. BTEX/MTBE sample TR-11 4X dilution was analyzed outside holding time and was qualified as estimated (J or UJ) for BTEX/MTBE, due to holding time exceedance. SVOC samples TR-10, TR-11, TR-12, TR-13, TR-14, TR-15, TR-16, TR-17, TR-18, TR-19, TR-20, TR-21, TR-22, TR-24 and TR-26 were re-extracted outside holding time and were qualified as estimated (J or UJ) for SVOCs, due to holding time exceedance.

Calibrations

Calibrations were within range for GRO and metals.

VOCs/BTEX initial calibration curve A8I0000983-1 had surrogate 4-bromofluorobenzene-d4 relative standard deviation (RSD) greater than 15%. Since the average RSD was less than 15% and no individual compound exceeded an RSD of 30%, qualification was not required.

VOCs/BTEX initial calibration curve A8I0001005-1 had MTBE RSD greater than 15% and was calibrated using the quadratic equation. Since the average RSD was less than 15% and no individual compound exceeded an RSD of 30%, qualification was not required.

SVOCs initial calibration curves A8I0000985-1 and A8I0000995-1 for 2,4-dinitrophenol had greater than 15% (RSD) and were calibrated using linear regression. Since the average RSD was less than 15% and no individual compound exceeded an RSD of 30%, qualification was not required.

SVOC continuing calibration verification (CCV) A8C0003252-1 had greater than 20% difference for 2,4-dinitrophenol. Associated samples were reported as not-detected and did not require qualification.

DRO CCVs were compliant for diesel fuel, but outside the 25% difference for surrogate o-terphenyl. Since DRO was compliant, no qualification was required.

Blanks

DRO, GRO and metals were reported as not-detected in the method blanks.

BTEX/MTBE had toluene reported at 2 J ug/kg in the method blank. The associated samples were reported as not-detected for toluene, and did not require qualification.

SVOCs method blank was reported as detected for phenol at a concentration of 59 J ug/kg. The associated samples were reported as not-detected for phenol, and did not require qualification.

Four (4) trip blanks were submitted to the laboratory and reported as not-detected for BTEX/MTBE.

Internal Standard and Surrogate Recoveries

BTEX/MTBE and GRO surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Methods 8260 and 8270.

SVOC method blank SBLK32 had low surrogate recovery. Associated samples were re-extracted and reanalyzed outside holding time and were qualified accordingly.

SVOC samples TR-10, TR-11, TR-12, TR-13, TR-14, TR-15, TR-17, TR-18, TR-19, TR-20, TR-21, TR-22, TR-24 and TR-26 had surrogates diluted out of the original analysis and the re-extraction analysis. SVOC sample TR-16 original analysis had surrogated diluted out of the sample. Qualification was not needed for diluted surrogates. TR-16 re-extraction analysis had low recovery for surrogate 2,4,6-tribromophenol. TR-16 re-extraction was qualified as estimated (J or UJ) for base/neutral SVOC compounds, due to low surrogate recovery. SVOC samples TR-25 and TR-31 had low surrogate recovery for terphenyl-d14. Samples TR-25 and TR-31 were qualified as non-detect estimated (UJ) for acid SVOC compounds, due to low surrogate recovery.

DRO samples TR-10, TR-11, TR-12, TR-13, TR-14, TR-15, TR-17, TR-18, TR-19, TR-20, TR-21, TR-22, TR-23, TR-24, TR-26, TR-27, TR-28, TR-29, TR-30 and TR-31 had surrogate recovery outside acceptance criteria. These samples had an adjusted final extract volume of 10,000 uL due to sample viscosity causing the surrogates to fail; therefore, no qualification was needed.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for BTEX/MTBE, SVOCS, metals, DRO and GRO.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was not analyzed for BTEX/MTBE, SVOCs, DRO and GRO. According to TestAmerica, a MS/MSD was not analyzed, due to insufficient sample volume supplied to the laboratory.

Metals MS/MSD analyzed on sample TR-13 had low percent recovery for antimony and magnesium. Sample TR-13 was qualified as estimated (J or UJ) for antimony and magnesium, due to low MS/MSD recovery. This MS/MSD also had elevated and low recovery and elevated relative percent difference (RPD) for zinc. Sample TR-13 was qualified as estimated (J) for zinc, due to MS/MSD recovery and RPD outside

acceptance criteria. Manganese also had low recovery; however, the amount spiked in the MS/MSD was less the four times the unspiked parent sample and may not represent the matrix effect and was not qualified.

Metals MS/MSD analyzed on sample TR-23 had low percent recovery for antimony, barium, lead, magnesium, nickel, vanadium and zinc. Sample TR-23 was qualified as estimated (J or UJ) for antimony, barium, lead, magnesium, nickel, vanadium and zinc, due to low MS/MSD recovery. Manganese also had low recovery; however, the amount spiked in the MS/MSD was less the four times the unspiked parent sample and may not represent the matrix effect and was not qualified.

Post Digestion Spikes and Serial Dilutions

The post digestion spike analyzed on sample TR-23 was within laboratory acceptance criteria. The serial dilution analyzed on sample TR-23 had elevated percent difference for arsenic, cobalt, magnesium, nickel and zinc. Sample TR-23 was qualified as estimated (J) for arsenic, cobalt, magnesium, nickel and zinc, due to serial dilution outside acceptance criteria.

The post digestion spike analyzed on sample TR-13 had low recovery for manganese. Sample TR-13 was qualified as estimated (J) for manganese, due to low post digestion spike recovery. The serial dilution analyzed on sample TR-13 was within laboratory acceptance criteria.

Laboratory Duplicates

The metals laboratory duplicate analyzed on sample TR-23 was within laboratory acceptance criteria. The metals laboratory duplicate analyzed on sample TR-13 had elevated RPD for zinc. Sample TR-13 was qualified as estimated (J) for zinc, due to laboratory duplicate outside acceptance criteria.

Field Precision

Field duplicate samples were not included as part of this data package.

Summary

The soil analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that BTEX/MTBE sample TR-11 4X dilution was qualified as estimated (J or UJ) for BTEX/MTBE, due to holding time exceedance. SVOC samples TR-10, TR-11, TR-12, TR-13, TR-14, TR-15, TR-16, TR-17, TR-18, TR-19, TR-20, TR-21, TR-22, TR-24 and TR-26 were re-extracted outside holding time and were qualified as estimated (J or UJ) for SVOCs, due to

holding time exceedance. TR-16 re-extraction was qualified as estimated (J or UJ) for base/neutral SVOC compounds, due to low surrogate recovery. Samples TR-25 and TR-31 were qualified as non-detect estimated (UJ) for acid SVOC compounds, due to low surrogate recovery. Sample TR-13 was qualified as estimated (J or UJ) for antimony and magnesium, due to low MS/MSD recovery. Sample TR-13 was qualified as estimated (J) for zinc, due to MS/MSD recovery and RPD outside acceptance criteria. Sample TR-23 was qualified as estimated (J or UJ) for antimony, barium, lead, magnesium, nickel, vanadium and zinc, due to low MS/MSD recovery. Sample TR-23 was qualified as estimated (J) for arsenic, cobalt, magnesium, nickel and zinc, due to serial dilution outside acceptance criteria. Sample TR-13 was qualified as estimated (J) for manganese, due to low post digestion spike recovery. Sample TR-13 was qualified as estimated (J) for zinc, due to laboratory duplicate outside acceptance criteria.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
A8F40204	TR-10	Soil
A8F40203	TR-11	Soil
A8F40202	TR-12	Soil
A8F40201	TR-13	Soil
A8F47201	TR-14	Soil
A8F40205	TR-15	Soil
A8F40206	TR-16	Soil
A8F54602	TR-17	Soil
A8F54601	TR-18	Soil
A8F47206	TR-19	Soil
A8F47205	TR-20	Soil
A8F47202	TR-21	Soil
A8F47203	TR-22	Soil
A8F59101	TR-23	Soil
A8F54603	TR-24	Soil
A8F59102	TR-25	Soil
A8F47204	TR-26	Soil
A8F59104	TR-27	Soil
A8F59103	TR-28	Soil
A8F59105	TR-29	Soil
A8F59106	TR-30	Soil
A8F59107	TR-31	Soil
A8F40207	TRIP BLANK (12-3-08)	Water
A8F47207	TRIP BLANK (12-4-08)	Water
A8F54604	TRIP BLANK (12-5-08)	Water
A8F59108	TRIP BLANK (12-8-08)	Water

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-11 (4X Dilution)	MTBE	UJ	Holding time exceedance.
TR-11 (4X Dilution)	Benzene Ethylbenzene Toluene Xylenes	J	Holding time exceedance.
TR-10 (Reanalysis 12-23-08)	Acenaphthene Anthracene Benzo(k)fluoranthene Benzo(a)pyrene Bis(2-ethylhexyl)phthalate Dibenz(a,h)anthracene Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenanthrene Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-10 (Reanalysis 12-23-08)	Benzo(a)anthracene Benzo(b)fluoranthene Chrysene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-11 (Reanalysis 12-23-08)	Bis(2-ethylhexyl)phthalate Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol 2-Methylphenol 3&4-Methylphenol 4-Nitrophenol Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-11 (Reanalysis 12-23-08)	Acenaphthene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-12 (Reanalysis 12-24-08)	Acenaphthene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluorene Indeno(1,2,3-cd)pyrene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-12 (Reanalysis 12-24-08)	Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Fluoranthene Phenanthrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-13 (Reanalysis 12-23-08)	Acenaphthene Anthracene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Dibenz(a,h)anthracene Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluorene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-13 (Reanalysis 12-23-08)	Benzo(a)anthracene Benzo(b)fluoranthene Benzo(a)pyrene Chrysene Fluoranthene Indeno(1,2,3-cd)pyrene Phenanthrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-14 (Reanalysis 12-23-08)	Acenaphthene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluoranthene Fluorene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-14 (Reanalysis 12-23-08)	Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Phenanthrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-15 (Reanalysis 12-23-08)	Acenaphthene Anthracene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Dibenz(a,h)anthracene Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluoranthene Fluorene 2-Methylphenol 3&4-Methylphenol 4-Nitrophenol Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-15 (Reanalysis 12-23-08)	Benzo(a)anthracene Benzo(b)fluoranthene Benzo(a)pyrene Chrysene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-16 (Reanalysis 12-24-08)	Acenaphthene Anthracene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Dibenz(a,h)anthracene Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluorene Indeno(1,2,3-cd)pyrene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-16 (Reanalysis 12-24-08)	Benzo(a)anthracene Benzo(b)fluoranthene Benzo(a)pyrene Chrysene Fluoranthene Phenanthrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-17 (Reanalysis 12-23-08)	Acenaphthene Anthracene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluoranthene Fluorene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenanthrene Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-17 (Reanalysis 12-23-08)	Benzo(a)anthracene Benzo(b)fluoranthene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-18 (Reanalysis 12-23-08)	Acenaphthene Anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Dibenz(a,h)anthracene Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenanthrene Phenol Pyrene Pyridine Quinoline	UJ	Holding time exceedance.
TR-18 (Reanalysis 12-23-08)	Benzo(a)anthracene Benzo(a)pyrene Chrysene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-19 (Reanalysis 12-23-08)	Acenaphthene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluorene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-19 (Reanalysis 12-23-08)	Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Fluoranthene Indeno(1,2,3-cd)pyrene Phenanthrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-20 (Reanalysis 12-23-08)	Acenaphthene Anthracene Bis(2-ethylhexyl)phthalate Dibenz(a,h)anthracene Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluorene Indeno(1,2,3-cd)pyrene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-20 (Reanalysis 12-23-08)	Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Chrysene Fluoranthene Phenanthrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-21 (Reanalysis 12-23-08)	Acenaphthene Anthracene Benzo(a)anthracene Bis(2-ethylhexyl)phthalate Chrysene Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluoranthene Fluorene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenanthrene Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-21 (Reanalysis 12-23-08)	Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-22 (Reanalysis 12-23-08)	Acenaphthene Anthracene Bis(2-ethylhexyl)phthalate Dibenz(a,h)anthracene Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenanthrene Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-22 (Reanalysis 12-23-08)	Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Chrysene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-24 (Reanalysis 12-23-08)	Acenaphthene Anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenanthrene Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-24 (Reanalysis 12-23-08)	Benzo(a)anthracene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-26 (Reanalysis 12-23-08)	Acenaphthene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Chrysene Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate 2,4-Dimethylphenol Dimethylphthalate 2,4-Dinitrophenol Fluoranthene Fluorene 2-Methylphenol 3&4-Methylphenol Naphthalene 4-Nitrophenol Phenanthrene Phenol Pyridine Quinoline	UJ	Holding time exceedance.
TR-26 (Reanalysis 12-23-08)	Benzo(a)pyrene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Pyrene	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-16 (Reanalysis 12-24-08)	Acenaphthene Anthracene Benzo(k)fluoranthene Bis(2-ethylhexyl)phthalate Dibenz(a,h)anthracene Di-n-butylphthalate 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Diethylphthalate Dimethylphthalate Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Pyridine Quinoline	UJ	Low surrogate recovery.
TR-16 (Reanalysis 12-24-08)	Benzo(a)anthracene Benzo(b)fluoranthene Benzo(a)pyrene Chrysene Fluoranthene Phenanthrene Pyrene	J	Low surrogate recovery.
TR-25	2,4-Dimethylphenol 2,4-Dinitrophenol 2-Methylphenol 3&4-Methylphenol 4-Nitrophenol Phenol	UJ	Low surrogate recovery.
TR-31	2,4-Dimethylphenol 2,4-Dinitrophenol 2-Methylphenol 3&4-Methylphenol 4-Nitrophenol Phenol	UJ	Low surrogate recovery.
TR-13	Antimony	UJ	Low MS/MSD recovery.
TR-13	Magnesium	J	Low MS/MSD recovery.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-13	Zinc	J	MS/MSD recovery outside acceptance criteria and elevated MS/MSD RPD.
TR-23	Antimony	UJ	Low MS/MSD recovery.
TR-23	Barium Lead Magnesium Nickel Vanadium Zinc	J	Low MS/MSD recovery.
TR-23	Arsenic Cobalt Magnesium Nickel Zinc	J	Serial dilution outside acceptance criteria.
TR-13	Manganese	J	Low post digestion spike recovery.
TR-13	Zinc	J	Laboratory duplicate outside acceptance criteria.

J – The analyte was positively identified, the quantitation is an estimation.

UJ – Potential false negative due to low QC recoveries.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. F706

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from TestAmerica Laboratories, Inc. for the analysis of soil samples collected December 10, 2008 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the soil at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 –Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and Methyl-tert Butyl Ether (MTBE) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8270 Skinner List – Semivolatile Organic Compounds (SVOC) by GC/MS;
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- SW-846 6010 Skinner List – Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES); and
- SW-846 7471 – Mercury by manual cold-vapor.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Six (6) soil samples were analyzed for BTEX, MTBE, SVOCs, DRO, GRO and metals. One (1) trip blank was submitted to the laboratory and was analyzed for BTEX and MTBE. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the detection limit (DL). Soil sample results and detection limits were adjusted for moisture content. Qualified sample data is included on Table 2.

DLs for samples TR-32, TR-75, TR-33, TR-34, TR-35 and TR-36 were elevated for SVOC analysis due to sample dilution necessary for sample matrix effects. DLs for sample TR-36 were elevated for mercury analysis due to sample dilution necessary for high concentrations of target analytes.

According to TestAmerica, six (6) analytes (xylenes, 2,4-dinitrophenol, 3&4-Methylphenol, 4-nitrophenol, pyridine and quinoline) did not meet the client reporting limits and were shown as J flagged above the method detection limit (MDL).

According to TestAmerica, benzo(b)fluoranthene and benzo(k)fluoranthene could not be separated in sample TR-32. The final combined value was reported for benzo(b)fluoranthene.

SVOC samples TR-32, TR-75, TR-33, TR-34, TR-35 and TR-36 had an adjusted final volume during extraction and gel permeation chromatography (GPC) cleanup. DRO samples TR-32, TR-75, TR-33, TR-34, TR-35 and TR-36 had an adjusted final volume due to extract viscosity.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The laboratory sample receipt checklists stated the samples were

received within 2°C and 6°C. One trip blank was listed on the C-O-C and was marked for analysis.

Calibrations

Calibrations were within range for BTEX, MTBE, DRO, GRO and metals.

SVOCs initial calibration curve A8I0000995-1 for 2,4-dinitrophenol had greater than 15% relative standard deviation (RSD) and was calibrated using linear regression. Since the average RSD was less than 15% and no individual compound exceeded an RSD of 30%, qualification was not required.

Blanks

BTEX, MTBE, SVOCs, DRO, GRO and metals were reported as not-detected in the method blanks.

One (1) trip blank was reported as not-detected for BTEX and MTBE.

Internal Standard and Surrogate Recoveries

BTEX, MTBE and GRO surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Methods 8260 and 8270.

SVOC samples TR-32, TR-75, TR-33, TR-34, TR-35 and TR-36 had all surrogates diluted out of the samples, due to dilutions necessary for sample analysis. No qualification was required for diluted surrogates.

DRO samples TR-32, TR-75, TR-33, TR-34, TR-35 and TR-36 had zero percent surrogate recovery for o-terphenyl. Samples TR-32, TR-75, TR-33, TR-34, TR-35 and TR-36 were reported as detected for DRO and were qualified as estimated (J) for DRO, due to low surrogate recovery.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for BTEX, MTBE, SVOCS, metals, DRO and GRO.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) for BTEX, MTBE analyzed on site sample TR-32 was within acceptance limits.

GRO MS/MSD analyzed on sample TR-32 had elevated recovery of GRO and elevated relative percent difference (RPD). Sample TR-32 was reported as not-detected for GRO and did not require qualification.

DRO MS/MSD analyzed on sample TR-32 had elevated recovery of DRO and elevated RPD. The amount spiked was less than four times the unspiked parent sample and may not represent the matrix effect and was not used for qualification.

SVOC MS/MSD analyzed on sample TR-32 had low recovery for diethylphthalate, dimethylphthalate, indeno(1,2,3-cd)pyrene, and 4-nitrophenol. Sample TR-32 was qualified as estimated (UJ or J) for the four listed compounds, due to low MS/MSD recovery. This MS/MSD also had zero recovery for 2,4-dinitrophenol and sample TR-32 was qualified as rejected (R). Pyrene had elevated MS/MSD recovery and sample TR-32 was qualified as estimated (J) for pyrene. SVOC MS/MSD RPD was elevated for benzo(a)anthracene, benzo(a)pyrene, diethylphthalate, dimethylphthalate, 4-nitrophenol and pyrene. Sample TR-32 was qualified as estimated (J or UJ) for the listed compounds, due to elevated MS/MSD RPD.

Metals MS/MSD analyzed on sample TR-32 had low recovery for barium and zinc, elevated recovery for manganese and both elevated and low recovery for lead. The amount of barium, manganese, lead and zinc spiked was less than four times the unspiked parent sample and may not represent the matrix effect and was not used for qualification.

Post Digestion Spikes and Serial Dilutions

The post digestion spike analyzed on sample TR-32 had low recovery for manganese and was qualified as estimated (J). The serial dilution analyzed on sample TR-32 had elevated percent difference for arsenic and cadmium. Sample TR-32 was qualified as estimated (J) for arsenic and cadmium, due to serial dilution outside acceptance criteria.

Laboratory Duplicates

The metals laboratory duplicate analyzed on sample TR-32 had elevated RPD for lead. The QAPP does not require qualification for laboratory duplicates outside acceptance criteria.

Field Precision

One field duplicate sample was included in this data package (TR-32/TR-75). Both sample and duplicate were reported as detected or estimated detected (J flagged) for

DRO, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, chrysene, pyrene, arsenic, barium, beryllium, cadmium, chromium, cobalt, lead, magnesium, manganese, nickel, potassium, mercury, vanadium and zinc. Additionally, sample TR-32 was reported as estimated detected for indeno(1,2,3-cd)pyrene. Sample/duplicate precision calculations were less than the QAPP 50% RPD for organics for DRO, benzo(a)anthracene and benzo(b)fluoranthene. Organics RPD was elevated for benzo(a)pyrene, chrysene and indeno(1,2,3-cd)pyrene. Sample/duplicate precision calculations were less than the QAPP 30% RPD for inorganics for arsenic, barium, beryllium, cadmium, cobalt, lead, magnesium, manganese, nickel, potassium, mercury, vanadium and zinc. Chromium exceeded the 30% RPD. The QAPP does not require qualification for sample/duplicate precision outside acceptance criteria.

Summary

The soil analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property. Except for 2,4-dinitrophenol in sample TR-32 was qualified as rejected (R), due to zero percent MS/MSD recovery.

The data user is advised that samples TR-32, TR-75, TR-33, TR-34, TR-35 and TR-36 were qualified as estimated (J) for DRO, due to low surrogate recovery. Sample TR-32 was qualified as estimated (UJ or J) for diethylphthalate, dimethylphthalate, indeno(1,2,3-cd)pyrene, and 4-nitrophenol, due to low MS/MSD recovery. Sample TR-32 was qualified as estimated (J) for pyrene, due to elevated MS/MSD recovery. Sample TR-32 was qualified as estimated (J or UJ) benzo(a)anthracene, benzo(a)pyrene, diethylphthalate, dimethylphthalate, 4-nitrophenol and pyrene the listed compounds, due to elevated MS/MSD RPD. Sample TR-32 was qualified as estimated (J) for manganese, due to low post digestion spike recovery. Sample TR-32 was qualified as estimated (J) for arsenic and cadmium, due to serial dilution outside acceptance criteria.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
A8F70601	TR-32	Soil
A8F70603	TR-33	Soil
A8F70604	TR-34	Soil
A8F70605	TR-35	Soil
A8F70606	TR-36	Soil
A8F70602	TR-75	Soil
A8F70607	TRIP BLANK	Water

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-32	2,4-Dinitrophenol	R	Zero percent MS/MSD recovery.
TR-32 TR-75 TR-33 TR-34 TR-35 TR-36	DRO	J	Low surrogate recovery.
TR-32	Diethylphthalate Dimethylphthalate 4-Nitrophenol	UJ	Low MS/MSD recovery.
TR-32	Indeno(1,2,3-cd)pyrene	J	Low MS/MSD recovery.
TR-32	Pyrene	J	Elevated MS/MSD recovery.
TR-32	Diethylphthalate Dimethylphthalate 4-Nitrophenol	UJ	Elevated MS/MSD RPD.
TR-32	Benzo(a)anthracene Benzo(a)pyrene Pyrene	J	Elevated MS/MSD RPD.
TR-32	Manganese	J	Low post digestion spike recovery.
TR-32	Arsenic Cadmium	J	Low serial dilution percent difference.

J – The analyte was positively identified, the quantitation is an estimation.

UJ – Potential false negative due to low QC recoveries.

R – The data are rejected and may not be usable due to QC deficiencies.

Table 3
Field Precision

Field Identification	Analyte	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD[a]	Qualified
TR-32/TR-75	DRO	150	160	6	A
	Arsenic	5.5	5.7	4	A
	Barium	153	147	4	A
	Beryllium	0.79	0.82	4	A
	Cadmium	1	1	0	A
	Chromium	23.2	39.6	52	X
	Cobalt	7.2	7.1	2	A
	Lead	93.8	106	12	A
	Magnesium	3000	2920	3	A
	Manganese	366	367	0	A
	Nickel	19.9	20.5	3	A
	Potassium	2620	2680	1	A
	Mercury	0.084	0.069	20	A
	Vanadium	38.1	41.4	8	A
	Zinc	62.4	64.9	4	A

Table 3 Continued
Field Precision

Field Identification	Analyte	Sample Result (ug/kg)	Duplicate Result (ug/kg)	RPD[a]	Qualified
TR-32/TR-75	Benzo(a)anthracene	1400 J	2300	49	A
	Benzo(b)fluoranthene	1700 J	2600 J	42	A
	Benzo(a)pyrene	3200 J	7000 J	75	X
	Chrysene	4000 J	7500 J	61	X
	Indeno(1,2,3-cd)pyrene	890 J	12000 U	172	X
	Pyrene	2000 J	3400 J	52	X

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data
X – Sample/duplicate precision outside acceptance criteria of 50% RPD for organics or 30% RPD for inorganics.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. RSA0244

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from TestAmerica Laboratories, Inc. for the analysis of soil samples collected January 8 and 9, 2009 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the soil at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 Skinner List – Volatile Organic Compounds (VOCs) by gas chromatography/mass spectrometry (GC/MS); and
- SW-846 6010– Lead by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES).

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

One (1) soil sample was analyzed for VOCs and sixty-one (61) soil samples were analyzed for lead. One (1) trip blank was submitted to the laboratory and was analyzed for VOCs. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the detection limit (DL). Soil sample results and detection limits were adjusted for moisture content. Qualified sample data is included on Table 2.

According to TestAmerica, three (3) analytes (xylenes, 1,4-dioxane and 2-butanone) did not meet the client reporting limits and were shown as J flagged above the method detection limit (MDL).

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The C-O-C's stated the samples were received within 2°C and 6°C. Sample TW-107 (16-17) was analyzed outside holding time for VOCs. Detections of VOCs were qualified as estimated (J) and VOCs reported as not-detected were qualified as non-detect estimated (UJ) for sample TW-107 (16-17), due to holding time exceedance.

Calibrations

Calibrations were within range for VOCs and metals.

Blanks

Metals batches 9A13023, 9A15093 and 9A15092 were reported as not-detected for lead in the method blanks. Metals batch 9A13021 had a detection of lead reported below the method detection limit (MDL). This was not considered a true detection since it was below the instrument MDL and no flags were added to the lead data for this batch.

VOCs batch 9A22037 had naphthalene reported at 1.2 B ug/kg in the method blank. The associated sample (TW-107 (16-17)) was not reported for naphthalene, and did not require qualification.

The trip blank was reported as not-detected for VOCs.

Internal Standard and Surrogate Recoveries

VOCs surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Method 8260.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for VOCs batch 9A22037. VOCs batch 9A21050 had elevated LCS recovery for 1,2,3-trichlorobenzene and 1,2,4-trichlorobenzene and low recovery for acrolein. These three compounds were not reported in the associated sample (Trip Blank), and did not require qualification.

Lead LCS recovery was within acceptance limits.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was not analyzed for VOCs. According to TestAmerica, a MS/MSD was not analyzed, due to insufficient sample volume supplied to the laboratory.

Lead MS/MSD analyzed on sample (0-2) and lead MS/MSD analyzed on sample SB-39 (2-4) had elevated percent recovery for lead. The amount of lead spiked in the MS/MSDs was less than four times the unspiked parent sample and may not represent the matrix effect and were not qualified.

Lead MS/MSD analyzed on sample TW-123 (0-2) had low percent recovery and elevated percent difference (RPD) for lead. Sample TW-123 (0-2) was qualified as estimated (J) for lead, due to low MS/MSD recovery. Sample TW-123 (0-2) was also qualified as estimated (J) for lead, due to elevated MS/MSD RPD.

Lead MS/MSD analyzed on sample SB-41 (0-2) had elevated percent recovery for lead. Sample SB-41 (0-2) was qualified as estimated (J) for lead, due to elevated MS/MSD recovery.

Post Digestion Spikes and Serial Dilutions

The post digestion spikes (PDS) for lead batches 9A15092, 9A13023 and 9A15093 were within laboratory acceptance criteria. The PDS for batch 9A13021 analyzed on sample TW-123 (0-2) was below acceptance limits. Sample TW-123 (0-2) was qualified as estimated (J) for lead, due to the PDS outside acceptance limits.

Serial dilution was not analyzed for lead batches 9A15093 and 9A13023. Serial dilutions for batch 9A15092 analyzed on samples SB-41 (0-2) and SB-39 (2-4) were outside

acceptance criteria for lead. Samples SB-41 (0-2) and SB-39 (2-4) were qualified as estimated (J) for lead, due to serial dilution outside acceptance criteria.

Laboratory Duplicates

Laboratory duplicates were not analyzed as part of this data package.

Field Precision

Field duplicate samples were not included as part of this data package.

Summary

The soil analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that sample TW-107 (16-17) was qualified as estimated (J or UJ) for VOCs, due to holding time exceedance. Sample SB-41 (0-2) was qualified as estimated (J) for lead, due to elevated MS/MSD recovery. Sample TW-123 (0-2) was qualified as estimated (J) for lead, due to low MS/MSD recovery and elevated MS/MSD RPD. Sample TW-123 (0-2) was qualified as estimated (J) for lead, due to the PDS outside acceptance limits. Samples SB-41 (0-2) and SB-39 (2-4) were qualified as estimated (J) for lead, due to serial dilution outside acceptance criteria.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
RSA0244-01	TW-107 (16-17)	Soil
RSA0244-02	TW-123 (0-2)	Soil
RSA0244-03	TW-123 (2-4)	Soil
RSA0244-04	TW-123 (4-6)	Soil
RSA0244-05	TW-123 (6-8)	Soil
RSA0244-06	TW-123 (8-10)	Soil
RSA0244-07	TW-123 (10-12)	Soil
RSA0244-08	TW-123 (12-14)	Soil
RSA0244-09	TW-123 (14-16)	Soil
RSA0244-10	SB-43 (0-2)	Soil
RSA0244-11	SB-43 (2-4)	Soil
RSA0244-12	SB-43 (4-6)	Soil
RSA0244-13	SB-43 (6-8)	Soil
RSA0244-14	SB-43 (8-10)	Soil
RSA0244-15	SB-43 (10-12)	Soil
RSA0244-16	SB-43 (12-14)	Soil
RSA0244-17	SB-43 (14-16)	Soil
RSA0244-18	TRIP BLANK	Water
RSA0246-01	SB-44 (0-2)	Soil
RSA0246-02	SB-44 (2-4)	Soil
RSA0246-13	SB-44 (4-6)	Soil
RSA0246-04	SB-44 (6-8)	Soil
RSA0246-05	SB-44 (8-10)	Soil
RSA0246-06	SB-44 (10-12)	Soil
RSA0246-07	SB-44 (12-14)	Soil
RSA0246-08	SB-44 (14-16)	Soil
RSA0246-09	SB-42 (0-2)	Soil
RSA0246-10	SB-42 (2-4)	Soil
RSA0246-11	SB-42 (4-6)	Soil

Table 1 Continued
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
RSA0246-12	SB-42 (6-8)	Soil
RSA0246-13	SB-42 (8-10)	Soil
RSA0246-14	SB-42 (10-12)	Soil
RSA0246-15	SB-42 (12-14)	Soil
RSA0246-16	SB-42 (14-16)	Soil
RSA0324-01	SB-39 (2-4)	Soil
RSA0324-02	SB-39 (4-6)	Soil
RSA0324-03	SB-39 (6-8)	Soil
RSA0324-04	SB-39 (8-10)	Soil
RSA0324-05	SB-39 (10-12)	Soil
RSA0324-06	SB-39 (12-14)	Soil
RSA0324-07	SB-39 (14-16)	Soil
RSA0324-08	SB-39 (16-18)	Soil
RSA0324-09	SB-39 (18-20)	Soil
RSA0324-10	SB-40 (0-2)	Soil
RSA0324-11	SB-40 (2-4)	Soil
RSA0324-12	SB-40 (4-6)	Soil
RSA0324-13	SB-40 (6-8)	Soil
RSA0324-14	SB-40 (8-10)	Soil
RSA0324-15	SB-40 (10-12)	Soil
RSA0324-16	SB-40 (12-14)	Soil
RSA0324-17	SB-40 (14-16)	Soil
RSA0324-18	SB-40 (16-18)	Soil
RSA0324-19	SB-40 (18-20)	Soil
RSA0326-01	SB-41 (0-2)	Soil
RSA0326-02	SB-41 (2-4)	Soil
RSA0326-03	SB-41 (4-6)	Soil
RSA0326-04	SB-41 (6-8)	Soil
RSA0326-05	SB-41 (8-10)	Soil

Table 1 Continued
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
RSA0326-06	SB-41 (10-12)	Soil
RSA0326-07	SB-41 (12-14)	Soil
RSA0326-08	SB-41 (14-16)	Soil
RSA0326-09	SB-41 (16-18)	Soil
RSA0326-10	SB-41 (18-20)	Soil

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-107 (16-17)	1,1,1-Trichloroethane 1,1-Dichloroethane 1,2-Dibromoethane 1,2-Diclorobenzene 1,2-Dichloroethane 1,4-Dioxane 2-Butanone Carbon disulfide Chlorobenzene Chloroform Styrene Tetrachloroethene Toluene Trichloroethene Xylenes	UJ	Holding time exceedance.
TW-107 (16-17)	Benzene Ethylbenzene Methyl tert-butyl ether	J	Holding time exceedance.
SB-41 (0-2)	Lead	J	Elevated MS/MSD recovery.
TW-123 (0-2)	Lead	J	Low MS/MSD recovery.
TW-123 (0-2)	Lead	J	Elevated MS/MSD RPD.
TW-123 (0-2)	Lead	J	Low post digestion spike recovery.
SB-41 (0-2) SB-39 (2-4)	Lead	J	Serial dilution outside acceptance criteria.

J – The analyte was positively identified, the quantitation is an estimation.

UJ – Potential false negative due to low QC recoveries.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. RSA0754

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed a data package from TestAmerica Laboratories, Inc. for the analysis of soil samples collected December 3, 4, 5, 8 and 10, 2008 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the soil at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 –Volatile Organic Compounds (VOCs) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 7470 – Mercury by manual cold vapor;
- SW-846 6010– Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES); and
- SW-846 1311 – Toxicity Characteristic Leaching Procedure (TCLP) for metals, mercury and VOCs.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Fourteen (14) soil samples were analyzed for TCLP metals and TCLP mercury. One (1) soil sample was also analyzed for TCLP VOCs. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the reporting limit (RL).

RLs for samples TR-11, TR-12, TR-21 and TR-26 were elevated for TCLP metals analysis due to sample dilution necessary for high concentrations of target analytes.

RLs for sample TR-11 were elevated for TCLP VOCs analysis due to sample dilution necessary for high concentrations of target analytes.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The C-O-Cs stated the samples were received within 2°C and 6°C.

Sample TR-11 was analyzed outside holding time for TCLP VOCs and was qualified as estimated (J or UJ), due to holding time exceedance. All soil samples were analyzed outside holding time for TCLP mercury, and were qualified as estimated (UJ).

Calibrations

Calibrations for TCLP metals, TCLP mercury and TCLP VOCs were within laboratory acceptance criteria.

Blanks

Mercury was reported as not-detected in the method blanks.

TCLP metals batch 9A26048 was reported as detected for barium (0.013 mg/L) in the method blank. Samples TR-12, TR-21 and TR-26 were qualified as estimated (B) for barium, due to method blank contamination.

TCLP metals batch 9A26050 was reported as detected for barium (0.0035 mg/L) and chromium (0.0014 J mg/L) in the method blank. Samples TR-10, TR-11, TR-17, TR-19,

TR-20, TR-22, TR-24, TR-27, TR-30, TR-31 and TR-75 were qualified as estimated (B) for barium, due to method blank contamination. Samples TR-10, TR-17, TR-19, TR-22, TR-24 and TR-30 were qualified as estimated (B) for chromium, due to method blank contamination.

TCLP VOCs method blank was reported as detected for chloroform (18 ug/L). Associated sample TR-11 was qualified as estimated (B) for chloroform, due to method blank contamination.

Internal Standard and Surrogate Recoveries

TCLP VOCs surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Methods 8260.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for TCLP metals, TCLP mercury and TCLP VOCs.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was not analyzed for TCLP metals, TCLP mercury or TCLP VOCs. The laboratory did not provide information regarding the lack of MS/MSD analysis for this laboratory package.

Post Digestion Spikes and Serial Dilutions

Post digestion spike (PDS) and serial dilution analysis was not required for TCLP metals, TCLP mercury and TCLP VOCs.

Laboratory Duplicates

Laboratory duplicate analysis was not required for TCLP metals, TCLP mercury and TCLP VOCs.

Field Precision

One (1) field duplicate sample (TR-75) was analyzed in this data package for TCLP metals and TCLP mercury. However, the corresponding field sample (TR-32) was not analyzed for TCLP metals and TCLP mercury; therefore, a sample/duplicate precision calculation could not be performed.

Summary

The soil analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that sample TR-11 was analyzed outside holding time for TCLP VOCs and was qualified as estimated (J or UJ), due to holding time exceedance. All soil samples were analyzed outside holding time for TCLP mercury, and were qualified as estimated (UJ).

Samples TR-10, TR-11, TR-12, TR-17, TR-19, TR-20, TR-21, TR-22, TR-24, TR-26, TR-27, TR-30, TR-31 and TR-75 were qualified as estimated (B) for barium, due to method blank contamination. Samples TR-10, TR-17, TR-19, TR-22, TR-24 and TR-30 were qualified as estimated (B) for chromium, due to method blank contamination. Sample TR-11 was qualified as estimated (B) for chloroform, due to method blank contamination.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
RSA0754-01	TR-10	Soil
RSA0754-02	TR-11	Soil
RSA0754-03	TR-12	Soil
RSA0754-04	TR-17	Soil
RSA0754-05	TR-19	Soil
RSA0754-06	TR-20	Soil
RSA0754-07	TR-21	Soil
RSA0754-08	TR-22	Soil
RSA0754-09	TR-24	Soil
RSA0754-10	TR-26	Soil
RSA0754-11	TR-27	Soil
RSA0754-12	TR-30	Soil
RSA0754-13	TR-31	Soil
RSA0754-14	TR-75	Soil

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-11	TCLP VOCs: 1,1-Dichloroethene 1,2-Dichloroethane 2-Butanone Carbon tetrachloride Chlorobenzene Tetrachloroethene Trichloroethene Vinyl chloride	UJ	Analyzed outside holding time.
TR-11	TCLP VOCs: Benzene Chloroform	J	Analyzed outside holding time.
TR-10 TR-11 TR-12 TR-17 TR-19 TR-20 TR-21 TR-22 TR-24 TR-26 TR-27 TR-30 TR-31 TR-75	TCLP Mercury	UJ	Analyzed outside holding time.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TR-10 TR-11 TR-12 TR-17 TR-19 TR-20 TR-21 TR-22 TR-24 TR-26 TR-27 TR-30 TR-31 TR-75	TCLP Barium	B	Method blank contamination.
TR-10 TR-17 TR-19 TR-22 TR-24 TR-30	TCLP Chromium	B	Method blank contamination.
TR-11	TCLP VOCs: Chloroform	B	Method blank contamination.

UJ – Potential false negative due to low QC recoveries.

J – The analyte was positively identified, the quantitation is an estimation.

B – The analyte was found in an associated blank, as well as in the sample.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. RSE0911

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from TestAmerica Laboratories, Inc. for the analysis of soil samples collected May 26, 27, 28 and 29, 2009 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the soil at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 –Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8270 Skinner List – Semivolatile Organic Compounds (SVOC) by GC/MS;
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- SW-846 6010 Skinner List – Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES); and
- SW-846 7471 – Mercury by manual cold-vapor.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Twelve (12) soil samples were analyzed for BTEX, SVOCs, DRO, GRO and metals. Three (3) trip blanks were submitted to the laboratory and were analyzed for BTEX. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the reporting limit (RL). Soil sample results and detection limits were adjusted for moisture content. Qualified sample data is included on Table 2.

DLs for sample PSB-28-2-4, PSB-28-5-7, PSB-28-8-10, PSB-30-7-8.5, PSB-30-7-8.5 re-extraction and PSB-33-2-4 were elevated for SVOC analysis due to sample dilution necessary for sample matrix effects and high concentrations of target analytes. DLs for samples PSB-27-2-4, PSB-28-2-4, PSB-28-5-7, PSB-28-8-10, PSB-30-7-8.5, PSB-31-2-4, PSB-32-2-4, PSB-33-2-4 and PSB-34-2-4 were elevated for GRO analysis due to sample dilution necessary for high concentrations of target analytes. DLs for samples PSB-28-2-4, PSB-28-5-7, PSB-28-8-10, PSB-30-7-8.5, PSB-31-2-4, PSB-32-2-4 and PSB-33-2-4 were elevated for DRO analysis due to sample dilution necessary for high concentrations of target analytes. DLs for sample PSB-31-2-4, PSB-33-2-4 reanalysis and PSB-34-2-4 reanalysis were elevated for BTEX analysis due to sample dilution necessary for high concentrations of target analytes.

RLs for samples PSB-27-2-4 reanalysis, PSB-28-2-4 reanalysis, PSB-28-5-7 reanalysis, PSB-30-7-8.5 reanalysis and PSB-32-2-4 were elevated for BTEX analysis due to reanalysis at medium level caused by surrogate failure of low level analysis.

According to TestAmerica, six (6) analytes (xylenes, 2,4-dinitrophenol, 3&4-methylphenol, 4-nitrophenol, pyridine and quinoline) did not meet the client reporting limits and were shown as J flagged above the method detection limit (MDL).

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork

filled out properly. The laboratory sample receipt checklists stated the samples were received within 2°C and 6°C. BTEX sample PSB-31-2-4 was analyzed outside holding time and was qualified as estimated (J) for BTEX, due to holding time exceedance.

According to MWH, samples PSB-27-2-4, PSB-28-2-4, PSB-28-5-7 and PSB-28-8-10 were mislabeled on the C-O-C. The revised names for the samples are PSB-35-2-4, PSB-36-2-4, PSB-36-5-7 and PSB-36-8-10, respectively. For the purposes of this report, the original names matching the laboratory data package were used.

Calibrations

Calibrations were within range for DRO/GRO and metals.

BTEX initial calibration curve R9E2203 had elevated relative standard deviation (RSD) for chlorodifluoromethane, 1,2-dibromo-3-chloropropane and 2-nitropropane. These compounds were not reported and did not require qualification.

SVOCs initial calibration curve R9F0205 for pentachlorophenol had greater than 15% RSD and was calibrated using linear regression. Pentachlorophenol was not reported in the data and did not required qualification.

BTEX continuing calibration verification (CCV) RF90402 had greater than 20% difference for 1,2-dibromo-3-chloropropane, acrolein, bromoform, methyl acetate, trans-1,4-dichloro-2-butene, vinyl acetate and cyclohexane. Associated samples were not reported for these compounds and did not require qualification.

BTEX continuing calibration verification (CCV) RF90408 had greater than 20% difference for isopropylbenzene, methylene chloride, n-butylbenzene, n-propylbenzene, p-cymene, sec-butylbenzene and tert-butylbenzene. Associated samples were not reported for these compounds and did not require qualification.

BTEX continuing calibration verification (CCV) RF90501 had greater than 20% difference for 1,1,2-trichlorotrifluoroethane, 1,2-dibromo-3-chloropropane, acrolein, chloroethane, methylacetate, trans-1,4-dichloro-2-butene and vinyl acetate. Associated samples were not reported for these compounds and did not require qualification.

BTEX continuing calibration verification (CCV) RF90703 had greater than 20% difference for 1,1,2-trichlorotrifluoroethane, 1,1,2-trichlorotrifluoroethane, 1,2-dibromo-3-chloropropane, acrolein, bromomethane, carbon disulfide, chloroethane, methyl acetate, naphthalene, vinyl acetate and cyclohexane. Associated samples were not reported for these compounds and did not require qualification.

BTEX continuing calibration verification (CCV) RF90128 had greater than 20% difference for 1,1-dimethoxyethane, 1,4-dioxane, 2-nitropropane, diethyl ether, epichlorohydrin,

ethyl acetate, isobutanol, isopropyl ether, methacrylonitrile, methyl methacrylate, n-butanol, propionitrile, propylene oxide and t-butanol . Associated samples were not reported for these compounds and did not require qualification.

BTEX continuing calibration verification (CCV) RF91109 had greater than 20% difference for 1,2-dibromo-3-chloropropane, acrolein, carbon disulfide, dichlorodifluoromethane, methyl acetate, 2-nitropropane and cyclohexane. Associated samples were not reported for these compounds and did not require qualification.

GRO CCVs were compliant for gasoline range organics, but outside the 25% difference for surrogate a,a,a-trifluorotoluene. Since GRO was compliant, no qualification was required.

Blanks

DRO, GRO, SVOCs, mercury and BTEX were reported as not-detected in the method blanks.

Metals batch 9F01009 had detections of barium (0.028J mg/kg), lead (0.1J mg/kg) and zinc (0.7J mg/kg) in the method blank. The associated samples, PSB-28-2-4, PSB-28-5-7, PSB-28-8-10, PSB-29-2-4, PSB-30-2-4, PSB-30-5-7, PSB-30-7-8.5, PSB-31-2-4 and PSB-32-2-4 were reported as detected for barium, lead and zinc, and were qualified as estimated (B), due to method blank contamination.

Metals batch 9F03061 had detections of arsenic (0.2J mg/kg), barium (0.029J mg/kg), beryllium (0.017J mg/kg), lead (0.2J mg/kg), vanadium (0.070J mg/kg) and zinc (0.5J mg/kg) in the method blank. The associated samples, PSB-33-2-4 and PSB-34-2-4 were reported as detected for arsenic, barium, beryllium, lead, vanadium and zinc, and were qualified as estimated (B), due to method blank contamination.

Metals batch 9E28009 had detections of manganese (0.2 mg/kg) and zinc (0.7J mg/kg). Sample PSB-27-2-4 was reported as detected for manganese and zinc, and was qualified as estimated (B), due to method blank contamination.

Three (3) trip blanks were submitted to the laboratory and reported as not-detected for BTEX.

Internal Standard and Surrogate Recoveries

GRO surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Method 8270.

BTEX batches 9F09075 and 9F11035 had low internal standard recovery for the associated method blanks. Associated samples had internal standard recoveries within

acceptance limits and did not require qualification. BTEX batch 9F10035 had low internal standard recovery for the laboratory control spike. Associated samples had internal standard recoveries within acceptance limits and did not require qualification. BTEX batch 9F01085 had low internal standard recovery for PSB-33-2-4. Benzene, toluene and ethylbenzene were qualified as estimated (J) and xylene was qualified as non-detect estimated (UJ), due to low internal standard recovery.

SVOC PSB-30-7-835 reanalysis had surrogate 2,4,6-tribromophenol diluted out of the re-extraction analysis. Per the QAPP, qualification was not needed for the surrogate diluted out of the sample.

DRO samples PSB-30-7-8.5, PSB-32-2-4 and PSB-33-2-4 had surrogate recovery diluted out of the listed samples. Per the QAPP, qualification was not needed for surrogates diluted out of the samples.

BTEX samples PSB-28-2-4, PSB-28-5-7, PSB-30-7-8.5, PSB-27-2-4 and PSB-33-2-4 had elevated surrogate recovery. The listed samples were qualified as estimated (J) for detections of BTEX, due to elevated surrogate recovery.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for BTEX, metals, DRO and GRO. BTEX batches 9F09075, 9F04035, 9F11063, 9F12077, 9F10035 and 9F11035 were spiked for benzene and toluene only. The laboratory did not give an explanation why all compounds were not spiked in the LCS.

SVOCs batch 9E29077 had elevated recovery for benzo(a)pyrene in the LCS. Benzo(a)pyrene was reported as not-detected in the associated samples and did not require qualification.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was not analyzed for BTEX, metals batches 9E28009 and 9F01009, mercury batch 9E28026, SVOCs, DRO and GRO. The laboratory did not state why a MS/MSD was not analyzed; however, it is usually due to insufficient sample volume supplied to the laboratory. Mercury batch 9F03035 and metals batch 9F08029 had MS/MSD within acceptance criteria.

Metals MS/MSD analyzed on sample PSB-34-2-4 had low percent recovery for antimony and elevated recovery for manganese. Sample PSB-34-2-4 was qualified as estimated (UJ) for antimony, due to low MS/MSD recovery. The amount of manganese spiked in the MS/MSD was less the four times the unspiked parent sample and may not represent the matrix effect and was not qualified.

Post Digestion Spikes and Serial Dilutions

The post digestion spike (PDS) analyzed on sample PSB-34-2-4 had low recovery for manganese. Sample PSB-34-2-4 was qualified as estimated (J) for manganese, due to low PDS recovery. The serial dilution analyzed on sample PSB-34-2-4 had elevated percent difference for beryllium. Sample PSB-34-2-4 was qualified as estimated (J) for beryllium, due to serial dilution outside acceptance criteria.

Laboratory Duplicates

The metals laboratory duplicates and percent moisture laboratory duplicates were not included with this report.

Field Precision

Field duplicate samples were not included as part of this data package.

Summary

The soil analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that sample PSB-31-2-4 was analyzed outside holding time and was qualified as estimated (J) for BTEX, due to holding time exceedance. Samples PSB-28-2-4, PSB-28-5-7, PSB-28-8-10, PSB-29-2-4, PSB-30-2-4, PSB-30-5-7, PSB-30-7-8.5, PSB-31-2-4 and PSB-32-2-4 were qualified as estimated (B) for barium, lead and zinc, due to method blank contamination. Samples PSB-33-2-4 and PSB-34-2-4 were qualified as estimated (B) for arsenic, barium, beryllium, lead, vanadium and zinc, due to method blank contamination. Sample PSB-27-2-4 was qualified as estimated (B) for manganese and zinc, due to method blank contamination. Samples PSB-28-2-4, PSB-28-5-7, PSB-30-7-8.5, PSB-27-2-4 and PSB-33-2-4 were qualified as estimated (J) for detections of BTEX, due to elevated surrogate recovery. BTEX batch 9F01085 had low internal standard recovery for PSB-33-2-4. Sample PSB-33-2-4 was qualified as estimated (J) for benzene, toluene and ethylbenzene and was qualified as non-detect estimated (UJ) for xylene, due to low internal standard recovery. Sample PSB-34-2-4 was qualified as estimated (UJ) for antimony, due to low MS/MSD recovery. Sample PSB-34-2-4 was qualified as estimated (J) for manganese, due to low PDS recovery. Sample PSB-34-2-4 was qualified as estimated (J) for beryllium, due to serial dilution outside acceptance criteria.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
RSE0911-01	PSB-27-2-4 (PSB-35-2-4)	Soil
RSE0967-01	PSB-28-2-4 (PSB-36-2-4)	Soil
RSE0967-02	PSB-28-5-7 (PSB-36-5-7)	Soil
RSE0967-03	PSB-28-8-10 (PSB-36-8-10)	Soil
RSE0967-04	PSB-29-2-4	Soil
RSE1027-01	PSB-30-2-4	Soil
RSE1027-02	PSB-30-5-7	Soil
RSE1027-03	PSB-30-7-8.5	Soil
RSE1027-04	PSB-31-2-4	Soil
RSE1027-05	PSB-32-2-4	Soil
RSE1059-01	PSB-33-2-4	Soil
RSE1059-02	PSB-34-2-4	Soil
RSE0911-02	TRIP BLANK (5-26-09)	Water
RSE0967-05	TRIP BLANK (5-27-09)	Water
RSE1027-06	TRIP BLANK (5-28-09)	Water

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
PSB-31-2-4	Benzene Ethylbenzene Toluene Xylenes	J	Holding time exceedance.
PSB-28-2-4 (PSB-36-2-4) PSB-28-5-7 (PSB-36-5-7) PSB-28-8-10 (PSB-36-8-10) PSB-29-2-4 PSB-30-2-4 PSB-30-5-7 PSB-30-7-8.5 PSB-31-2-4 PSB-32-2-4	Barium Lead Zinc	B	Method blank contamination.
PSB-33-2-4 PSB-34-2-4	Arsenic Barium Beryllium Lead Vanadium Zinc	B	Method blank contamination.
PSB-27-2-4 (PSB-35-2-4)	Manganese Zinc	B	Method blank contamination.
PSB-28-2-4 (PSB-36-2-4) PSB-28-5-7 (PSB-36-5-7) PSB-30-7-8.5 PSB-27-2-4 (PSB-35-2-4)	Benzene Toluene Ethylbenzene Xylenes	J	Elevated surrogate recovery.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
PSB-33-2-4	Benzene Toluene Ethylbenzene	J	Elevated surrogate recovery.
PSB-33-2-4	Benzene Toluene Ethylbenzene	J	Low internal standard recovery.
PSB-33-2-4	Xylenes	UJ	Low internal standard recovery.
PSB-34-2-4	Antimony	UJ	Low MS/MSD recovery.
PSB-34-2-4	Beryllium	J	Serial dilution outside acceptance criteria.
PSB-34-2-4	Manganese	J	Low post digestion spike recovery.

J – The analyte was positively identified, the quantitation is an estimation.

UJ – Potential false negative due to low QC recoveries.

B – Detected in the associated blank.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. E717

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from TestAmerica Laboratories, Inc. for the analysis of a groundwater sample collected November 18, 2008 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 Skinner List –Volatile Organic Compounds (VOCs) by gas chromatography/mass spectrometry (GC/MS); and
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID).

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

One (1) groundwater sample was analyzed for VOCs, DRO and GRO. One (1) trip blank was submitted to the laboratory and was analyzed for VOCs. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the detection limit (DL).

DLs for sample TW-111 were elevated for VOCs analysis due to sample dilution necessary for high concentrations of target analytes and excessive foaming. DLs for sample TW-111 were elevated for GRO analysis due to sample dilution necessary for high concentrations of target analytes.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. According to Doug Mick of MWH, the sample labeled on the C-O-C as TW-11 was mislabeled and should be listed as TW-111. The laboratory sample receipt checklists stated the samples were received within 2°C and 6°C. One trip blank was listed on the C-O-C and was marked for analysis.

Calibrations

Calibrations were within range for VOCs, DRO and GRO.

VOCs initial calibration curve A8I0000863-1 for bromomethane had greater than 15% RSD and was calibrated using linear regression. Since the average RSD was less than 15% qualification was not required. Additionally, methylene chloride had greater than 30% RSD; however, associated samples were reported as not-detected for methylene chloride and did not require qualification.

VOCs initial calibration curve A8I0000433-1 for 1,4-dioxane had greater than 15% RSD and was calibrated using linear regression. Associated samples were reported as not-detected for 1,4-dioxane and did not require qualification.

VOCs continuing calibration verification (CCV) A8C0003046-1 for acetone, bromoform, bromomethane, 2-butanone, 1,2-dibromoethane, methylene chloride, 4-methyl-2-pentanone 1,1,2,2-Tetrachloroethane and 1,1,2-trichloroethane had greater than 20% difference (D) and was calibrated using linear regression. Associated samples were reported as not-detected for the listed compounds and did not require qualification. This CCV also had greater than 20%D for chloroethane. Sample TW-111 was qualified as estimated (J) for chloroethane, due to elevated CCV recovery.

VOCs CCV A8C000309-2 had greater than 20% D for 1,4-dioxane. The associated samples were reported as not-detected for 1,4-dioxane and did not require qualification.

Blanks

VOCs, DRO and GRO metals were reported as not-detected in the method blanks.

The trip blank was reported as not-detected for VOCs.

Internal Standard and Surrogate Recoveries

VOCs, DRO and GRO surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Methods 8260.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for VOCs, DRO and GRO.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was not analyzed for VOCs, DRO and GRO. According to TestAmerica, a MS/MSD was not analyzed for VOCs, DRO and GRO, due to insufficient sample volume supplied to the laboratory.

Post Digestion Spikes and Serial Dilutions

Post digestion spike (PDS) and serial dilution analysis was not required for VOC, DRO and GRO methods.

Laboratory Duplicates

Laboratory duplicate analysis was not required for VOC, DRO and GRO methods.

Field Precision

Field duplicate samples were not included in this data package.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that sample TW-111 (original sample only – not the dilution) was qualified as estimated (J) for chloroethane, due to elevated CCV recovery.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
A8E71702	Trip Blank	Water
A8E71701/A8E72201	TW-111	Groundwater

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-111 (original sample)	Chloroethane	J	Elevated CCV recovery.

J – The analyte was positively identified, the quantitation is an estimation.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. E858

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from TestAmerica Laboratories, Inc. for the analysis of groundwater samples collected November 20 and 25, 2008 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 Skinner List –Volatile Organic Compounds (VOCs including methyl tert-butyl ether (MTBE)) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- SM 4500-SF – Sulfide by iodometric method;
- SM 2320B – Total Alkalinity by titration method; and
- SM2540C – Total Dissolved Solids (TDS) by drying at 180 °C.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Seven (7) groundwater samples were analyzed for one or more of the following: VOCs, DRO, GRO, sulfide, total alkalinity and TDS. Two (2) trip blanks were submitted to the laboratory. One trip blank was analyzed for VOCs only and the second trip blank was analyzed for VOCs and GRO. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the detection limit (DL).

DLs for samples TW-112, TW-93 and TW-86 were elevated for GRO analysis due to sample dilution necessary for high concentrations of target analytes. DLs for samples TW-112, TW-91, TW-93, TW-103 and TW-86 were elevated for VOCs analysis due to sample dilution necessary for high concentrations of target analytes.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The laboratory sample receipt checklists stated the samples were received within 2°C and 6°C. Samples TW-93, TW-103, TW-86 and trip blank (11-25-08) were sent to TestAmerica North Canton location for analysis and arrived at a temperature below 2°C.

Calibrations

Calibrations were within range for DRO and GRO.

VOCs initial calibration curve A8I0000925-1 for bromomethane, bromoform and naphthalene had greater than 15% RSD and was calibrated using linear regression. Since the average RSD was less than 15%, qualification was not required. Additionally, methylene chloride had greater than 30% RSD; however, associated samples were reported as not-detected for methylene chloride and did not require qualification.

VOCs continuing calibration verification (CCV) A8C0003093-1, A8C0003091-1 and A8C0003096-1 for methylene chloride had greater than 20% difference (D) and was calibrated using linear regression. Since the average % drift was less than 10%, qualification was not required. VOCs CCV A8C0003091-1 had greater than 20%D for

chloroethane and CCV A8C0003063-1 had greater than 20% D for acetone and chloroethane. Associated samples were reported as not-detected for acetone and chloroethane and did not require qualification.

VOCs CCV A8C000309-2 had greater than 20% D for 1,4-dioxane. The associated samples were reported as not-detected for 1,4-dioxane and did not require qualification.

Blanks

DRO, GRO, sulfide, total alkalinity and TDS were reported as not-detected in the method blanks.

VOCs method blank VBLK33 was reported as detected for naphthalene (1 ug/L). The associated sample, TW-91 dilution, was reported as not-detected for naphthalene and did not require qualification.

Trip blank (11-20-08) was reported as detected for naphthalene (2 ug/L). Samples TW-91, TW-90, TW-89 and TW-112 were qualified with a 'B' for naphthalene, due to trip blank contamination.

Trip blank (11-25-08) was reported as not-detected for VOCs and GRO.

Internal Standard and Surrogate Recoveries

VOCs, DRO and GRO surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Method 8260.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for VOCs, DRO, GRO, sulfide, total alkalinity and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was within acceptance criteria for sulfide and VOCs collected 11-25-08. According to TestAmerica, a MS/MSD was not analyzed for VOCs collected 11-20-08, DRO and GRO collected 11-20-08, due to insufficient sample volume supplied to the laboratory.

GRO MS/MSD analyzed on site sample TW-93 had low recovery for GRO. The amount spiked was less than four times the unspiked parent sample concentration for GRO and may not represent the matrix effect, and was not qualified.

Post Digestion Spikes and Serial Dilutions

Post digestion spikes and serial dilutions were not required for VOC, DRO, GRO, sulfide, total alkalinity and TDS methods.

Laboratory Duplicates

Laboratory duplicates were not require for VOC, DRO, GRO, sulfide, total alkalinity and TDS methods.

Field Precision

Field duplicate samples were not included in this data package.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that samples TW-91, TW-90, TW-89 and TW-112 were qualified with a 'B' for naphthalene, due to trip blank contamination.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
A8E85805	Trip Blank (11-20-08)	Water
A8F15804/K3QPD001	Trip Blank (11-25-08)	Water
A8F14802/A8F15002/ A8F15802/K3QPF003	TW-103	Groundwater
A8E85801/A8E85901	TW-112	Groundwater
A8F14803/A8F15003/ A8F15803/K3QPG004	TW-86	Groundwater
A8E85802/A8E85902	TW-89	Groundwater
A8E85803/A8E85903	TW-90	Groundwater
A8E85804/A8E85904	TW-91	Groundwater
A8F14801/A8F15001/ A8F15801/K3QPE002	TW-93	Groundwater

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-91 TW-90 TW-89 TW-112	Naphthalene	B	Trip blank contamination.

B – The analyte was found in an associated blank, as well as in the sample.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. F468

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from TestAmerica Laboratories, Inc. for the analysis of groundwater samples collected December 4, 2008 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 Skinner List –Volatile Organic Compounds (VOCs including methyl tert-butyl ether (MTBE)) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- MCAWW 300.0 – Chloride and fluoride by ion chromatography;
- MCAWW 353.2 – Nitrate and nitrite by automated colorimetry;
- ASTM D-516-90 – Sulfate by turbidimetric method;
- SM 4500-SF – Sulfide by iodometric method;
- SM 2320B – Total Alkalinity by titration method; and
- SM2540C – Total Dissolved Solids (TDS) by drying at 180 °C.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Two (2) groundwater samples were analyzed for one or more of the following: VOCs, DRO, GRO, chloride, fluoride, nitrate, nitrite, sulfate, sulfide, total alkalinity and TDS. One (1) trip blank was submitted to the laboratory and analyzed for VOCs. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the detection limit (DL).

DLs for samples TW-104 and TW-85 were elevated for sulfate analysis due to sample dilution necessary for high concentrations of target analytes. DLs for sample TW-104 were elevated for chloride analysis due to sample dilution necessary for high concentrations of target analytes. DLs for sample TW-104 were elevated for VOCs; however, no explanation for the dilution was given by the laboratory.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The laboratory sample receipt checklists stated the samples were received within 2°C and 6°C.

Samples TW-104, TW-85 and trip blank were sent to TestAmerica North Canton location for analysis and arrived at a temperature below 2°C, with one vial broken for TW-104 GRO analysis and two vials broken for TW-104 VOC analysis. Additionally, one TW-104 VOC vial, one TW-85 VOC vial and one TW-85 GRO vial were noted to have air bubbles present. Per Candace Fox of TestAmerica, sample TW-104 was analyzed for VOCs only, due to insufficient sample volume remaining from broken vials.

Calibrations

Calibrations were within range for DRO.

VOCs initial calibration curve for styrene had greater than 15% RSD and was calibrated using linear regression. Since the average RSD was less than 15%, qualification was not required. Additionally, acetone, methylene chloride, acetonitrile, trans-1,3-dichloropropene, ethyl methyacrylate, bromoform, 1,3,5-trimethylbenzene, sec-butylbenzene, naphthalene and tetrahydrothiophene had greater than 15 or 30% RSD; however, associated samples were not reported for the listed compounds and did not require qualification.

VOCs continuing calibration verification (CCV) for 1,4-dioxane had greater than 20% difference (D) and was calibrated using linear regression. The associated samples were reported as not-detected for 1,4-dioxane and did not require qualification. The VOC CCV also had greater than 20%D for dichlorofluoromethane, ethyl acetate, methyacrylonitrile, methyl methacrylate, 2-nitropropane, cyclohexanone, 2-methylnaphthalene, t-butyl ethyl ether, t-amyl methyl ether, trichlorofluoromethane, acrolein, vinyl acetate and ethyl methacrylate. Associated samples were not reported for the listed compounds and did not require qualification.

GRO CCV for surrogate trifluorotoluene had greater than 20% difference (D) and was calibrated using linear regression. The CCV was within range for GRO and did not require qualification.

Blanks

VOCs, DRO, GRO, chloride, fluoride, nitrate, nitrite, sulfate, sulfide, total alkalinity and TDS were reported as not-detected in the method blanks.

The trip blank was reported as not-detected for VOCs.

Internal Standard and Surrogate Recoveries

VOCs, DRO and GRO surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Method 8260.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for VOCs, DRO, GRO, chloride, fluoride, nitrate, nitrite, sulfate, sulfide, total alkalinity and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was within acceptance criteria for VOCs and GRO. According to TestAmerica, a MS/MSD was not analyzed for DRO, chloride, fluoride, nitrate, nitrite, sulfate, sulfide, total alkalinity and TDS, due to insufficient sample volume supplied to the laboratory.

Post Digestion Spikes and Serial Dilutions

Post digestion spikes and serial dilutions were not required for VOC, DRO, GRO, chloride, fluoride, nitrate, nitrite, sulfate, sulfide, total alkalinity and TDS methods.

Laboratory Duplicates

Laboratory duplicates were not require for VOC, DRO, GRO, chloride, fluoride, nitrate, nitrite, sulfate, sulfide, total alkalinity and TDS methods.

Field Precision

Field duplicate samples were not included in this data package.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
A8F87103/K37FE	Trip Blank	Water
A8F46801/A8F47001/ A8F87101/K37D8	TW-104	Groundwater
A8F46802/A8F47002/ A8F87102/K37FD	TW-85	Groundwater

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. RSA0614

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed a data package from TestAmerica Laboratories, Inc. for the analysis of groundwater samples collected January 20, 21 and 22, 2009 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 –Volatile Organic Compounds (VOCs) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- MCAWW 300.0 – Chloride and fluoride by ion chromatography;
- MCAWW 353.2 – Nitrate and nitrite by automated colorimetry;
- ASTM D-516-90 – Sulfate by turbidimetric method;
- SM 4500-SF – Sulfide by iodometric method;
- SM 2320B – Total Alkalinity by titration method; and
- SM2540C – Total Dissolved Solids (TDS) by drying at 180 °C.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Eleven (11) groundwater samples were analyzed for one or more of the following: VOCs, DRO, GRO, chloride, fluoride, nitrate, nitrite, sulfate, sulfide, total alkalinity and TDS. Three (3) trip blanks were submitted to the laboratory and were analyzed for VOCs. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the reporting limit (RL).

RLs for samples TW-114, TW-113, TW-108, TW-107, N2-4, OW-13 and TW-36 were elevated for VOCs analysis due to sample dilution necessary for high concentrations of target analytes.

RLs for samples TW-114, TW-113, TW-108, TW-107 and TW-36 were elevated for GRO and chloride analyses due to sample dilution necessary for high concentrations of target analytes. RLS for samples OW-13 were elevated for GRO and RLs for samples TW-109, N4-2 and TW-79 were elevated for chloride due to high concentrations of target analytes requiring dilution.

RLs for samples TW-107, TW-109, N4-1 and N4-2 were elevated for sulfate and RL for sample N4-2 was elevated for TDS analysis due to sample dilution necessary for high concentrations of target analytes.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The laboratory sample receipt checklists stated the samples in SDGs 0674 and 0614 were received within 2°C and 6°C. The laboratory sample receipt checklist for VOCs SDG 0706 stated the samples were received below 2°C.

Sample TW-109 was marked on the C-O-C for DRO analysis. According to Candace Fox of TestAmerica, DRO for TW-109 was not analyzed due to both one liter volumes broken during shipment.

Calibrations

Calibrations for DRO and GRO were within laboratory acceptance criteria. VOCs initial calibration curve had greater than 15% relative standard deviation (RSD) and was calibrated using linear regression for acetone and naphthalene. Since the average RSD was less than 15% qualification was not required. Additionally, ethyl methacrylate, n-butanol, cyclohexanone, 2-methylnaphthalene, t-amyl methyl ether and 1,2,3-trimethylbenzene had RSDs greater than 15%; however, these compounds were not reported for the samples analyzed and did not require qualification.

VOCs SDG 0614 continuing calibration verification (CCV) for dibromochloromethane, chlorobenzene, bromoform and naphthalene had greater than 20% difference (D) and was calibrated using linear regression. Associated samples were reported as not-detected for the listed compounds and did not require qualification. This CCV also had greater than 20%D for 1,2,4-trichlorobenzene and 1,2,3-trichlorobenzene. Samples were not reported for these two compounds and did not require qualification.

VOCs SDG 0674 CCV for styrene and bromoform had greater than 20% D and was calibrated using linear regression. Associated samples were reported as not-detected for the listed compounds and did not require qualification. Naphthalene also had greater than 20% D and sample N2-4 was qualified as estimated (J) for naphthalene, due to elevated CCV %D. This CCV also had greater than 20%D for trichlorofluoromethane, acrolein, acetonitrile, acrylonitrile, vinyl acetate, 1,1,1,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,2,3-trichlorobenzene cyclohexane and methylacetate. Samples were not reported for these compounds and did not require qualification.

VOCs SDG 0706 CCV for bromomethane, 4-methyl-2-pentanone, bromoform and naphthalene had greater than 20% difference (D) and was calibrated using linear regression. Associated samples were reported as not-detected for the listed compounds and did not require qualification. This CCV also had greater than 20%D for dichlorodifluoromethane, trichlorofluoromethane, Freon-113, iodomethane, 2,2-dichloropropane, 1,2,4-trichlorobenzene, cyclohexane and methylcyclohexane. Samples were not reported for these compounds and did not require qualification.

Blanks

DRO, GRO, chloride, fluoride, nitrate, nitrite, sulfide, total alkalinity and TDS were reported as not-detected in the method blanks.

Sulfate was reported as detected in the method blanks for batch 9A25016 (4.2 J mg/L) and batch 9A22001 (2.8 J mg/L). Samples N2-4, TW-114, TW-113 and TW-108 were qualified as estimated (B) for sulfate, due to method blank contamination.

VOCs method blank was reported as estimated detected for methylene chloride (0.87 J ug/L). Associated samples N2-4, OW-13 and TW-36 were qualified as estimated (B) for methylene chloride, due to method blank contamination.

VOCs method blank was reported as estimated detected for acetone (2.7 J ug/L) and methylene chloride (0.52 J ug/L). Associated samples were reported as not-detected for methylene chloride and did not require qualification. Samples Trip Blank (1-22-09) and TW-79 were qualified as estimated (B) for acetone, due to method blank contamination.

Trip Blank (1-20-09) was reported as estimated detected for methylene chloride (0.45 J ug/L). Associated samples were reported as not-detected for methylene chloride and did not require qualification. Trip Blank (1-21-09) was reported as not-detected for VOCs. Trip Blank (1-22-09) was reported as estimated detected for acetone (1.3 JB ug/L), due to method blank contamination.

Internal Standard and Surrogate Recoveries

VOCs, DRO and GRO surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Methods 8260.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for DRO, GRO, chloride, fluoride, nitrate, nitrite, sulfate, sulfide, total alkalinity and TDS. LCS met the laboratory QC acceptance criteria for VOCs. However, the laboratory only spiked five compounds for LCS analysis.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was analyzed for VOCs using sample TW-113 and was within laboratory acceptance criteria. MS/MSD was not analyzed for DRO and GRO; however, an LCS and laboratory control sample duplicate (LCSD) was analyzed. Nitrate and nitrite were not analyzed for MS/MSD. MS/MSD analysis is not required for TDS.

Sulfate MS/MSD for batch 9A26058 analyzed on sample N4-1 was within acceptance limits. Sulfate batches 9A25016 and 9A22001 did not have an associated MS/MSD. Sulfide MS/MSD batch 9A22095 analyzed on sample TW-109 and sulfide MS/MSD batch 9A27089 analyzed on sample N4-1 were within laboratory acceptance criteria.

Total alkalinity MS/MSD for batch 9A26059 analyzed on sample TW-79 and total alkalinity MS/MSD for batch 9A22008 analyzed on sample TW-113 had elevated recovery. The amount of total alkalinity spiked was less than four times the unspiked parent sample and may not represent the matrix effect, and therefore was not qualified.

Chloride batch 9B06027 did not have an associated MS/MSD. Chloride/fluoride MS/MSD batches 9B05047 (analyzed on sample OW-13) and 9B06030 (analyzed on sample N2-4) were within laboratory acceptance criteria. MS/MSD batches 9B06031 (analyzed on sample TW-79) and 9B04061 (analyzed on sample TW-113) were spiked for fluoride only and were within laboratory acceptance criteria.

Post Digestion Spikes and Serial Dilutions

Post digestion spike (PDS) and serial dilution analysis was not required for VOCs, DRO, GRO, chloride, fluoride, nitrate, nitrite, sulfate, sulfide, total alkalinity and TDS.

Laboratory Duplicates

Laboratory duplicate analysis was not required for VOCs, DRO, GRO, nitrate, nitrite. TDS did not have a laboratory duplicate analyzed. Total alkalinity batches 9A26059 and 9A22008 laboratory duplicates were within acceptance limits. One sulfide batch (9A27089) and one sulfate batch (9A26058) had a laboratory duplicate that was within acceptance limits. One chloride/fluoride batch (9B06030) had a laboratory duplicate analyzed and was within acceptance limits. Additionally, batch 9B06031 had a laboratory duplicate analyzed for fluoride only and was within acceptance limits.

Field Precision

Field duplicate samples were not included in this data package.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that sample N2-4 was qualified as estimated (J) for naphthalene, due to elevated CCV %D. Samples N2-4, TW-114, TW-113 and TW-108 were qualified as estimated (B)

for sulfate, due to method blank contamination. Samples N2-4, OW-13 and TW-36 were qualified as estimated (B) for methylene chloride, due to method blank contamination. Samples Trip Blank (1-22-09) and TW-79 were qualified as estimated (B) for acetone, due to method blank contamination.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
K53CD-001	TRIP BLANK (1-20-09)	Water
RSA0614-01/K53CF-002	TW-114	Groundwater
RSA0614-02/K53CG-003	TW-113	Groundwater
RSA0614-03/K53CJ-004	TW-108	Groundwater
RSA0614-04/K53CL-005	TW-107	Groundwater
RSA0614-05/K53CM-006	TW-109	Groundwater
K550N-001	TRIP BLANK (1-21-09)	Water
RSA0674-01/K550W-002	N2-4	Groundwater
RSA0674-02/K550X-003	OW-13	Groundwater
RSA0674-03/K5501-004	N4-1	Groundwater
RSA0674-04/K5503-005	TW-36	Groundwater
RSA0706-03/K58C9-001	TRIP BLANK (1-22-09)	Water
RSA0706-02/K58CV-002	TW-79	Groundwater
RSA0706-01/K58CW-003	N4-2	Groundwater

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
N2-4	Naphthalene	J	Elevated CCV %D.
N2-4 TW-114 TW-113 TW-108	Sulfate	B	Method blank contamination.
N2-4 OW-13 TW-36	Methylene chloride	B	Method blank contamination.
Trip Blank (1-22-09) TW-79	Acetone	B	Method blank contamination.

J – The analyte was positively identified, the quantitation is an estimation.

B – The analyte was found in an associated blank, as well as in the sample.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. RSB0168

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed a data package from TestAmerica Laboratories, Inc. for the analysis of groundwater samples collected February 5, 11, 12, 13 and 17, 2009 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 –Volatile Organic Compounds (VOCs) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8270 – Semivolatile Organic Compounds (SVOCs) by GC/MS;
- SW-846 8270 SIM – Polynuclear Aromatic Hydrocarbons (PAHs) by GC/MS Selective Ion Monitoring (SIM);
- EPA 504.1 – 1,2-Dibromoethane (EDB) by microextraction with GC;
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- SW-846 6010– Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES);
- SW-846 7470 – Mercury by manual cold vapor;
- MCAWW 300.0 – Chloride/Fluoride by ion chromatography;
- MCAWW 353.2 – Nitrate and nitrite by automated colorimetry;
- ASTM D-516-90 – Sulfate by turbidimetric method;
- SM 4500-SF – Sulfide by iodometric method;
- SW-846 7196 – Hexavalent chromium by colorimetric method;
- SW-846 9012 – Cyanide by colorimetric distillation method;
- SM 2320B – Total Alkalinity by titration method; and
- SM2540C – Total Dissolved Solids (TDS) by drying at 180 °C.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Thirty-two (32) groundwater samples and two (2) duplicate groundwater samples were analyzed for following: VOCs, DRO, GRO, chloride, nitrate, nitrite, sulfate, total alkalinity and TDS. Additionally, samples #1, #2, #3, #4 and #5 were analyzed for SVOCs, PAHs, fluoride, hexavalent chromium, cyanide, sulfide, metals, mercury and EDB. Five (5) trip blanks and one (1) rinsate blank were submitted to the laboratory and were analyzed for VOCs. Additionally, one (1) trip blank was analzyed for EDB. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the reporting limit (RL).

RLs for samples TW-102D, TW-100, TW-120, TW-94, TW-110, TW-99, TW-102S, TW-118, TW-131, TW-27D, TW-101, TW-531, TW-125, TW-123, TW-88, TW-523, W-01S, TW-129, TW-115, TW-128, TW-84, TW-126, TW-124, TW-25D, TW-38, W22, TW-104D, TW-31D and TW-105D were elevated for chloride analysis due to sample dilution necessary for high concentrations of target analytes.

RLs for samples TW-118, TW-113, TW-523, TW-115, TW116, TW-124, TW-38, TW-22 and TW-129 were elevated for GRO analyses due to sample dilution necessary for high concentrations of target analytes.

RLs for samples TW-102D reanalysis, TW-123 reanalysis, TW-523 reanalysis, TW-115 reanalysis and W-22 were elevated for VOCs analysis due to sample dilution necessary for high concentrations of target analytes.

RLs for samples TW-102D, TW-115 and TW-25D were elevated for TDS analysis due to sample dilution necessary for high concentrations of target analytes.

RLs for samples TW-102D, TW-94, TW-102S, TW-27D, TW-125, TW-100, TW-110, TW-101, W-01S, TW-123, TW-120, TW-99, TW-84, TW-25D, TW-104D and TW-105D were elevated for sulfate analysis due to sample dilution necessary for high concentrations of target analytes.

According to TestAmerica, five (5) analytes (arsenic, nickel, selenium, thallium and cyanide) did not meet the client reporting limits and were shown as J flagged above the method detection limit (MDL).

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. Sample TW-125 was mislabeled by the laboratory as TW-12S. For the purposes of this report, TW-125 was used. The C-O-C's stated the samples were received within 2°C and 6°C.

Samples TRIP BLANK (2/11/09), TW-123 reanalysis, TW-523 reanalysis, TW-115 reanalysis, TW-128, TRIP BLANK (2/12/09), W-22, TRIP BLANK (2/13/09), #1, #2, #3, #4, #5 and TRIP BLANK (2/5/09) were analyzed outside of holding time for VOCs. VOCs for the listed samples were qualified as estimated (J or UJ), due to holding time exceedance. Samples #1, #2, #3, #4 and #5 were analyzed outside of holding time for hexavalent chromium and were qualified as estimated (J or UJ), due to holding time exceedance.

Calibrations

Calibrations for SVOCs, PAHs, VOCs sequence RB92405, metals, mercury, DRO and GRO were within laboratory acceptance criteria. EDB continuing calibration verification (CCV) sequence RC93020 was outside acceptance limits and samples #1, #2, #3, #4, #5 and TRIP BLANK (2/5/09) were qualified as non-detect estimated (UJ) for EDB, due to CCV outside acceptance criteria.

VOCs continuing calibration verification (CCV) sequence RB91902 had greater than 20% difference (D) for chloroethane and was calibrated using linear regression. Associated samples were reported as not-detected for chloroethane and did not require qualification. This CCV also had greater than 20%D for 1,3,5-trichlorobnezene, allyl chloride, chlorodifluoromethane, chloroprene, cyclohexanone, dichlorofluoromethane, dicyclopentadiene, diethyl ether, epichlorohydrin, ethyl acetate, ethyl tert-butyl ether, heptane, hexane, isobutanol, isopropyl alcohol, isopropyl ether, methacrylonitrile, methyl methacrylate, m-monochlorobenzotrifluoride, n-butanol, pentachloroethane, propionitrile and t-butanol. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RB92517 had greater than 20% D for 1,4-dioxane and was calibrated using linear regression. Associated samples were reported as not-detected for the listed compound and did not require qualification. This CCV also had greater than 20%D for acrolein, dichlorodifluoromethane, 1,2,3-trimethylbenzene, 2-nitropropane, chlorodifluoromethane, chloroprene, dichlorofluoromethane, dicyclopentadiene, diethyl ether, epichlorohydrin, ethyl acetate, ethyl tert-butyl ether, heptane, hexane, isobutanol, isopropyl alcohol, isopropyl ether, methacrylonitrile, methyl methacrylate, m-monochlorobenzotrifluoride, n-butanol, p-monochlorobenzotrifluoride, propionitrile, propylene oxide and t-butanol. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RB92607 for bromomethane, carbon disulfide and 1,4-dioxane had greater than 20% D and was calibrated using linear regression. Associated samples were reported as not-detected for the listed compounds and did not require qualification. This CCV also had greater than 20%D for acrolein, dichlorodifluoromethane, trans-1,4-dichloro-2-butene, 1,2,3-trimethylbenzene, 2-nitropropane, chlorodifluoromethane, chloroprene, dichlorofluoromethane, diethyl ether, epichlorohydrin, ethyl acetate, ethyl tert-butyl ether, heptane, hexane, isobutanol, isopropyl ether, methacrylonitrile, methyl methacrylate, m-monochlorobenzotrifluoride, n-butanol, o-monochlorobenzotrifluoride, p-monochlorobenzotrifluoride, propionitrile, propylene oxyide and t-butanol. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RB92707 for bromoform, bromomethane, carbon disulfide and chloromethane had greater than 20% D and was calibrated using linear regression. Associated samples were reported as not-detected for the listed compounds and did not require qualification.

VOCs CCV sequence RB92620 had greater than 20% D and was calibrated using linear regression for bromoform. The associated sample was reported as not-detected for the listed compounds and did not require qualification.

VOCs CCV sequence RC90102 had greater than 20% D and was calibrated using linear regression for carbon disulfide and isopropylbenzene. Associated sample TW-105D was reported as detected for carbon disulfide and was as qualified estimated (J). Associated sample TW-129 was reported as detected for isopropylbenzene and was as qualified estimated (J). This CCV also had greater than 20%D for dichlorofluoromethane, acrolein, m-monochlorobenzotrifluoride and o-monochlorobenzotrifluoride. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RB92403 had greater than 20% D and was calibrated using linear regression for methylene chloride, trans-1,2-dichloroethene and 1,4-dioxane. Sample TW-102D reanalysis was reported as detected for methylene chloride and was qualified as estimated (J). The other listed compounds were reported as not-detected and did not require qualification. This CCV also had greater than 20%D for acetonitrile, acrolein, iodomethane, methyl acetate, trichlorofluoromethane, 2-nitropropane, allyl chloride, dichlorofluoromethane, diethyl ether, hexane, isobutanol, isopropyl alcohol and p-monochlorobenzotrifluoride. Samples were not reported for these compounds and did not require qualification.

Blanks

VOCs, chloride, fluoride, hexavalent chromium, cyanide, nitrite, sulfide, mercury, EDB and PAHs were reported as not-detected in the method blanks. Total alkalinity batches 9B08014, 9B15009 and 9B18071 were reported as not-detected in the method blanks. TDS batches 9B19015, 9B19014, 9B13012, 9B13013, 9B13066, 9B07003 and 9B07004 were reported as not-detected in the method blanks. DRO batches 9B12034, 9B06046, 9B16053, 9B18041 and 9B18078 were reported as not-detected in the method blanks. GRO batches 9B20004, 9B20003, 9B08002, 9B26007 and 9B22004 were reported as not-detected in the method blanks. Nitrate batches 9B18068, 9B14007, 9B13047, 9B13049 and 9B13087 were reported as not-detected in the method blanks. Sulfate batch 9B19073 was reported as not-detected in the method blank.

Total alkalinity batch 9B16059 had a detection of 0.81 J mg/L in the method blank. Samples TW-523, W-01S, TW-115, TW-128, TW-126, TW-124, TW-83, W-22, TW-120 and TW-99 were qualified as estimated (B) for total alkalinity, due to method blank contamination.

TDS was reported as detected in the method blank for batch 9B16020 (4 J mg/L). Samples TW-123, TW-523, W-01S, TW-115, TW-128, TW-126, TW-124, TW-83, W-22, TW-120 and TW-99 were qualified as estimated (B) for TDS, due to method blank contamination.

DRO was reported as detected in the method blank for batch 9B13094 (0.14 J mg/L). Samples TW-123, TW-523, W-01S, TW-115, TW-126, TW-124 and TW-83 were qualified as estimated (B) for DRO, due to method blank contamination.

GRO was reported as detected in the method blank for batch 9B24002 (0.014 J mg/L). Samples W-22 and TW-120 were qualified as estimated (B) for GRO, due to method blank contamination.

Nitrate was reported as detected in the method blank for batch 9B06080 (0.014 J mg/L). Samples #1, #2, #3, #4 and #5 were qualified as estimated (B) for nitrate, due to method blank contamination.

Sulfate was reported as detected in the method blanks for batches 9B09067 (2.9 J mg/L), 9B16067 (3.2 J mg/L), 9B16066 (3.4 J mg/L), 9B20074 (1.6 J mg/L) and 9B20078 (1.2 J mg/L). Samples TW-84, TW-25D, TW-104D, TW-105D, TW-131, TW-531, TW-88, TW-129, TW-31D, TW-102D, TW-94, TW-102S, TW-27D, TW-125, TW-126, TW-99, TW-100, TW-110, TW-118, TW-101, TW-123, TW-523, W-01S, TW-115, TW-128, TW-124, TW-83, W-22, TW-120, #3 and #4 were qualified as estimated (B) for sulfate, due to method blank contamination.

SVOCs batch 9B06047 method blank was reported as estimated detected for diethyl phthalate (0.27 J ug/L) and di-n-butyl phthalate (0.64 J ug/L). Associated samples were reported as not-detected for these two compounds and did not require qualification. Additionally, anthracene, phenanthrene and pyrene were detected in the method blank. Associated samples were not reported for these compounds and did not require qualification.

Metals batch 9B09033 method blank was reported as estimated detected for barium (0.0004 J mg/L), calcium (0.2 J mg/L) and manganese (0.0012 J mg/L). Samples #1, #2, #3, #4 and #5 were qualified as estimated (B) for barium, calcium and manganese, due to method blank contamination.

TRIP BLANKS (2/5/09), (2/11/09), (2/12/09), (2/13/09) and (2/17/09) were reported as not-detected for VOCs. TRIP BLANK (2/5/09) was also reported as not-detected for EDB. RINSE BLANK 1 was reported as not-detected for VOCs.

Internal Standard and Surrogate Recoveries

VOCs, GRO and PAHs surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Methods 8260 and 8270.

DRO sample TW-99 had non-detectable surrogate recovery. According to the laboratory this was due to dilution; however, the sample was analyzed at a 1X dilution and was qualified as non-detect estimated (UJ).

SVOCs sample #1 had elevated recovery for surrogate 2,4,6-tribromophenol. SVOCs associated with this surrogate were reported as not-detected and did not require qualification.

Laboratory Control Samples (Blank Spike)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for PAHs, metals, sulfate, nitrate, GRO, DRO, TDS, total alkalinity, mercury, nitrite, sulfide, chloride, fluoride, cyanide and hexavalent chromium. VOCs batches 9B26036 and 9B25070 LCS met the laboratory QC acceptance criteria. VOCs batches 9B26086 and 9C01006 LCS were within acceptance limits; however, the laboratory only spiked five compounds for LCS analysis.

VOC batch 9B19017 had low LCS recovery for chloroethane and elevated recovery for carbon disulfide. Samples #1, #2, #3, #4, #5 and TRIP BLANK (2/5/09) were qualified as non-detect estimated (UJ) for chloroethane and sample #1 was qualified as estimated (J) for carbon disulfide. Additionally, acetonitrile had elevated LCS recovery. Samples were not reported for acetonitrile and did not require qualification.

VOC batch 9B24017 had elevated LCS recovery for methyl tert-butyl ether. Samples TW-120D reanalysis, TW-94 and TW-100 were qualified as estimated (J) for methyl tert-butyl ether, due to elevated LCS recovery.

VOC batch 9B27038 had low LCS recovery for carbon disulfide. Sample W-22 was qualified as non-detect estimated (UJ) for carbon disulfide, due to elevated LCS recovery.

SVOC batch 9B06047 had elevated LCS recovery for n-nitrosodiphenylamine, 3-nitroaniline and benzo(a)pyrene. Samples were not reported for these three compounds and did not require qualification. This LCS also had elevated recovery for 2,4-dinitrotoluene, benzidine, 2,4,6-trichlorophenol, 2,6-dinitrotoluene, 4-chloro-3-methylphenol and di-n-octyl phthalate. Associated samples were reported as not-detected for the listed compounds and did not require qualification.

EDB batch 9B11019 had elevated LCS recovery for EDB. Associated samples were reported as not-detected for EDB and did not require qualification.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was analyzed for compounds discussed below. MS/MSD analysis is not required for TDS. SVOCs and EDB did not have an associated MS/MSD. According to the case narrative, PAHs did not have an associated MS/MSD, due to insufficient sample volume provided to the laboratory.

Chloride batches 9B17053, 9B24013, 9B21005 and 9B11026 had MS/MSD analyzed on samples that were not associated with the project site and were not used for qualification. Chloride MS/MSD batches 9B21004 (analyzed on sample TW-84), 9B17056 (analyzed on sample TW-523) and 9B17057 (analyzed on sample TW-99) were within laboratory acceptance criteria.

Fluoride batch 9B11026 had MS/MSD analyzed on samples that were not associated with the project site and were not used for qualification.

Cyanide batches 9B06087 and 9B06041 had MS/MSD analyzed on samples that were not associated with the project site and were not used for qualification.

Hexavalent chromium MS/MSD batch 9B06004 (analyzed on sample #4) had low recovery. Samples #5 and #1 were qualified as estimated (J) and sample #2, #3 and #4 were qualified as non-detect estimated (UJ) for hexavalent chromium, due to low MS/MSD recovery.

Metals MS/MSD batch 9B09033 had low recovery for calcium. The amount of calcium spiked was less than four times the unspiked parent sample and may not represent the matrix effect and therefore was not qualified.

Mercury MS/MSD batch 9B12028 (analyzed on sample #5) was within laboratory acceptance criteria for mercury.

Total alkalinity batch 9B08014 did not have an associated MS/MSD. Total alkalinity MS/MSD batches 9B16059 (analyzed on sample TW-120) and 9B15009 (analyzed on sample TW-123) were within laboratory acceptance criteria. Total alkalinity MS/MSD batch 9B18071 (analyzed on sample TW-131) had low recovery for total alkalinity. Samples TW-131, TW-531, TW-88, TW-129, TW-84, TW-25D, TW-104D, TW-31D and TW-105D were qualified as estimated (J) for total alkalinity, due to low MS/MSD recovery.

Nitrite batches 9B13046, 9B06084 and 9B14008 did not have an associated MS/MSD. Nitrite MS/MSD batches 9B13089 (analyzed on sample TW-123) and 9B22009 (analyzed on sample TW-131) were within laboratory acceptance criteria.

Nitrate batches 9B13409 and 9B13407 did not have an associated MS/MSD. Nitrate batches 9B06080 and 9B14007 had MS/MSD analyzed on samples that were not associated with the project site and were not used for qualification. Nitrate MS/MSD batches 9B13087 (analyzed on sample TW-123) and 9B18068 (analyzed on sample TW-131) were within laboratory acceptance criteria.

DRO batches 9B18078, 9B16053, 9B06046 and 9B12034 did not have an associated MS/MSD. DRO MS/MSD batch 9B18041 (analyzed on sample TW-131) was within laboratory acceptance criteria. DRO MS/MSD batch 9B13094 (analyzed on sample TW-123) had DRO recovery outside acceptance criteria. The amount of DRO spiked was less than four times the unspiked parent sample and may not represent the matrix effect and therefore was not qualified.

GRO batches 9B26007, 9B08002 and 9B20003 did not have an associated MS/MSD. GRO MS/MSD batch 9B24002 (analyzed on sample W-22) was within laboratory acceptance criteria. GRO MS/MSD batch 9B22004 (analyzed on sample TW-83) had elevated GRO recovery. The amount of GRO spiked was less than four times the unspiked parent sample and may not represent the matrix effect and therefore was not qualified. GRO MS/MSD batch 9B20004 (analyzed on sample TW-123) had low recovery for GRO. Samples TW-102D, TW-118, TW-101, TW-123, TW-523, W-01S and TW-124 were qualified as estimated (J) for GRO, due to low MS/MSD recovery.

Sulfate batch 9B20076 did not have an associated MS/MSD. Sulfate batch 9B09067 had MS/MSD analyzed on samples that were not associated with the project site and were not used for qualification. Sulfate MS/MSD batches 9B20074 (analyzed on sample TW-131), 9B16066 (analyzed on sample TW-99) and 9B16067 (analyzed on sample TW-123) were within laboratory acceptance criteria. Sulfate batch 9B19073 (analyzed on sample #5) had elevated MS/MSD recovery for sulfate. Samples #5, #1 and #2 were qualified as estimated (J) for sulfate, due to elevated MS/MSD recovery.

Sulfide MS/MSD batch 9B06076 (analyzed on sample#4) was within laboratory acceptance criteria.

VOC batches 9B27038, 9B24017, 9B19017, 9B26086 (spiked for five compounds only) and 9B25070 did not have an associated MS/MSD. VOC batch 9B24022 (spiked for four compounds only) had MS/MSD analyzed on samples that were not associated with the project site and were not used for qualification. VOC batch 9C01006 (analyzed on

sample TW-131) was within laboratory acceptance criteria; however, the laboratory only spiked five compounds for MS/MSD analysis. VOCs MS/MSD batch 9B26036 (analyzed on sample TW-123) had low recovery for 74 compounds and elevated relative percent difference (RPD) for 82 compounds. Of these exceedances, 29 compounds were not reported in the data package and 34 compounds elevated for RPD were not reported in the data package. Samples TW-123 reanalysis, TW-523 reanalysis, TW-115 reanalysis and TW-128 were qualified as estimated (J or UJ) for the remaining VOC compounds (see Table 2), due to MS/MSD outside acceptance criteria.

Post Digestion Spikes and Serial Dilutions

Post digestion spike (PDS) and serial dilution analysis was not required for SVOCs, PAHs, EDB, VOCs, DRO, GRO, chloride, fluoride, nitrate, nitrite, sulfate, sulfide, hexavalent chromiu, cyanide, total alkalinity and TDS.

Mercury batch 9B12028 did not have an associated PDS or serial dilution analysis. Metals batch 9B09033 PDS analyzed on sample #2 was within acceptance limits. This batch had elevated serial dilution for potassium. Samples #1, #2, #3, #4 and #5 were qualified as estimated (J) for potassium, due to elevated serial dilution.

Laboratory Duplicates

Laboratory duplicate analysis was not required for SVOCs, PAHs, EDB, VOCs, DRO, GRO, nitrite, mercury and metals. Hexavalent chromium laboratory duplicate batch 9B06044 (analyzed on sample #4) was within acceptance limits.

Cyanide batch 9B06087 did not have associated laboratory duplicates. Laboratory duplicate for cyanide batch 9B06041 was analyzed on samples that were not associated with the project site and were not used for qualification.

TDS batches 9B13012, 9B13013, 9B13066, 9B07004, 9B19015 and 9B07003 had laboratory duplicates analyzed on samples that were not associated with the project site and were not used for qualification. Laboratory duplicates for TDS batches 9B16020 (analyzed on sample TW-123) and 9B19014 (analyzed on sample TW-131) were within laboratory acceptance criteria.

Chloride batches 9B17053, 9B24013, 9B21005, 9B17056, 9B17057 and 9B11028 had laboratory duplicates analyzed on samples that were not associated with the project site and were not used for qualification. Laboratory duplicate for chloride batch 9B21004 (analyzed on sample TW-84) was within laboratory acceptance criteria.

Flouride batch 9B11028 had laboratory duplicates analyzed on samples that were not associated with the project site and were not used for qualification.

Total alkalinity batch 9B18071 did not have associated laboratory duplicates. Laboratory duplicates for batches 9B08014 (analyzed on sample #5), 9B16059 (analyzed on sample W-22) and 9B15009 (analyzed on sample TW-102D) were within laboratory acceptance criteria for total alkalinity.

Nitrate batches 9B13087 and 9B06080 had laboratory duplicates analyzed on samples that were not associated with the project site and were not used for qualification. Nitrate batches 9B13049, 9B13047, 9B14007 and 9B18068 did not have associated laboratory duplicates.

Sulfate batch 9B09067 had laboratory duplicates analyzed on samples that were not associated with the project site and were not used for qualification. Sulfate batches 9B20074, 9B16067 and 9B20078 did not have associated laboratory duplicates. Laboratory duplicates for batches 9B19073 (analyzed on sample #5) and 9B16066 (analyzed on sample TW-99) were within laboratory acceptance criteria for sulfate.

Sulfide batch 9B06076 (analyzed on sample #3) had laboratory duplicates within acceptance criteria.

Field Precision

Two field duplicate samples were included in this data package (TW-123/TW-523 and TW-131/TW-531).

Both sample and duplicate TW-123/TW-523 were reported as detected or estimated detected for chloride, DRO, GRO, total alkalinity, TDS, sulfate, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2-butanone, p-cymene, acetone, benzene, ethylbenzene, isopropylbenzene, naphthalene, n-butylbenzene, n-propylbenzene, sec-butylbenzene toluene and xylenes. Sample/duplicate precision calculations were less than the QAPP 50% relative percent difference (RPD) for organics and 30% RPD for inorganics for the listed compounds.

Both sample and duplicate TW-131/TW-531 were reported as detected or estimated detected for chloride, total alkalinity, TDS and sulfate. Additionally, sample TW-131 was reported as estimated detected for nitrite. Sample/duplicate precision calculations were less than the QAPP 50% RPD for organics and 30% RPD for inorganics for chloride, total alkalinity, TDS and sulfate. Inorganics RPD was elevated for nitrite.

The QAPP does not require qualification for sample/duplicate precision outside acceptance criteria. Sample/duplicate precision calculations are included in Table 3.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that samples TRIP BLANK (2/11/09), TW-123 reanalysis, TW-523 reanalysis, TW-115 reanalysis, TW-128, TRIP BLANK (2/12/09), W-22, TRIP BLANK (2/13/09), #1, #2, #3, #4, #5 and TRIP BLANK (2/5/09) were qualified as estimated (J or UJ) for VOCs, due to holding time exceedance. Samples #1, #2, #3, #4 and #5 were qualified as estimated (J or UJ) for hexavalent chromium, due to holding time exceedance.

Sample TW-105D was qualified as estimated (J) for carbon disulfide, due to CCV outside acceptance criteria. Sample TW-129 was qualified as estimated (J) for isopropylbenzene, due to CCV outside acceptance criteria. Sample TW-102D reanalysis was qualified as estimated (J) for methylene chloride, due to CCV outside acceptance criteria. Samples #1, #2, #3, #4, #5 and TRIP BLANK (2/5/09) were qualified as non-detect estimated (UJ) for EDB, due to CCV outside acceptance criteria. DRO sample TW-99 was qualified as non-detect estimated (UJ) for DRO, due to surrogate recovery outside acceptance criteria.

Samples TW-523, W-01S, TW-115, TW-128, TW-126, TW-124, TW-83, W-22, TW-120 and TW-99 were qualified as estimated (B) for total alkalinity, due to method blank contamination. Samples TW-123, TW-523, W-01S, TW-115, TW-128, TW-126, TW-124, TW-83, W-22, TW-120 and TW-99 were qualified as estimated (B) for TDS, due to method blank contamination. Samples TW-123, TW-523, W-01S, TW-115, TW-126, TW-124 and TW-83 were qualified as estimated (B) for DRO, due to method blank contamination. Samples W-22 and TW-120 were qualified as estimated (B) for GRO, due to method blank contamination. Samples #1, #2, #3, #4 and #5 were qualified as estimated (B) for nitrate, due to method blank contamination. Samples TW-84, TW-25D, TW-104D, TW-105D, TW-131, TW-531, TW-88, TW-129, TW-31D, TW-102D, TW-94, TW-102S, TW-27D, TW-125, TW-126, TW-99, TW-100, TW-110, TW-118, TW-101, TW-123, TW-523, W-01S, TW-115, TW-128, TW-124, TW-83, W-22, TW-120, #3 and #4 were qualified as estimated (B) for sulfate, due to method blank contamination. Samples #1, #2, #3, #4 and #5 were qualified as estimated (B) for barium, calcium and manganese, due to method blank contamination.

Samples #1, #2, #3, #4, #5 and TRIP BLANK (2/5/09) were qualified as non-detect estimated (UJ) for chloroethane and sample #1 was qualified as estimated (J) for carbon disulfide, due to LCS outside acceptance criteria. Samples TW-120D reanalysis, TW-94 and TW-100 were qualified as estimated (J) for methyl tert-butyl ether, due to elevated LCS recovery. Sample W-22 was qualified as non-detect estimated (UJ) for carbon disulfide, due to elevated LCS recovery. Samples #5 and #1 were qualified as estimated (J) and samples #2, #3 and #4 were

qualified as non-detect estimated (UJ) for hexavalent chromium, due to low MS/MSD recovery. Samples TW-131, TW-531, TW-88, TW-129, TW-84, TW-25D, TW-104D, TW-31D and TW-105D were qualified as estimated (J) for total alkalinity, due to low MS/MSD recovery. Samples TW-102D, TW-118, TW-101, TW-123, TW-523, W-01S and TW-124 were qualified as estimated (J) for GRO, due to low MS/MSD recovery. Samples #1, #2 and #5 were qualified as estimated (J) for sulfate, due to elevated MS/MSD recovery. Samples TW-123 reanalysis, TW-523 reanalysis, TW-115 reanalysis and TW-128 were qualified as estimated (J or UJ) for VOC compounds (see Table 2), due to MS/MSD outside acceptance criteria. Samples #1, #2, #3, #4 and #5 were qualified as estimated (J) for potassium, due to elevated serial dilution.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
RSB0168-01	#5	Groundwater
RSB0168-02	#1	Groundwater
RSB0168-03	#2	Groundwater
RSB0168-04	#3	Groundwater
RSB0168-05	#4	Groundwater
RSB0168-06	TRIP BLANK (2/5/09)	Water
RSB0385-01	TW-102D	Groundwater
RSB0385-02	TW-94	Groundwater
RSB0385-03	TW-102S	Groundwater
RSB0385-04	TW-27D	Groundwater
RSB0385-05	TW-12S	Groundwater
RSB0385-06	TW-100	Groundwater
RSB0385-07	TW-110	Groundwater
RSB0385-08	TW-118	Groundwater
RSB0385-09	TRIP BLANK (2/11/09)	Water
RSB0438-01	TW-101	Groundwater
RSB0438-02	TW-123	Groundwater
RSB0438-03	TW-523	Groundwater
RSB0438-04	W-01S	Groundwater
RSB0438-05	TW-115	Groundwater
RSB0438-06	TW-128	Groundwater
RSB0438-07	TW-126	Groundwater
RSB0438-08	TW-124	Groundwater
RSB0438-09	TW-83	Groundwater
RSB0438-10	TRIP BLANK (2/12/09)	Water
RSB0478-01	W-22	Groundwater
RSB0478-02	TW-120	Groundwater
RSB0478-03	TW-99	Groundwater
RSB0478-04	TRIP BLANK (2-13-09)	Water

Table 1 Continued
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
RSB0535-01	TW-131	Groundwater
RSB0535-04	TW-531	Groundwater
RSB0535-05	TW-88	Groundwater
RSB0535-06	TW-129	Groundwater
RSB0535-07	TW-84	Groundwater
RSB0535-08	TW-25D	Groundwater
RSB0535-09	TW-104D	Groundwater
RSB0535-10	TW-31D	Groundwater
RSB0535-11	TW-105D	Groundwater
RSB0535-12	RINSE BLANK 1	Water
RSB0535-13	TRIP BLANK (2-17-09)	Water

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TRIP BLANK (2/11/09)	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methyl-tert-butyl ether Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TRIP BLANK (2/11/09)	trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
TW-123 reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Hexanone 4-Methyl-2-pentanone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Methyl-tert-butyl ether Methylene chloride Styrene tert-Butylbenzene Tetrachloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-123 reanalysis	1,2,4-Trimethylbenzene 2-Butanone p-Cymene Acetone Benzene Ethylbenzene Isopropylbenzene Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Toluene Xylenes	J	Holding time exceedance.
TW-523 reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Hexanone p-Cymene 4-Methyl-2-pentanone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Methyl tert-butyl ether Methylene chloride sec-Butylbenzene Styrene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-523 reanalysis	tert-Butylbenzene Tetrachloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	Holding time exceedance.
TW-523 reanalysis	1,2,4-Trimethylbenzene 2-Butanone p-Cymene Acetone Benzene Ethylbenzene Isopropylbenzene Naphthalene n-Propylbenzene n-Butylbenzene Toluene Xylenes	J	Holding time exceedance.
TW-115 reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-115 reanalysis	Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene	UJ	Holding time exceedance.
TW-115 reanalysis	tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	Holding time exceedance.
TW-115 reanalysis	Benzene Methyl-tert-butyl ether Xylenes	J	Holding time exceedance.
TW-128	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-128	Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methyl-tert-butyl ether Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
TRIP BLANK (2/12/09)	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TRIP BLANK (2/12/09)	4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methyl tert-butyl ether Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
W-22	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
W-22	1,4-Dioxane 2-Butanone 2-Hexanone 4-Methyl-2-pentanone Acetone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Methylene chloride Styrene Tetrachloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	Holding time exceedance.
W-22	p-Cymene Benzene Ethylbenzene Isopropylbenzene Methyl- tert-butyl ether Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene tert-Butylbenzene Toluene Xylenes	J	Holding time exceedance.
TRIP BLANK (2/13/09)	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TRIP BLANK (2/13/09)	1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methyl tert-butyl ether Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
#5	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
#5	1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Methyl tert-butyl ether Methylene chloride Styrene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
#1	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
#1	2-Butanone 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Methyl tert-butyl ether Methylene chloride Styrene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
#1	Carbon disulfide	J	Holding time exceedance.
#2	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 4-Methyl-2-pentanone	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
#2	Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Methyl tert-butyl ether Methylene chloride Styrene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
#3	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
#3	Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Methyl tert-butyl ether Methylene chloride Styrene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
#4	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
#4	cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Methyl tert-butyl ether Methylene chloride Styrene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
TRIP BLANK (2/5/09)	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TRIP BLANK (2/5/09)	Ethylbenzene Methyl tert-butyl ether Methylene chloride Styrene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
#2 #3 #4	Hexavalent chromium	UJ	Holding time exceedance.
#5 #1	Hexavalent chromium	J	Holding time exceedance.
TW-105D	Carbon disulfide	J	Elevated CCV %D.
TW-129	Isopropylbenzene	J	Elevated CCV %D.
TW-102D Reanalysis	Methylene chloride	J	Elevated CCV %D.
#1 #2 #3 #4 #5 TRIP BLANK (2/5/09)	EDB	UJ	CCV %D outside acceptance limits.
TW-99	DRO	UJ	Surrogate recovery outside acceptance criteria.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-523 W-01S TW-115 TW-128 TW-126 TW-124 TW-83 W-22 TW-120 TW-99	Total alkalinity	B	Method blank contamination.
TW-123 TW-523 W-01S TW-115 TW-128 TW-126 TW-124 TW-83 W-22 TW-120 TW-99	TDS	B	Method blank contamination.
TW-123 TW-523 W-01S TW-115 TW-126 TW-124 TW-83	DRO	B	Method Blank contamination.
W-22 TW-120	GRO	B	Method blank contamination.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
#1 #2 #3 #4 #5	Nitrate	B	Method blank contamination.
#1 #2 #3 #4 #5	Barium Calcium Manganese	B	Method blank contamination.
TW-84 TW-25D TW-104D TW-105D TW-131 TW-531 TW-88 TW-129 TW-31D TW-102D TW-94 TW-102S TW-27D TW-125 TW-126 TW-99 TW-100 TW-110 TW-118 TW-101 TW-123 TW-523 W-01S	Sulfate	B	Method blank contamination.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-115 TW-128 TW-124 TW-83 W-22 TW-120 #3 #4	Sulfate	B	Method blank contamination.
#1 #2 #3 #4 #5 TRIP BLANK (2/5/09)	Chloroethane	UJ	LCS outside acceptance criteria.
#1	Carbon disulfide	J	LCS outside acceptance criteria.
TW-102D Reanalysis TW-94 TW-100	Methyl tert-butyl ether	J	Low LCS recovery.
W-22	Carbon disulfide	UJ	Low LCS recovery.
#5 #1	Hexavalent chromium	J	Low MS/MSD recovery.
#2 #3 #4	Hexavalent chromium	UJ	Low MS/MSD recovery.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-131 TW-531 TW-88 TW-129 TW-84 TW-25D TW-104D TW-31D TW-105D	Total alkalinity	J	Low MS/MSD recovery.
TW-102D TW-118 TW-101 TW-123 TW-523 W-01S TW-124	GRO	J	Low MS/MSD recovery.
#5 #1 #2	Sulfate	J	Elevated MS/MSD recovery.
TW-123 reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 2-Hexanone 4-Methyl-2-pentanone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride	UJ	MS/MSD recovery outside acceptance criteria.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-123 reanalysis	Chlorobenzene Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Methyl tert-butyl ether Methylene chloride Styrene tert-Butylbenzene Tetrachloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	MS/MSD recovery outside acceptance criteria.
TW-123 reanalysis	1,2,4-Trimethylbenzene 2-Butanone Acetone Benzene Ethylbenzene Isopropylbenzene Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Toluene Xylenes	J	MS/MSD recovery outside acceptance criteria.
TW-523 reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 2-Hexanone 4-Methyl-2-pentanone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride	UJ	MS/MSD recovery outside acceptance criteria.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-523 reanalysis	Chlorobenzene Chloroethane Chloroform Chloromethanecis-1,2- Dichloroethene cis-1,3- Dichloropropene Methyl tert-butyl ether Methylene chloride sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	MS/MSD recovery outside acceptance criteria.
TW-523 reanalysis	1,2,4-Trimethylbenzene 2-Butanone Acetone Benzene Ethylbenzene Isopropylbenzene Naphthalene n-Butylbenzene n-Propylbenzene Toluene Xylenes	J	MS/MSD recovery outside acceptance criteria.
TW-115 reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 2-Butanone 2-Hexanone 4-Methyl-2-pentanone Acetone	UJ	MS/MSD recovery outside acceptance criteria.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-115 reanalysis	Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	MS/MSD recovery outside acceptance criteria.
TW-115 reanalysis	Benzene Methyl tert-butyl ether Xylenes	J	MS/MSD recovery outside acceptance criteria.
TW-128	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 2-Butanone 2-Hexanone	UJ	MS/MSD recovery outside acceptance criteria.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-128	4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methyl tert-butyl ether Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	MS/MSD recovery outside acceptance criteria.
#1 #2 #3 #4 #5	Potassium	J	Elevated serial dilution percent difference.

J – The analyte was positively identified, the quantitation is an estimation.

UJ – Potential false negative due to low QC recoveries.

B – The analyte was found in an associated blank, as well as in the sample.

Table 3
Field Precision

Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Qualified
TW-123/TW-523	Chloride (mg/L)	130	130	0	A
	DRO (mg/L)	7.5 B	7.6 B	1	A
	GRO (mg/L)	5.4	6.5	18	A
	Total Alkalinity (mg/L)	508	508 B	0	A
	TDS (mg/L)	724 B	740 B	2	A
	Sulfate (mg/L)	2 JB	2 JB	0	A
	1,2,4-Trimethylbenzene (ug/L)	12	13	8	A
	1,3,5-Trimethylbenzene (ug/L)	4.3	4.5	5	A
	2-Butanone (ug/L)	16	20	22	A
	p-Cymene (ug/L)	5	5.9	17	A
	Acetone (ug/L)	55	66	18	A
	Benzene (ug/L)	340	350	3	A
	Ethylbenzene (ug/L)	21	21	0	A
	Isopropylbenzene (ug/L)	27	27	0	A
	Naphthalene (ug/L)	280	280	0	A

Table 3
Field Precision

Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Qualified
TW-123/TW-523 continued	n-Butylbenzene (ug/L)	6.6	8.8	29	A
	n-Propylbenzene (ug/L)	30	30	0	A
	sec-Butylbenzene (ug/L)	4.1	4.9	17	A
	Toluene (ug/L)	32	29	10	A
	Xylenes (ug/L)	75	71	5	A
TW-131/TW/531	Chloride (mg/L)	51	50	2	A
	Total Alkalinity (mg/L)	312	313	0	A
	Nitrite (mg/L)	0.04 J	0.02 U	67	X
	TDS (mg/L)	388	393	1	A
	Sulfate (mg/L)	18.2 B	16.8 B	8	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data
X – Sample/duplicate precision outside acceptance criteria of 50% RPD for organics or 30% RPD for inorganics.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. RSB0604

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed a data package from TestAmerica Laboratories, Inc. for the analysis of groundwater samples collected February 18, 19, 20, 23, 24 and 25, 2009 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 –Volatile Organic Compounds (VOCs) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8015B – Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) by GC/Flame Ionization Detector (FID);
- SW-846 6010– Lead by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES);
- MCAWW 300.0 – Chloride by ion chromatography;
- MCAWW 353.2 – Nitrate and nitrite by automated colorimetry;
- ASTM D-516-90 – Sulfate by turbidimetric method;
- SM 2320B – Total Alkalinity by titration method; and
- SM2540C – Total Dissolved Solids (TDS) by drying at 180 °C.

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Forty-four (44) groundwater samples were analyzed for one or more of the following: VOCs, DRO, GRO, lead, chloride, nitrate, nitrite, sulfate, total alkalinity and TDS. Six (6) trip blanks and four (4) rinsate blanks were submitted to the laboratory and were analyzed for VOCs. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the reporting limit (RL).

RLs for samples TW-24D, TW-524, TW-106S, TW-96, TW-130, OW-29, OW-30, OW-31, OW-32, ES-03, TW-116D, TW-32, N3-2, TW-23D, TW-116S, TW-78, TW-75, TW-578, OW-27T, OW-28T, SB-38, SB-538, N3-4, TW-56, OW-21, OW-35, SW-POND and SW-CREEK were elevated for chloride analysis due to sample dilution necessary for high concentrations of target analytes.

RLs for samples TW-106S, TW-98, TW-97, OW-29, OW-30, OW-31, OW-32, OW-33, TW-116D, TW-87, OW-36, OW-27T, OW-28T, TW-56 and OW-35 were elevated for GRO analyses due to sample dilution necessary for high concentrations of target analytes.

RLs for samples TW-106S, TW-92, OW-29, OW-31, ES-03, TW-116D, TW-108, TW-107 and TW-36 were elevated for VOCs analysis due to sample dilution necessary for high concentrations of target analytes. RLs for samples TW-96, TW-87, N3-3, OW-36, N3-2, TW-23D, TW-116S and TW-32D were elevated for VOCs analysis due to sample dilution necessary for excessive foaming.

RLs for samples TW-106S, TW-96, OW-30, OW-32, ES-03 and N3-4 were elevated for TDS analysis due to sample dilution necessary for high concentrations of target analytes.

RLs for samples TW-106S, TW-130, TW-92, OW-30, ES-03, N3-2, TW-23D, TW-75, OW-27T, SB-38, SB-538, N3-4, OW-21 and SW-CREEK were elevated for sulfate analysis due to sample dilution necessary for high concentrations of target analytes.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. Sample TW-116D was mislabeled on the C-O-C as TW-116B. For the purposes of this report, TW-116D was used. The C-O-Cs stated the samples were received within 2°C and 6°C.

Samples TW-106S reanalysis, OW-29 reanalysis, OW-30, OW-31 reanalysis, ES-03 reanalysis, TW-116D reanalysis, TW-107, TW-36, TW-36 reanalysis, TW-79 and TRIP BLANK (2/25/09) were analyzed outside of holding time for VOCs. VOCs for the listed samples were qualified as estimated (J or UJ), due to holding time exceedance.

Calibrations

Calibrations for lead, DRO and GRO were within laboratory acceptance criteria. VOCs initial calibration curve R9C0301 had greater than 15% relative standard deviation (RSD) and was calibrated using linear regression for naphthalene. Since the average RSD was less than 15%, qualification was not required for naphthalene. Additionally, 1,1,2-trichlorotrifluoroethane had RSDs greater than 15%; however, these compounds were not reported for the samples analyzed and did not require qualification.

VOCs continuing calibration verification (CCV) sequence RC91004 had greater than 20% difference (D) and was calibrated using linear regression for 1,1,2,2,tetrachloroethane, 2-butanone, 4-methyl-2-pentanone, acetone, bromoform, bromomethane and tert-butylbenzene. Associated samples were reported as not-detected for the listed compounds and did not require qualification. This CCV also had greater than 20%D for 1,2,3-trichlorobenzene, 1,2,3-trichloropropane, 1,2-dibromo-3-chloropropane, acetonitrile, acrolein, acrylonitrile, hexachlorobutadiene, tetrahydrofuran, trans-1,4-dichloro-2-butene, vinyl acetate, 1,2,3-trimethylbenzene, 1,3,5-trichlorobenzene, 2-nitropropane, 3-chlorotoluene, allyl chloride, chlorodifluoromethane, chloroprene, dichlorofluoromethane, dicyclopentadiene, diethyl ether, epichlorohydrin, ethyl acetate, ethyl tert-butyl ether, heptane, hexane, isobutanol, isopropyl alcohol, isopropyl ether, methacrylonitrile, methyl methacrylate, n-butanol, pentachloroethane, p-monochlorobenzotrifluoride, propionitrile and propylene oxide. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC90415 for 1,4-dioxane had greater than 20% D and was calibrated using linear regression. Associated samples were reported as not-detected for the listed compound and did not require qualification. This CCV also had greater than 20%D for 2-nitropropane, allyl chloride, chlorodifluoromethane, chloroprene, diethyl ether, heptane, hexane, isopropyl alcohol, isopropyl ether, n-butanol, propylene oxide and t-butanol. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC90503 for bromomethane and 1,4-dioxane had greater than 20% D and was calibrated using linear regression. Associated samples were reported as not-detected for the listed compounds and did not require qualification. This CCV also had greater than 20%D for 1,1-dimethoxyethane, 1,2,3-trimethylbenzene, 3-chlorotoluene, allyl chloride, chloroprene, dicyclopentadiene, diethyl ether, ethyl tert-butyl ether, heptane, hexane, methyl methacrylate, propylene oxide and t-butanol. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC90102 for carbon disulfide and isopropylbenzene had greater than 20% D and was calibrated using linear regression. Associated samples were reported as not-detected for the listed compounds and did not require qualification. This CCV also had greater than 20%D for 1,1,2-trichlorotriflurorethane, acrolein, cyclohexanone, dichlorofluoromethane, m-monochlorobezotrifluoride and o-monochlorobenzotrifluoride. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC92328 had greater than 20% D and was calibrated using linear regression for bromoform and 1,4-dioxane. The associated sample was reported as not-detected for the listed compounds and did not require qualification. This CCV also had greater than 20%D for 1,2-dibromo-3-chloropropane, acetonitrile, acrolein, tetrahydrofuran, trans-1,4-dichloro-2-butene, 1,3,5-trichlorobenzene, 2-nitropropane, allyl chloride, chlorodifluoromethane, cyclohexanone, dichlorofluoromethane, epichlorohydrin, ethyl acetate, ethyl tert-butyl ether, heptane, hexane, isobutanol, isopropyl alcohol, methacrylonitrile, methyl methacrylate, n-butanol, propionitrile, propylene oxide, t-butanol and tert-amyl methyl ether. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC91402 had greater than 20% D and was calibrated using linear regression for 2-butanone, 2-hexanone, 4-methyl-2-pentanone, acetone, carbon disulfide, chloromethane, isopropylbenzene and 1,4-dioxane. The associated sample, TW-36 reanalysis, was reported as detected for isopropylbenzene and was as qualified estimated (J). The other listed compounds were reported as not-detected and did not

require qualification. This CCV also had greater than 20%D for 1,2-dibromo-3-chloropropane, acetonitrile, acrolein, acrylonitrile, iodomethane, methyl acetate, tetrahydrofuran, trichlorofluoromethane, vinyl acetate, 2-nitropropane, allyl chloride, chlorodifluoromethane, chloroprene, cyclohexanone, diethyl ether, epichlorohydrin, ethyl acetate, heptane, isobutanol, isopropyl alcohol, isopropyl ether, methacrylonitrile, methyl methacrylate, n-butanol, propionitrile, propylene oxide and t-butanol. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC91301 had greater than 20% D and was calibrated using linear regression for 2-butanone, 2-hexanone, 4-methyl-2-pentanone, acetone, carbon disulfide, chloroethane, isopropylbenzene, methylene chloride, naphthalene and 1,4-dioxane. The associated sample, TW-36, was reported as detected for isopropylbenzene and naphthalene and was qualified as estimated (J). The other listed compounds were reported as not-detected and did not require qualification. This CCV also had greater than 20%D for 1,1,2-trichlorotrifluoroethane, 1,2-dibromo-3-chloropropane, acetonitrile, acrolein, acrylonitrile, iodomethane, methyl acetate, tetrahydrofuran, trichlorofluoromethane, 1,1-dimethoxyethane, 2-nitropropane, allyl chloride, chlorodifluoromethane, chloroprene, cyclohexanone, diethyl ether, epichlorohydrin, ethyl acetate, isobutanol, isopropyl alcohol, isopropyl ether, methacrylonitrile, methyl methacrylate, n-butanol, propionitrile, propylene oxide and t-butanol. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC90904 had greater than 20% D and was calibrated using linear regression for 1,1,2-trichloroethane, 1,2-dibromoethane, chlorobenzene, dibromochloromethane, ethylbenzene, naphthalene, tetrachloroethene, toluene, trans-1,3-dichloropropene and xylenes. The associated samples, TW-56, OW-21 and OW-35, were reported as detected for ethylbenzene, naphthalene, toluene and xylenes and were qualified as estimated (J). Additionally, sample TRIP BLANK (2/24/09) was qualified as estimated (J) for toluene and sample SB-538 was qualified as estimated (J) for ethylbenzene, due to elevated CCV recovery. The other listed compounds were reported as not-detected and did not require qualification. This CCV also had greater than 20%D for 1,1,1,2-tetrachloroethane, 1,3-dichloropropane, acrolein, dichlorodifluoromethane, methyl acetate, m-xylene, p-xylene, trans1,4-dichloro-2-butene, 2-nitropropane, chlorodifluoromethane, diethyl ether and pentachloroethane. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC90704 had greater than 20% D and was calibrated using linear regression for 1,1,2-trichloroethane, 1,2-dibromoethane, bromomethane, carbon disulfide, chlorobenzene, chloroethane, dibromochloromethane, ethylbenzene,

tetrachloroethene, toluene, trans-1,3-dichloropropene and xylenes. The associated samples, TW-75 and RINSE BLANK 4, were reported as detected for carbon disulfide and were qualified as estimated (J). Sample OW-27T was reported for carbon disulfide, ethylbenzene, toluene and xylenes and was qualified as estimated (J). Additionally, sample OW-28T was qualified as estimated (J) for ethylbenzene, toluene and xylenes, due to elevated CCV recovery. The other listed compounds were reported as not-detected and did not require qualification. This CCV also had greater than 20%D for 1,1,1,2-tetrachloroethane, 1,3-dichloropropane, iodomethane, m-xylene, p-xylene and chlorodifluoromethane. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC90605 had greater than 20% D and was calibrated using linear regression for 2-butanone, 2-hexanone, 4-methyl-2-pentanone, acetone, carbon disulfide, isopropylbenzene, naphthalene and 1,4-dioxane. The listed compounds were reported as not-detected in the associated samples and did not require qualification. This CCV also had greater than 20%D for 1,1,2-trichlorotrifluoroethane, 1,2-dibromo-3-chloropropane, acetonitrile, acrylonitrile, iodomethane, methyl acetate, tetrahydrofuran, trans-1,4-dichloro-2-butene, vinyl acetate, 2-nitropropane, allyl chloride, chlorodifluoromethane, cyclohexanone, epichlorohydrin, ethyl acetate, isobutanol, isopropyl alcohol, methacrylonitrile, methyl methacrylate, n-butanol, propionitrile, propylene oxide and t-butanol. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC90505 had greater than 20% D and was calibrated using linear regression for 1,1,2-trichloroethane, 1,2-dibromoethane, chlorobenzene, dibromochloromethane, ethylbenzene, naphthalene, tetrachloroethene, toluene, trans-1,3-dichloropropene, xylenes and 1,4-dioxane. The associated samples, TW-87 and OW-36, were reported as detected for ethylbenzene, naphthalene, toluene and xylenes and were qualified as estimated (J). Sample TW-116S was reported as detected for naphthalene and was qualified as estimated (J). The other listed compounds were reported as not-detected and did not require qualification. This CCV also had greater than 20%D for 1,1,1,2-tetrachloroethane, 1,3-dichloropropane, iodomethane, m-xylene, p-xylene and chlorodifluoromethane. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC90316 had greater than 20% D and was calibrated using linear regression for 2-butanone, 2-hexanone, 4-methyl-2-pentanone, acetone, bromoform, carbon disulfide, isopropylbenzene, naphthalene and 1,4-dioxane. The listed compounds were reported as not-detected in the associated sample and did not require

qualification. This CCV also had greater than 20%D for 1,2,3-trichlorobenzene, 1,2-dibromo-3-chloropropane, acetonitrile, acrylonitrile, ethyl methacrylate, iodomethane, methyl acetate, tetrahydrofuran, trans-1,4-dichloro-2-butene, vinyl acetate, 2-nitropropane, allyl chloride, chlorodifluoromethane, cyclohexanone, epichlorohydrin, ethyl acetate, isobutanol, isopropyl alcohol, methacrylonitrile, methyl methacrylate, n-butanol, propionitrile, propylene oxide and t-butanol. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC90202 had greater than 20% D and was calibrated using linear regression for 2-butanone, 2-hexanone, 4-methyl-2-pentanone, acetone, carbon disulfide, isopropylbenzene, naphthalene and 1,4-dioxane. Sample TW-106S was qualified as estimated (J) for isopropyl benzene and naphthalene, due to elevated CCV recovery. Sample TW-98 was qualified as estimated (J) for acetone, isopropyl benzene and naphthalene, due to elevated CCV recovery. Sample TW-97 was qualified as estimated (J) for 2-butanone, acetone, isopropylbenzene and naphthalene, due to elevated CCV recovery. Sample TW-92 was qualified as estimated (J) for acetone, due to elevated CCV recovery. The other listed compounds were reported as not-detected in the associated samples and did not require qualification. This CCV also had greater than 20%D for 1,2,3-trichlorobenzene, 1,2-dibromo-3-chloropropane, acetonitrile, acrylonitrile, ethyl methacrylate, iodomethane, methyl acetate, tetrahydrofuran, trans-1,4-dichloro-2-butene, vinyl acetate, 2-nitropropane, allyl chloride, chlorodifluoromethane, cyclohexanone, epichlorohydrin, ethyl acetate, isobutanol, isopropyl alcohol, methacrylonitrile, methyl methacrylate, n-butanol, propionitrile, propylene oxide and t-butanol. Samples were not reported for these compounds and did not require qualification.

VOCs CCV sequence RC90301 had greater than 20% D and was calibrated using linear regression for 2-butanone, 2-hexanone, 4-methyl-2-pentanone, acetone, bromoform, carbon disulfide, chloroethane, isopropylbenzene, naphthalene and 1,4-dioxane. Sample TW-130 was qualified as estimated (J) for isopropyl benzene and naphthalene, due to elevated CCV recovery. The other listed compounds were reported as not-detected in the associated samples and did not require qualification. This CCV also had greater than 20%D for 1,2-dibromo-3-chloropropane, 1,1-dimethoxyethane, 2-nitropropane, chlorodifluoromethane, cyclohexanone, dichlorofluoromethane, epichlorohydrin, ethyl acetate, isobutanol, isopropyl alcohol, methacrylonitrile, methyl methacrylate, n-butanol, propionitrile, propylene oxide and t-butanol. Samples were not reported for these compounds and did not require qualification.

Blanks

VOCs, GRO, lead, chloride and nitrate were reported as not-detected in the method blanks. Total alkalinity batches 9B23068. 9B25069, 9B26077 and 9B27035 were reported as not-detected in the method blanks. Nitrite batches 9C03040, 9B26106, 9B26100, 9B24073, 9B21026 and 9B20102 were reported as not-detected in the method blanks. TDS batches 9B20072, 9B20071, 9B22034, 9B23035, 9B27026, 9B27027 and 9B27028 were reported as not-detected in the method blanks. DRO batches 9B26051, 9B23047, 9B21002 and 9B19076 were reported as not-detected in the method blanks. Sulfate batch 9B21015 was reported as not-detected in the method blank.

Total alkalinity batch 9B20073 had a detection of 1.93 J mg/L in the method blank. Samples TW-24D, TW-524, TW-106S, TW-96, TW-98, TW-97, TW-130 and TW-92 were qualified as estimated (B) for total alkalinity, due to method blank contamination.

Nitrite batch 9B19088 had a detection of 0.03 J mg/L in the method blank. Sample TW-98 was qualified as estimated (B) for nitrite, due to method blank contamination.

TDS was reported as detected in the method blanks for batches 9B26047 (5 J mg/L), 9B24044 (7 J mg/L) and 9B25041 (6 J mg/L). Samples SB-38, SB-538, N3-4, TW-56, OW-36, N3-2, TW-23D, TW-116S, TW-78, TW-75, TW-578, OW-27T and OW-28T were qualified as estimated (B) for TDS, due to method blank contamination.

DRO was reported as detected in the method blanks for batches 9B22014 (0.16 J mg/L), 9B24054 (0.21 J mg/L) and 9B25076 (0.19 J mg/L). Samples TW-87, N3-3, OW-36, N3-2, TW-116S, TW-78, TW-578, OW-27T, OW-28T, SB-38, SB-538, N3-4, TW-56, OW-21 and OW-35 were qualified as estimated (B) for DRO, due to method blank contamination.

Sulfate was reported as detected in the method blanks for batches 9B27082 (1.5 J mg/L), 9B26088 (1.1 J mg/L), 9B26087 (1.7 J mg/L), 9B25019 (3.1 J mg/L), 9B25013 (1.6 J mg/L), 9B24067 (1.5 J mg/L) and 9B21013 (0.7 J mg/L). Samples SW-POND, SW-CREEK, SB-538, N3-4, OW-21, SB-38, TW-56, OW-35, TW-23D, TW-75, OW-27T, OW-30, OW-32, ES-03, OW-33, TW-116D, TW-87, N3-3, N3-2, OW-29, OW-31, OW-36, TW-116S, TW-78, TW-578, OW-28T, TW-24D, TW-524, TW-96, TW-98 and TW-97 were qualified as estimated (B) for sulfate, due to method blank contamination.

VOCs batch 9C04075 method blank was reported as estimated detected for 1,2,3-trichlorobenzene (0.5 J ug/L), 1,2,4-trichlorobenzene (0.65 J ug/L) and hexachlorobutadiene (1.1 J ug/L). Associated samples were not reported for these compounds and did not require qualification.

TRIP BLANKS (2-18-09), (2-19-09), (2-20-09), (2-23-09) and (2-25-09) were reported as not-detected for VOCs. TRIP BLANK (2-24-09) was reported as estimated detected for acetone (1.4 J ug/L), benzene (0.3 J ug/L) and toluene (0.51 J ug/L). Associated samples SB-38, SB-538, N3-4, TW-56, OW-21 and OW-35 were qualified as estimated (B) for acetone, due to trip blank contamination. Samples N3-4, TW-56, OW-21 and OW-35 were qualified as estimated (B) for benzene, due to trip blank contamination. Samples TW-56, OW-21 and OW-35 were qualified as estimated (B) for toluene, due to trip blank contamination.

RINSE BLANK 2 and RINSE BLANK 3 were reported as not-detected for VOCs. RINSE BLANK 4 was reported as estimated detected for acetone (1.9 J ug/L) and carbon disulfide (0.22 J ug/L). Associated samples TW-78, TW-75, TW-578, OW-28T and OW-27T were qualified as estimated (B) for acetone, due to rinsate blank contamination. Samples TW-75 and OW-27T were qualified as estimated (B) for carbon disulfide, due to rinsate blank contamination. RINSE BLANK 5 was reported as estimated detected for benzene (0.22 J ug/L). Associated samples N3-4, TW-56, OW-21 and OW-35 were qualified as estimated (B) for benzene, due to rinsate blank contamination.

Internal Standard and Surrogate Recoveries

VOCs, DRO and GRO surrogate recoveries were within laboratory acceptance limits. Most internal standards were within method acceptance limits for Method 8260.

Sample SB-538 was only spiked with one VOC surrogate and sample N3-4 was spiked with two of the three VOC surrogates. The laboratory did not give an explanation as to why all three surrogates were not spiked.

Internal standard chlorobenzene-d5 had low recovery for samples TW-75 and OW-27T. Associated compounds (toluene, trans-1,3-dichloropropene, 2-hexanone, 1,1,2-trichloroethane, dibromochloromethane, tetrachloroethene, chlorobenzene, ethylbenzene, xylenes, styrene, bromoform, isopropylbenzene and 1,1,2,2-tetrachloroethane), were qualified as estimated (J or UJ) for TW-75 and OW-27T, due to low internal standard recovery.

Laboratory Control Samples (Blank Spike)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for DRO, chloride, nitrate, nitrite, sulfate, lead, total alkalinity and TDS. LCS for GRO batches 9B28003, 9B28001, 9B27009, 9B27008, 9B27007 and 9B27003 met the laboratory QC acceptance criteria. VOCs batches 9C02018, 9C04075, 9C05021and 9C09033 LCS met the

laboratory QC acceptance criteria. VOCs batches 9C07011 and 9C01006 LCS was within acceptance limits; however, the laboratory only spiked five compounds for LCS analysis.

GRO batch 9C03024 had elevated LCS recovery. Samples SW-POND and SW-CREEK were qualified as estimated (J) for GRO, due to elevated LCS recovery.

VOC batch 9C05028 had low LCS recovery for acrolein. Samples were not reported for this compound and did not require qualification.

VOC batch 9C13003 had low LCS recovery for 4-methyl-2-pentanone. Samples TW-107, TW-36 and TW-79 were qualified as non-detect estimated (UJ) for 4-methyl-2-pentanone, due to low LCS recovery.

VOC batch 9C03011 had elevated LCS recovery for carbon disulfide and isopropylbenzene. Associated samples were reported as not-detected for carbon disulfide and did not require qualification. Sample TW-130 was qualified as estimated (J) for isopropylbenzene, due to elevated LCS recovery.

VOC batch 9C03055 had elevated LCS recovery for carbon disulfide and low LCS recovery for 4-methyl-2-pentanone. Associated samples were reported as not-detected for carbon disulfide and did not require qualification. Sample TW-92 reanalysis was qualified as non-detect estimated (UJ) for 4-methyl-2-pentanone, due to low LCS recovery.

VOC batch 9C06026 had elevated LCS recovery for bromobenzene and isopropylbenzene. Associated samples were reported as not-detected for these two compounds and did not require qualification.

VOC batch 9C10008 had elevated LCS recovery for naphthalene. Sample TW-108 was qualified as estimated (J) for naphthalene, due to elevated LCS recovery.

VOC batch 9C23079 had low LCS recovery for methyl acetate and elevated recovery for acrolein and carbon disulfide. Samples were reported as not-detected for carbon disulfide and did not require qualification. Samples were not reported for methyl acetate and acrolein and did not require qualification.

VOC batch 9C14001 had low LCS recovery for 2-hexanone, 4-methyl-2-pentanone and acrolein and elevated recovery for carbon disulfide, iodomethane and isopropylbenzene. Sample TW-36 reanalysis was qualified as estimated (J or UJ) for 2-hexanone, 4-methyl-2-pentanone and isopropylbenzene, due to LCS recovery outside acceptance criteria. Carbon disulfide was reported as not-detected and did not require qualification. Samples were not reported for iodomethane and acrolein and did not require qualification

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) was analyzed for compounds discussed below. MS/MSD analysis is not required for TDS.

Chloride batches 9C02014, 9B26019, 9B27013, 9C02006 and 9B26031 had MS/MSD analyzed on samples that were not associated with the project site and were not used for qualification. Chloride MS/MSD batches 9B25024 (analyzed on sample TW-98), 9B25021 (analyzed on sample ES-03), 9B27015 (analyzed on sample OW-28T) and 9C02021 (analyzed on sample N3-4) were within laboratory acceptance criteria.

Lead MS/MSD for batch 9B26055 (analyzed on sample SB-37-FIL) was within laboratory acceptance criteria. Lead batch 9B26057 did not have an associated MS/MSD.

Total alkalinity batch 9B27035 had MS/MSD analyzed on a sample that was not associated with the project site and was not used for qualification. Total alkalinity MS/MSD batches 9B20073 (analyzed on sample TW-24D), 9B23068 (analyzed on sample TW-32D), 9B25069 (analyzed on sample TW-78) and 9C26007 (analyzed on sample SB-38) were within laboratory acceptance criteria.

Nitrite batches 9C03040, 9B26100, 9B21026 and 9B20102 did not have an associated MS/MSD. Nitrite MS/MSD batches 9B19088 (analyzed on sample TW-24D), 9B24073 (analyzed on sample TW-78) and 9B26106 (analyzed on sample SB-38) were within laboratory acceptance criteria.

Nitrate batches 9B24071 did not have an associated MS/MSD. Nitrate batches 9B26095, 9B20100 and 9B261025 had MS/MSD analyzed on samples that were not associated with the project site and were not used for qualification. Nitrate MS/MSD batches 9B26003 (analyzed on sample SB-38), 9B24070 (analyzed on sample TW-78) and 9B19092 (analyzed on sample TW-24D) were within laboratory acceptance criteria.

DRO batches 9B22014, 9B21002, 9B23047 and 9B26051 did not have an associated MS/MSD. DRO MS/MSD batches 9B19076 (analyzed on sample TW-24D), 9B24054 (analyzed on sample TW-78) and 9B25076 (analyzed on sample SB-38) were within laboratory acceptance criteria.

GRO batches 9B27009, 9C03024, 9B27007, 9B28001 and 9B27003 did not have an associated MS/MSD. GRO MS/MSD batches 9B28003 (analyzed on sample TW-106S) and 9B27008 (analyzed on sample OW-28T) were within laboratory acceptance criteria.

Sulfate batch 9B25013 did not have an associated MS/MSD. Sulfate batches 9B25019, 9B21015, 9B27082 and 9B26088 had MS/MSD analyzed on samples that were not associated with the project site and were not used for qualification. Sulfate MS/MSD batches 9B240673 (analyzed on sample TW-78) and 9B21013 (analyzed on sample TW-

24D) had elevated MS/MSD recovery for sulfate. Samples TW-78, OW-29, OW-31, OW-36, TW-116S, TW-578, OW-28T, TW-24D, TW-524, TW-98, TW-96 and TW-97 were qualified as estimated (J) for sulfate, due to elevated MS/MSD recovery. Sulfate MS/MSD batch 9B26087 (analyzed on sample SB-38) was within laboratory acceptance criteria.

VOC batches 9C13003, 9C03011, 9C03055, 9C05021, 9C06026, 9C10008, 9C23079 and 9C14001 did not have an associated MS/MSD. VOC batches 9C05028, 9C04075 and 9C02018 had MS/MSD analyzed on samples that were not associated with the project site and were not used for qualification. VOC batches 9C01006 (analyzed on sample TW-24D), 9C07011 (analyzed on sample TW-78) and 9C09033 (analyzed on sample SB-38) were within laboratory acceptance criteria; however, the laboratory only spiked five compounds for MS/MSD analysis.

Post Digestion Spikes and Serial Dilutions

Post digestion spike (PDS) and serial dilution analysis was not required for VOCs, DRO, GRO, chloride, nitrate, nitrite, sulfate, total alkalinity and TDS.

Lead batch 9B26057 did not have an associated PDS or serial dilution analysis. Lead batch 9B26055 PDS analyzed on sample SB-37-FIL was within acceptance limits. This batch did not have an associated serial dilution.

Laboratory Duplicates

Laboratory duplicate analysis was not required for VOCs, DRO, GRO, nitrite and lead. TDS batches 9B23034, 9B23035, 9B27026, 9B27027, 9B27028 and 9B24044 had laboratory duplicates analyzed on samples that were not associated with the project site and were not used for qualification. Laboratory duplicates for TDS batches 9B20072 (analyzed on sample ES-03), 9B20071 (analyzed on sample TW-24D), 9B26047 (analyzed on sample SB-38) and 9B25041 (analyzed on sample TW-78) were within laboratory acceptance criteria.

Chloride batches 9C02014, 9B26019, 9B27013, 9C02006 and 9B25024 had laboratory duplicates analyzed on samples that were not associated with the project site and were not used for qualification. Chloride batches 9B25021, 9B27015, 9C02021 and 9B26031 did not have associated laboratory duplicates.

Total alkalinity batch 9B26077 had a laboratory duplicate analyzed on a sample that was not associated with the project site and was not used for qualification. Total alkalinity batches 9B20073 and 9B25069 did not have associated laboratory duplicates. Laboratory

duplicates for batches 9B23069 (analyzed on sample TW-116S) and 9B27035 (analyzed on sample SW-CREEK) were within laboratory acceptance criteria for total alkalinity.

Nitrate batches 9B21025, 9B26003 and 9B24070 had laboratory duplicates analyzed on samples that were not associated with the project site and was not used for qualification. Nitrate batches 9B24071, 9B19092 and 9B26095 did not have associated laboratory duplicates. Laboratory duplicate for batch 9B20100 (analyzed on sample TW-116D) was within laboratory acceptance criteria for nitrate.

Sulfate batches 9B25019, 9B21015, 9B72082, 9B26088 and 9B24067 had laboratory duplicates analyzed on samples that were not associated with the project site and was not used for qualification. Sulfate batches 9B26087, 9B25013 and 9B21013 did not have associated laboratory duplicates.

Field Precision

Three field duplicate samples were included in this data package (TW-78/TW-578, TW-24D/TW-524 and SB-38/SB-538).

Both sample and duplicate TW-78/TW-578 were reported as detected or estimated detected for chloride, DRO, GRO, total alkalinity, TDS, sulfate, acetone, sec-butylbenzene and tert-butylbenzene. Additionally, sample TW-578 was reported as estimated detected for styrene. Sample/duplicate precision calculations were less than the QAPP 50% relative percent difference (RPD) for organics and 30% RPD for inorganics for chloride, DRO, GRO, total alkalinity, TDS, sulfate, acetone, sec-butylbenzene and tert-butylbenzene. Organics RPD was elevated for styrene.

Both sample and duplicate TW-24D/TW-524 were reported as detected or estimated detected for chloride, DRO, GRO, total alkalinity, TDS, sulfate, methyl tert-butyl ether and naphthalene. Sample/duplicate precision calculations were less than the QAPP 50% RPD for organics and 30% RPD for inorganics for chloride, DRO, GRO, total alkalinity, TDS, methyl tert-butyl ether and naphthalene. Inorganics RPD was elevated for sulfate.

Both sample and duplicate SB-35/SB538 were reported as detected or estimated detected for chloride, DRO, GRO, total alkalinity, TDS, sulfate and acetone. Additionally, sample TW-538 was reported as estimated detected for 2-butanone, carbon disulfide and ethylbenzene. Sample/duplicate precision calculations were less than the QAPP 50% RPD for organics and 30% RPD for inorganics for chloride, DRO, GRO, total alkalinity, TDS, sulfate, carbon disulfide and ethylbenzene. Organics RPD was elevated for 2-butanone and acetone.

The QAPP does not require qualification for sample/duplicate precision outside acceptance criteria. Sample/duplicate precision calculations are included in Table 3.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that samples TW-106S reanalysis, OW-29 reanalysis, OW-30, OW-31 reanalysis, ES-03 reanalysis, TW-116D reanalysis, TW-107, TW-36, TW-36 reanalysis, TW-79 and TRIP BLANK (2/25/09) were analyzed outside of holding time for VOCs, and were qualified as estimated (J or UJ). TW-36 reanalysis was qualified estimated (J) for isopropylbenzene, due to CCV outside acceptance criteria. TW-36 was qualified as estimated (J) for isopropylbenzene and naphthalene, due to CCV outside acceptance criteria. Samples TW-56, OW-21 and OW-35 were qualified as estimated (J) for ethylbenzene, naphthalene, toluene and xylenes, due to CCV outside acceptance criteria. Sample TRIP BLANK (2/24/09) was qualified as estimated (J) for toluene and sample SB-538 was qualified as estimated (J) for ethylbenzene, due to elevated CCV recovery. Samples TW-75 and RINSE BLANK 4 were qualified as estimated (J) for carbon disulfide, due to CCV outside acceptance criteria. Sample OW-27T was qualified as estimated (J) for carbon disulfide, ethylbenzene, toluene and xylenes, due to CCV outside acceptance criteria. Sample OW-28T was qualified as estimated (J) for ethylbenzene, toluene and xylenes, due to elevated CCV recovery. Samples TW-87 and OW-36 were qualified as estimated (J) for ethylbenzene, naphthalene, toluene and xylenes, due to CCV outside acceptance criteria. Sample TW-116S was qualified as estimated (J) for naphthalene, due to CCV outside acceptance criteria. Sample TW-106S was qualified as estimated (J) for isopropyl benzene and naphthalene, due to elevated CCV recovery. Sample TW-98 was qualified as estimated (J) for acetone, isopropyl benzene and naphthalene, due to elevated CCV recovery. Sample TW-97 was qualified as estimated (J) for 2-butanone, acetone, isopropylbenzene and naphthalene, due to elevated CCV recovery. Sample TW-92 was qualified as estimated (J) for acetone, due to elevated CCV recovery. Sample TW-130 was qualified as estimated (J) for isopropyl benzene and naphthalene, due to elevated CCV recovery.

Samples TW-24D, TW-524, TW-106S, TW-96, TW-98, TW-97, TW-130 and TW-92 were qualified as estimated (B) for total alkalinity, due to method blank contamination. Sample TW-98 was qualified as estimated (B) for nitrite, due to method blank contamination. Samples SB-38, SB-538, N3-4, TW-56, OW-36, N3-2, TW-23D, TW-116S, TW-78, TW-75, TW-578, OW-27T and OW-28T were qualified as estimated (B) for TDS, due to method blank contamination. Samples TW-87, N3-3, OW-36, N3-2, TW-116S, TW-78, TW-578, OW-27T, OW-28T, SB-38, SB-538, N3-4, TW-56, OW-21 and OW-35 were qualified as estimated (B) for DRO, due to method blank

contamination. Samples SW-POND, SW-CREEK, SB-538, N3-4, OW-21, SB-38, TW-56, OW-35, TW-23D, TW-75, OW-27T, OW-30, OW-32, ES-03, OW-33, TW-116D, TW-87, N3-3, N3-2, OW-29, OW-31, OW-36, TW-116S, TW-78, TW-578, OW-28T, TW-24D, TW-524, TW-96, TW-98 and TW-97 were qualified as estimated (B) for sulfate, due to method blank contamination. Samples SB-38, SB-538, N3-4, TW-56, OW-21 and OW-35 were qualified as estimated (B) for acetone, due to trip blank contamination. Samples N3-4, TW-56, OW-21 and OW-35 were qualified as estimated (B) for benzene, due to trip blank contamination. Samples TW-56, OW-21 and OW-35 were qualified as estimated (B) for toluene, due to trip blank contamination. Samples TW-78, TW-75, TW-578, OW-28T and OW-27T were qualified as estimated (B) for acetone, due to rinsate blank contamination. Samples TW-75 and OW-27T were qualified as estimated (B) for carbon disulfide, due to rinsate blank contamination. Samples N3-4, TW-56, OW-21 and OW-35 were qualified as estimated (B) for benzene, due to rinsate blank contamination.

Samples TW-75 and OW-27T were qualified as estimated (J or UJ) for toluene, trans-1,3-dichloropropene, 2-hexanone, 1,1,2-trichloroethane, dibromochloromethane, tetrachloroethene, chlorobenzene, ethylbenzene, xylenes, styrene, bromoform, isopropylbenzene and 1,1,2,2-tetrachloroethane, due to low internal standard recovery.

Samples SW-POND and SW-CREEK were qualified as estimated (J) for GRO, due to elevated LCS recovery. Samples TW-107, TW-36 and TW-79 were qualified as non-detect estimated (UJ) for 4-methyl-2-pentanone, due to low LCS recovery. Sample TW-130 was qualified as estimated (J) for isopropylbenzene, due to elevated LCS recovery. Sample TW-92 reanalysis was qualified as non-detect estimated (UJ) for 4-methyl-2-pentanone, due to low LCS recovery. Sample TW-108 was qualified as estimated (J) for naphthalene, due to elevated LCS recovery. Sample TW-36 reanalysis was qualified as estimated (J or UJ) for 2-hexanone, 4-methyl-2-pentanone and isopropylbenzene, due to LCS recovery outside acceptance criteria.

Samples TW-78, OW-29, OW-31, OW-36, TW-116S, TW-578, OW-28T, TW-24D, TW-524, TW-98, TW-96 and TW-97 were qualified as estimated (J) for sulfate, due to elevated MS/MSD recovery.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
RSB0604-01	TW-24D	Groundwater
RSB0604-02	TW-524	Groundwater
RSB0604-03	TW-106S	Groundwater
RSB0604-04	TW-96	Groundwater
RSB0604-05	TW-98	Groundwater
RSB0604-06	TW-97	Groundwater
RSB0604-07	TW-130	Groundwater
RSB0604-08	TW-92	Groundwater
RSB0604-09	RINSE BLANK 2	Water
RSB0604-10	TRIP BLANK (2/18/09)	Water
RSB0643-01	OW-29	Groundwater
RSB0643-02	OW-30	Groundwater
RSB0643-03	OW-31	Groundwater
RSB0643-04	OW-32	Groundwater
RSB0643-05	ES-03	Groundwater
RSB0643-06	OW-33	Groundwater
RSB0643-07	TW-116D	Groundwater
RSB0643-08	TW-32D	Groundwater
RSB0643-09	TRIP BLANK (2/19-09)	Water
RSB0691-01	TW-87	Groundwater
RSB0691-02	N3-3	Groundwater
RSB0691-03	OW-36	Groundwater
RSB0691-04	N3-2	Groundwater
RSB0691-05	TW-23D	Groundwater
RSB0691-06	TW-116S	Groundwater
RSB0691-07	TW-32D	Groundwater
RSB0691-08	SB-11-FIL	Groundwater
RSB0691-09	SB-37-FIL	Groundwater
RSB0691-10	SB-11-UNFIL	Groundwater

Table 1 Continued
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
RSB0691-11	SB-37-UNFIL	Groundwater
RSB0691-12	RINSE BLANK 3	Water
RSB0691-13	TRIP BLANK (2/20/09)	Water
RSB0732-01	TW-78	Groundwater
RSB0732-02	TW-75	Groundwater
RSB0732-03	TW-578	Groundwater
RSB0732-04	OW-27T	Groundwater
RSB0732-05	OW-28T	Groundwater
RSB0732-06	RINSE BLANK 4	Water
RSB0732-07	TRIP BLANK (2/23/09)	Water
RSB0789-01	SB-38	Groundwater
RSB0789-02	SB-538	Groundwater
RSB0789-03	N3-4	Groundwater
RSB0789-04	TW-56	Groundwater
RSB0789-05	OW-21	Groundwater
RSB0789-06	OW-35	Groundwater
RSB0789-07	RINSE BLANK 5	Water
RSB0789-08	TRIP BLANK (2/24/09)	Water
RSB0835-01	SW-POND	Surface Water
RSB0835-02	SW-CREEK	Surface Water
RSB0835-03	TW-108	Groundwater
RSB0835-04	TW-107	Groundwater
RSB0835-05	TW-36	Groundwater
RSB0835-06	TW-79	Groundwater
RSB0835-07	TRIP BLANK (2/25/09)	Water

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-106S Reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methylene chloride n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-106S Reanalysis	Trichloroethene Vinyl chloride	UJ	Holding time exceedance.
TW-106S Reanalysis	Benzene Methyl-tert-butyl ether Naphthalene Xylenes	J	Holding time exceedance.
OW-29 Reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone 4-Methyl-2-pentanone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Methyl-tert-butyl ether Methylene chloride Styrene tert-Butylbenzene Tetrachloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
OW-29 Reanalysis	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene p-Cymene Acetone Benzene Ethylbenzene Isopropylbenzene Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Toluene Xylenes	J	Holding time exceedance.
OW-30	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Methylene chloride	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
OW-30	n-Butylbenzene Styrene Tetrachloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	Holding time exceedance.
OW-30	1,2,4-Trimethylbenzene Benzene Isopropylbenzene Methyl-tert-butyl ether Naphthalene n-Propylbenzene sec-Butylbenzene tert-Butylbenzene Toluene Xylenes	J	Holding time exceedance.
OW-31 Reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone 4-Methyl-2-pentanone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
OW-31 Reanalysis	Methylene chloride Naphthalene Styrene Tetrachloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	Holding time exceedance.
OW-31 Reanalysis	1,2,4-Trimethylbenzene p-Cymene Acetone Benzene Ethylbenzene Isopropylbenzene Methyl-tert-butyl ether n-Butylbenzene n-Propylbenzene sec-Butylbenzene tert-Butylbenzene Toluene Xylenes	J	Holding time exceedance.
ES-03 Reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
ES-03 Reanalysis	Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Xylenes	UJ	Holding time exceedance.
ES-03 Reanalysis	1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dichloroethane Methyl-tert-butyl ether Trichloroethene Vinyl chloride	J	Holding time exceedance.
TW-116D Reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-116D Reanalysis	Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
TW-116D Reanalysis	Methyl-tert-butyl ether	J	Holding time exceedance.
TW-107	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-107	2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
TW-107	1,1-Dichloroethane Total 1,2-Dichloroethene Benzene cis-1,2-Dichloroethene Methyl-tert-butyl ether	J	Holding time exceedance.
TW-36	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-36	1,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Methylene chloride n-Butylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	Holding time exceedance.
TW-36	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Benzene Ethylbenzene Isopropylbenzene Methyl-tert-butyl ether Naphthalene n-Propylbenzene Xylenes	J	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-36 Reanalysis	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Methylene chloride n-Butylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-36 Reanalysis	Benzene Ethylbenzene Isopropylbenzene Methyl-tert-butyl ether Naphthalene n-Propylbenzene Xylenes	J	Holding time exceedance.
TW-79	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ethylbenzene Isopropylbenzene Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-79	sec-Butylbenzene Styrene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
TW-79	Methyl-tert-butyl ether tert-Butylbenzene	J	Holding time exceedance.
Trip Blank (2/25/09)	1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane Total 1,2-Dichloroethene 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dioxane 2-Butanone 2-Hexanone p-Cymene 4-Methyl-2-pentanone Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Dibromochloromethane Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene	UJ	Holding time exceedance.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
Trip Blank (2/25/09)	Ethylbenzene Isopropylbenzene Methyl-tert-butyl ether Methylene chloride Naphthalene n-Butylbenzene n-Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Vinyl chloride Xylenes	UJ	Holding time exceedance.
TW-36 Reanalysis	Isopropylbenzene	J	Elevated CCV %D.
TW-36 TW-106S TW-130	Isopropylbenzene Naphthalene	J	Elevated CCV %D.
TW-56 OW-21 OW-35 TW-87 OW-36	Ethylbenzene Naphthalene Toluene Xylenes	J	Elevated CCV %D.
TRIP BLANK (2/24/09)	Toluene	J	Elevated CCV %D.
SB-538	Ethylbenzene	J	Elevated CCV %D.
TW-75 RINSE BLANK 4	Carbon disulfide	J	Elevated CCV %D.
OW-27T	Carbon disulfide Ethylbenzene Toluene Xylenes	J	Elevated CCV %D.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
OW-28T	Ethylbenzene Toluene Xylenes	J	Elevated CCV %D.
TW-116S	Naphthalene	J	Elevated CCV %D.
TW-98	Acetone Isopropylbenzene Naphthalene	J	Elevated CCV %D.
TW-97	2-Butanone Acetone Isopropylbenzene Naphthalene	J	Elevated CCV %D.
TW-92	Acetone	J	Elevated CCV %D.
TW-24D TW-524 TW-106S TW-96 TW-98 TW-97 TW-130 TW-92	Total alkalinity	B	Method blank contamination.
TW-98	Nitrite	B	Method blank contamination.
TW-78 TW-75 TW-578 OW-28T OW-27T	Acetone	B	Rinsate Blank contamination.
N3-4 TW-56 OW-21 OW-35	Benzene	B	Trip Blank contamination.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
SB-38 SB-538 N3-4 TW-56 OW-36 N3-2 TW-23D TW-116S TW-78 TW-75 TW-578 OW-27T OW-28T	TDS	B	Method blank contamination.
TW-87 N3-3 OW-36 N3-2 TW-116S TW-78 TW-578 OW-27T OW-28T SB-38 SB-538 N3-4 TW-56 OW-21 OW-35	DRO	B	Method blank contamination.
TW-56 OW-21 OW-35	Toluene	B	Trip Blank contamination.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
SB-38 SB-538 N3-4 TW-56 OW-21 OW-35	Acetone	B	Trip Blank contamination.
TW-75 OW-27T	Carbon disulfide	B	Rinsate Blank contamination.
SW-POND SW-CREEK SB-538 N3-4 OW-21 SB-38 TW-56 OW-35 TW-23D TW-75 OW-27T OW-30 OW-32 ES-03 OW-33 TW-116D TW-87 N3-3 N3-2 OW-29 OW-31 OW-36	Sulfate	B	Method blank contamination.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
TW-116S TW-78 TW-578 OW-28T TW-24D TW-524 TW-96 TW-98 TW-97	Sulfate	B	Method blank contamination.
N3-4 TW-56 OW-21 OW-35	Benzene	B	Rinsate Blank contamination.
TW-75	Toluene trans-1,3-dichloropropene 2-Hexanone 1,1,2-Trichloroethane Dibromochloromethane Tetrachloroethene Chlorobenzene Ethylbenzene Xylenes Styrene Bromoform Isopropylbenzene 1,1,2,2-Tetrachloroethane	UJ	Low internal standard recovery.
OW-27T	trans-1,3-dichloropropene 2-Hexanone 1,1,2-Trichloroethane Dibromochloromethane Tetrachloroethene Chlorobenzene Styrene Bromoform 1,1,2,2-Tetrachloroethane	UJ	Low internal standard recovery.
OW-27T	Isopropylbenzene Toluene Ethylbenzene Xylenes	J	Low internal standard recovery.

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
SW-POND SW-CREEK	GRO	J	Elevated LCS recovery.
TW-107 TW-36 TW-79 TW-92	4-Methyl-2-pentanone	UJ	Low LCS recovery.
TW-130	Isopropylbenzene	J	Elevated LCS recovery.
TW-108	Naphthalene	J	Elevated LCS recovery.
TW-36 Reanalysis	2-Hexanone 4-Methyl-2-pentanone	UJ	LCS outside acceptance criteria.
TW-36 Reanalysis	Isopropylbenzene	J	LCS outside acceptance criteria.
TW-78 OW-29 OW-31 OW-36 TW-116S TW-578 OW-28T TW-24D TW-524 TW-98 TW-96 TW-97	Sulfate	J	Elevated MS/MSD recovery.

J – The analyte was positively identified, the quantitation is an estimation.

UJ – Potential false negative due to low QC recoveries.

B – The analyte was found in an associated blank, as well as in the sample.

Table 3
Field Precision

Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Qualified
TW-24D/TW-524	Chloride (mg/L)	220	220	0	A
	DRO (mg/L)	4.8	5	4	A
	GRO (mg/L)	0.16	0.17	6	A
	Total Alkalinity (mg/L)	510 B	506 B	1	A
	TDS (mg/L)	790	771	2	A
	Sulfate (mg/L)	1 JB	1.5 JB	40	X
	MTBE (ug/L)	11	11	0	A
	Naphthalene (ug/L)	0.5 J	0.47 J	6	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data
X – Sample/duplicate precision outside acceptance criteria of 50% RPD for organics or 30% RPD for inorganics.

Table 3
Field Precision

Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Qualified
TW-78/TW-578	Chloride (mg/L)	290	280	4	A
	DRO (mg/L)	1.3 B	1.1 B	17	A
	GRO (mg/L)	0.22	0.25	13	A
	Total Alkalinity (mg/L)	463	460	1	A
	TDS (mg/L)	864 B	905 B	5	A
	Sulfate (mg/L)	2.7 JB	2.2 JB	20	A
	Acetone (ug/L)	1.6 J	1.7 J	6	A
	Sec-Butylbenzene (ug/L)	1.2	1.3	8	A
	Styrene (ug/L)	0.18 U	0.58 J	105	X
	Tert-Butylbenzene (ug/L)	0.83 J	0.82 J	1	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data
X – Sample/duplicate precision outside acceptance criteria of 50% RPD for organics or 30% RPD for inorganics.

Table 3
Field Precision

Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Qualified
TW-38/TW-538	Chloride (mg/L)	130	130	0	A
	DRO (mg/L)	0.47 JB	0.34 JB	32	A
	GRO (mg/L)	0.018 J	0.03	50	A
	Total Alkalinity (mg/L)	487	494	1	A
	TDS (mg/L)	893 B	873 B	2	A
	Sulfate (mg/L)	157 B	154 B	2	A
	2-Butanone (ug/L)	1.3 U	2.4 J	59	X
	Acetone (ug/L)	6.3	11	54	X
	Carbon disulfide (ug/L)	0.19 U	0.27 J	35	A
	Ethylbenzene (ug/L)	0.18 U	0.25 J	32	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data
X – Sample/duplicate precision outside acceptance criteria of 50% RPD for organics or 30% RPD for inorganics.

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. 6042857

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from Pace Analytical Laboratories (Pace) for the analysis of groundwater samples collected July 2, 2008 at the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- SW-846 8260 Skinner List –Volatile Organic Compounds (VOCs) by gas chromatography/mass spectrometry (GC/MS);
- SW-846 8260 OA1 - Gasoline Range Organics (GRO) by MS; and
- SW-846 8015B OA-2 – Diesel Range Organics (DRO) GC/Flame Ionization Detector (FID).

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

Two (2) groundwater samples were analyzed for VOCs, GRO and DRO. One (1) trip blank was submitted to the laboratory and was analyzed for VOCs. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the reporting limit (RL). RLs for samples TW-81 and 82 were elevated for VOC analysis due to sample dilution required for high concentrations of target analytes in these samples. RLs for sample TW-82 were elevated for GRO due to dilution required for high concentrations of target analytes in this sample.

Samples TW-81 and TW-82 were reported as detected for DRO as total petroleum hydrocarbons (TPH). According to the case narrative, the TPH detected did not match the lab standards of diesel fuel, fuel oil, jet fuel, kerosene, mineral spirits or motor oil.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The laboratory sample receipt checklist stated the samples were received within 2°C and 6°C.

Calibrations

Calibrations were within range for VOCs, DRO and GRO.

Blanks

VOCs, GRO and DRO were reported as not-detected in the method blanks.

One (1) trip blank was reported as not-detected for VOCs.

Internal Standard and Surrogate Recoveries

VOC, GRO and DRO surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Method 8260.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for VOCs, DRO and GRO.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) were not analyzed for VOCs, DRO and GRO were not analyzed as part of the laboratory quality control samples. According to Pace, the laboratory was not provided enough sample volume by the client to analyze MS/MSD for these methods.

Post Digestion Spikes and Serial Dilutions

Post digestion spike (PDS) and serial dilutions were not analyzed as part of this laboratory report, because they were not required for the methods analyzed.

Laboratory Duplicates

The laboratory did not analyze duplicate samples as part of the quality control for this laboratory package.

Field Precision

Field duplicates were not included in this data package.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
6042857001	TW-81	Water
6042857002	TW-82	Water
6042857003	Trip Blank	Water

MWH Americas, Inc.
El Dorado Refinery
Analytical Report SDG No. JA8427

Data Usability Summary

Data Usability Summary

Lori Burris-Glasgow (Four Star Environmental, Inc.) reviewed one data package from Accutest Laboratories for the analysis of soil vapor samples collected December 18, 2008 near the El Dorado Refinery Site in El Dorado, Kansas. Data were reviewed for conformance to the requirements of the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the soil vapor at the affected property. These data are used to determine if COCs are present and to characterize any COCs that are reported.

Analyses requested included:

- EPA TO-15 - Volatile Organic Compounds (VOCs) in air collected in specially-prepared canisters and analyzed by gas chromatography/mass spectrometry (GC/MS).

Data were reviewed and validated as described in the El Dorado Refinery Site Quality Assurance Project Plan (QAPP), Revision 2, September 2006 and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were examined:

- the reportable data,
- the quality control forms, and
- the laboratory case narratives.

The results of supporting quality control (QC) analyses were summarized on the laboratory case narratives in the analytical reports which were included in this review.

The reportable data, QC forms and case narratives included in this review were provided by the laboratory on compact disc (CD).

Introduction

One (1) soil vapor sample and one (1) duplicate soil vapor sample were analyzed for VOCs. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

Data Review/Validation Results

Analytical Results

The data package contains a minimum of one quality control batch per analytical method utilized. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Non-detected results are reported as less than the value of the reporting limit (RL). Qualified sample data is included in Table 2.

Preservation and Holding Times

Samples were evaluated for agreement with the chain-of-custody (C-O-C). Samples were received in the appropriate containers and in good condition with the paperwork filled out properly. The C-O-C stated that sample VP-01 canister was received at -22"of mercury instead of the method standard -28 to -30" of mercury. This canister may have accepted sample from the ambient air during shipment and may not accurately represent VOCs in soil vapor at the affected property. Therefore, detections of VOCs (acetone, toluene and naphthalene) in sample VP-01 were qualified as estimated (J).

Calibrations

Calibrations were within range for VOCs. Because naphthalene is not a compound listed in Method TO-15, the laboratory did not have a method detection limit (MDL) study or a calibration curve. Naphthalene was analyzed by this method based on a single point calibration, similar to a tentatively identified compound (TIC).

Blanks

VOCs were reported as not-detected in the method blanks.

Internal Standard and Surrogate Recoveries

VOC surrogate recoveries were within laboratory acceptance limits. Internal standards were within method acceptance limits for Method TO-15.

Laboratory Control Samples (Matrix Spike Blanks)

Laboratory control samples (LCS) met the laboratory QC acceptance criteria for VOCs. According to the laboratory, naphthalene was not spiked into the LCS, due to the instability of naphthalene in air.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) are not analyzed as part of Method TO-15.

Tentatively Identified Compounds

The laboratory analyzed Method TO-15 for TICs. Samples VP-01 and VP-100 each had one unknown compound reported.

Laboratory Duplicates

The laboratory analyzed a duplicate on a sample not associated with the project site. The sample was within laboratory acceptance criteria for duplicate analysis.

Field Precision

One (1) field duplicate sample was submitted to the laboratory and analyzed for VOCs (VP-01/VP-100). Both sample and duplicate were reported as detected for acetone and sample VP-01 was also reported as detected for naphthalene and toluene. The relative percent difference (RPD) was greater than 25% for acetone, naphthalene and toluene. Detections of these compounds were qualified as estimated (J), due to sample/duplicate precision outside acceptance criteria. Sample/duplicate precision calculations are included in Table 3.

Summary

The soil vapor analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the affected property.

The data user is advised that detections of VOCs (acetone, toluene and naphthalene) in sample VP-01 were qualified as estimated (J), due to initial canister pressure outside the acceptable range. Sample VP-01 was qualified as estimated (J) for acetone, toluene and naphthalene and sample VP-100 was qualified as estimated (J) for acetone, due to sample/duplicate precision outside acceptance criteria.

References:

El Dorado Refinery Site, El Dorado, Kansas, Quality Assurance Project Plan, Revision 2, September 2006.

Table 1
Cross-Reference between Laboratory Identifications and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
JA8427-1	VP-01	Soil Vapor
JA-8427-2	VP-100	Soil Vapor

Table 2
Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
VP-01	Acetone Naphthalene Toluene	J	Initial canister pressure outside acceptance criteria.
VP-01	Acetone Naphthalene Toluene	J	Sample/duplicate precision outside acceptance criteria.
VP-100	Acetone	J	Sample/duplicate precision outside acceptance criteria.

J – The analyte was positively identified, the quantitation is an estimation.

Table 3
Field Precision

Field Identification	Analyte	Sample Result (ppbv)	Duplicate Result (ppbv)	RPD[a]	Qualified
VP-01/VP-100	Acetone	22.3	14.8	40	X
	Naphthalene	2.7 E	1.6 U	51	X
	Toluene	3.9	0.16 U	184	X

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data
X – Sample/duplicate precision outside acceptance criteria of 25% RPD.

Accutest Laboratories

Report of Analysis

Client Sample ID:	VP-01				
Lab Sample ID:	JA8427-1			**Date Sampled:**	12/18/08
Matrix:	AIR - Air	Summa ID: A435		**Date Received:**	12/19/08
Method:	TO-15			**Percent Solids:**	n/a
Project:	El Dorado, Topeka Street (1800 North), El Dorado, KS				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W19570.D	1	01/06/09	YMH	n/a	n/a	VW834
Run #2							

	Initial Volume
Run #1	50.0 ml
Run #2	

VOA Special List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	22.3	1.6	0.35	ppbv		53.0	3.8	ug/m3
71-43-2	78.11	Benzene	ND	1.6	0.14	ppbv		ND	5.1	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	0.21	ppbv		ND	4.2	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	0.17	ppbv		ND	6.5	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	0.22	ppbv		ND	6.3	ug/m3
100-41-4	106.2	Ethylbenzene	ND	1.6	0.15	ppbv		ND	6.9	ug/m3
98-82-8	120	Isopropylbenzene	ND	1.6	0.15	ppbv		ND	7.9	ug/m3
78-93-3	72.11	Methyl ethyl ketone	ND	1.6	0.31	ppbv		ND	4.7	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	1.6	0.15	ppbv		ND	5.8	ug/m3
91-20-3	128.17	Naphthalene [a]	2.7	1.6		ppbv	E	14	8.4	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	1.6	0.19	ppbv		ND	7.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	1.6	0.17	ppbv		ND	7.9	ug/m3
108-88-3	92.14	Toluene	3.9	1.6	0.16	ppbv		15	6.0	ug/m3
75-01-4	62.5	Vinyl chloride	ND	1.6	0.25	ppbv		ND	4.1	ug/m3
1330-20-7	106.2	Xylenes (total)	ND	1.6	0.21	ppbv		ND	6.9	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		78-124%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Unknown	4.63	370	ppbv	J
	System artifact	14.22	41	ppbv	J
	System artifact	17.62	3300	ppbv	J
	System artifact	19.83	200	ppbv	J
	Total TIC, Volatile		370	ppbv	J

(a) Estimated value, quantitation based on single level standard.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	VP-100			
Lab Sample ID:	JA8427-2		**Date Sampled:**	12/18/08
Matrix:	AIR - Air	Summa ID: A584	**Date Received:**	12/19/08
Method:	TO-15		**Percent Solids:**	n/a
Project:	El Dorado, Topeka Street (1800 North), El Dorado, KS			

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W19571.D	1	01/06/09	YMH	n/a	n/a	VW834
Run #2							

	Initial Volume
Run #1	50.0 ml
Run #2	

VOA Special List

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	14.8	1.6	0.35	ppbv		35.2	3.8	ug/m3
71-43-2	78.11	Benzene	ND	1.6	0.14	ppbv		ND	5.1	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	0.21	ppbv		ND	4.2	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	0.17	ppbv		ND	6.5	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	0.22	ppbv		ND	6.3	ug/m3
100-41-4	106.2	Ethylbenzene	ND	1.6	0.15	ppbv		ND	6.9	ug/m3
98-82-8	120	Isopropylbenzene	ND	1.6	0.15	ppbv		ND	7.9	ug/m3
78-93-3	72.11	Methyl ethyl ketone	ND	1.6	0.31	ppbv		ND	4.7	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	1.6	0.15	ppbv		ND	5.8	ug/m3
91-20-3	128.17	Naphthalene	ND	1.6		ppbv		ND	8.4	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	1.6	0.19	ppbv		ND	7.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	1.6	0.17	ppbv		ND	7.9	ug/m3
108-88-3	92.14	Toluene	ND	1.6	0.16	ppbv		ND	6.0	ug/m3
75-01-4	62.5	Vinyl chloride	ND	1.6	0.25	ppbv		ND	4.1	ug/m3
1330-20-7	106.2	Xylenes (total)	ND	1.6	0.21	ppbv		ND	6.9	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%		78-124%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Unknown	4.63	410	ppbv	J
	System artifact	14.22	48	ppbv	J
	System artifact	17.62	3200	ppbv	J
	System artifact	19.83	230	ppbv	J
	Total TIC, Volatile		410	ppbv	J

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

APPENDIX B ANALYTICAL DATA AVAILABLE UPON REQUEST