APPROVED

May 2, 2014

Ms. Pamela Green
Kansas Department of Health and Environment
Bureau of Environmental Remediation
1000 SW Jackson Street, Suite 410
Topeka, Kansas 66612

Re: First Quarter 2014 Groundwater Monitoring Report
NuStar Andover Quail Crossing
Andover, Kansas
1641-04

Dear Ms. Green:

Enclosed, please find the First Quarter 2014 Groundwater Monitoring Report (Report). This Report was prepared by Apex Companies, LLC (Apex) on behalf of NuStar Pipeline Operating Partnership L.P. (NuStar) in response to a gasoline release from a NuStar refined petroleum pipeline in the Andover Quail Crossing Neighborhood.

If you have any questions or would like to discuss this further, please contact me at (503) 924-4704 ext. 111

Sincerely,

Sam Jackson
Associate Engineer

ATTACHMENT

First Quarter 2014 Groundwater Monitoring Report

cc: Ms. Renee Robinson, NuStar Energy, L.P. (electronic deliverable)

First Quarter 2014
Groundwater Monitoring Report
Quail Crossing Neighborhood
Andover, Kansas

Prepared for:
NuStar Pipeline Operating Partnership L.P.

May 2, 2014
1641-04

APEX

First Quarter 2014 Groundwater Monitoring Report Quail Crossing Neighborhood Andover, Kansas

Prepared for:
NuStar Pipeline Operating Partnership L.P.

May 2, 2014
1641-04

Sam Jackson
Associate Engineer

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Principal Geologist

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GROUNDWATER MONITORING REPORT

First Quarter 2014

NuStar Pipeline Operating Partnership L.P.

Quail Crossing Neighborhood

Andover, Kansas

Site Name and Location:	Quail Crossing Neighborhood Site	
	West Mountain and North Colt Court	
	Andover, Kansas	
Owner (Contact):	NuStar Pipeline Operating Partnership L.P.	
	19003 IH-10 West	
	San Antonio, Texas 78257	
	Renee Robinson	(210) 918-2975
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Lead Agency:	Kansas Department of Health and Environment	
	1000 SW Jackson Street, Suite 410	
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1.0 Introduction and Site Background

This groundwater monitoring report was prepared by Apex Companies, LLC (Apex) on behalf of NuStar Pipeline Operating Partnership L.P. (NuStar) as part of the continuing response to a gasoline release from a NuStar refined petroleum pipeline. The activities outlined herein were performed in accordance with the Consent Agreement and Final Order (CAFO) dated May 10, 2013 and in coordination with the Kansas Department of Health and Environment (KDHE) and the Quail Crossing Neighborhood Association.

The pipeline release was discovered in June 2012 after separate-phase hydrocarbons (SPH) were detected in an irrigation well at 2006 N Colt Court, in the Quail Crossing Neighborhood (the Neighborhood) of Andover, Kansas (the Site; Figure 1). The NuStar pipeline release location was approximately 80 feet north of the affected irrigation well. Upon notification of the discovery of SPH in the irrigation well, NuStar immediately mobilized to the Site and implemented several initial response and abatement activities,

including repairs to the pipeline, deactivation of the irrigation well at 2006 N Colt Court, and removal of SPH from the well. Following the initial response activities, NuStar: (1) performed a number of interim remedial measures (IRMs); and (2) planned and implemented a Comprehensive Investigation (CI). The initial response, IRMs, and CI activities are described in detail in the CI Report (Apex, 2014b).

Information obtained during the CI indicates that residual gasoline constituents are present in soil in a limited area in the vicinity of the pipeline release location. To evaluate the feasibility of SVE technology for remediating petroleum hydrocarbons in the subsurface, NuStar performed an SVE pilot test during the week of December 9, 2013. The pilot test was performed in accordance with the KDHE-approved SVE Pilot Test Work Plan (Apex, 2013). An evaluation of the SVE pilot test results indicated that SVE may be an effective remedial technology for the Site. Accordingly, NuStar: (1) presented the results of the pilot test and a conceptual SVE system design at a Neighborhood meeting on February 17, 2014; and (2) submitted the SVE Evaluation and Soil Investigation Report in March 2014 (Apex, 2014a). NuStar modified the conceptual design of the SVE system based on Neighborhood feedback; however, despite proposed modifications to the conceptual SVE design, Neighborhood representatives cited a number of reasons for not accepting an SVE system, including concerns about noise, emissions, and aesthetics.

To refine the understanding of the extent of gasoline in soil and to evaluate the potential for implementing other remedial alternatives that may be acceptable to the Neighborhood, in April 2014, NuStar implemented a soil investigation in the vicinity of the pipeline release. Analytical data from the April 2014 soil investigation are pending. Remedial alternatives for addressing residual gasoline in soil will be evaluated based upon the results of the soil investigation and may include excavation.

In August 2013, a quarterly groundwater monitoring program was initiated; the current groundwater monitoring program consists of: (1) monthly gauging of water levels in monitoring wells MW-1 through MW-16; (2) quarterly collection and analysis of groundwater samples from monitoring wells MW-1 through MW-16; and (3) quarterly collection and analysis of groundwater monitoring samples from selected irrigation wells. The proposed groundwater monitoring program for monitoring wells and irrigation wells is presented in Tables 1 and 2, respectively.

1.1 Site Description

The Site is located in the northern portion of the City of Andover, in southwest Butler County, Kansas (Figure 1). Land use at the Site and surrounding areas is residential. As shown on Figure 2, a stormwater retention pond is located near the Site, approximately 250 feet south of the NuStar pipeline. The pipeline is constructed of 8-inch-diameter carbon steel and is used to transport liquefied petroleum products. The pipeline was installed to an approximate depth of 3 feet below ground surface (bgs) in agricultural land in 1959. The pipeline remained in agricultural and/or undeveloped land until the late 1990s when development of the Quail Crossing Neighborhood began. As part of the Neighborhood development, the pipeline depth was increased to approximately 6 feet bgs by re-excavating and backfilling with native material. An

approximately 50-foot-wide pipeline right of way (ROW) was created along the pipeline pathway for safety purposes during Neighborhood development. The ROW limits development activities near the pipeline. The pipeline location and associated ROW are shown on Figure 2.

2.0 First Quarter 2014 Groundwater Monitoring and SPH Removal

This section describes the following first quarter 2014 comprehensive monitoring activities and results: (1) groundwater gauging and measurement of stormwater pond stage; (2) SPH gauging and removal of SPH from the affected irrigation well; and (3) comprehensive groundwater monitoring and sampling of 16 monitoring wells and selected irrigation wells. SPH removal and monitoring well gauging activities at 2006 N Colt Court were performed weekly during the first quarter 2014; the groundwater monitoring event was conducted during the week of January 27 and a follow-up sampling event occurred on February 20, 2014. The groundwater monitoring programs for monitoring wells and irrigation wells (i.e.., schedule and chemical analyses) are shown in Table 1 and Table 2, respectively.

2.1 Groundwater and Stormwater Pond Elevations

Depth to water was measured at each monitoring well location and at the irrigation well at 2006 N Colt Court to the nearest 0.01 foot using an electronic water interface probe. The stormwater pond stage was measured using a staff gauge permanently installed in the pond. Groundwater elevation and stormwater pond surface elevation data measured during the period January through March 2014 are listed in Table 3. The groundwater elevations that were measured during the first quarter 2014 monitoring event (January 27) are shown on Figure 3. Copies of field data sheets are included in Appendix A. Historical groundwater and stormwater retention pond elevations for the period July 2013 through March 2014 are tabulated in Appendix B.

During the first quarter 2014 monitoring event, groundwater levels at the Site ranged between 16.68 and 34.04 feet bgs (equivalent to 1316.43 to 1332.30 feet above mean sea level [msl]). For comparison, during the period July 2013 through January 2014, groundwater levels at the Site ranged from approximately 13 to 45 feet bgs (equivalent to approximately 1305 to 1336 feet msl). The surface elevation of the stormwater retention pond was not measured during the first quarter 2014 monitoring event because snow and ice prevented safe access to the pond. During the period July 2013 through January 2014, the elevation of the stormwater pond surface ranged from 1344.00 to 1344.75 feet msl.

As shown on Figure 3, the groundwater levels measured on January 27, 2014 exhibited a pattern similar to previous monitoring events at the Site. That is, groundwater levels were highest in the vicinity of the stormwater retention pond and decreased with distance from the pond. The observed pattern of elevated groundwater levels near the pond is likely the result of localized groundwater recharge from the stormwater

retention pond. The localized recharge results in radial flow of groundwater away from the pond. However, with some distance from the pond, groundwater exhibits a more easterly flow component and shallower gradient, consistent with regional patterns (O'Connor et al., 1982).

2.2 SPH Occurrence and Removal

SPH have been observed at the Site only in the irrigation well at 2006 N Colt Court. On a weekly interval between June 2013 and March 2014, a vacuum truck was used to extract SPH from the irrigation well. During each vacuum event:

- The irrigation well was gauged and the thickness of SPH, if present, was measured using an electronic water interface probe. Gauging occurred at the start and completion of each removal event.
- A vacuum truck, capable of generating vacuum equivalent to 100 inches of water, was used to extract groundwater and SPH, if present, from the well and to induce a vacuum in the surrounding formation. Vacuum was induced for approximately two hours, through flexible hosing that was secured to the well head. Extracted SPH, if present, and water were contained in a tank located on the truck. Extracted vapor was discharged through a temporary stack (comprised of a vertically installed 15-foot-length 4-inch-diameter PVC pipe).
- Purged water and SPH, if any, were treated and disposed of at the Custom Wastewater Facility in Wichita, Kansas.

Groundwater elevation data, SPH thicknesses, and the estimated volume of SPH removed from the irrigation well at 2006 N Colt Court for the first quarter 2014 are listed in Table 4. SPH, if present, were at thicknesses less than 0.05 foot; consequently, a minimal volume of SPH was removed. In total, between June 2013 and March 2014, approximately 236 gallons of SPH have been removed from the irrigation well. Historical data are included in Appendix B.

Since weekly SPH gauging activities were initiated in June 2013, the SPH thickness in the irrigation well at 2006 N Colt Court has decreased significantly. For example, in June 2013, the thickness of SPH in the irrigation well ranged between 0.43 and 0.81 foot. Since January 2014, SPH have been only intermittently present in the irrigation well and, when present, SPH thicknesses have been 0.04 foot or less.

2.3 First Quarter 2014 Groundwater Monitoring Event Scope

The first quarter 2014 groundwater monitoring event was performed during two mobilizations, the first between January 29 and 31, 2014 and the second on February 20, 2014. During the first mobilization, monitoring occurred at all target wells, with the exception of the irrigation wells at: 2001 N Colt Court; 2020 N Ruger Circle; 2007 N Colt Court; and 2006 N Colt Court. An access agreement for 2020 N Ruger Circle was executed in early February 2014; shortly thereafter, Apex re-mobilized to the Site and monitored

conditions in the irrigation well at that address. Despite multiple efforts, Apex was not able to contact the property owners at 2001 N Colt Court and 2007 N Colt Court; therefore, groundwater samples were not collected from those wells. Since SPH were present in the well at 2006 N Colt Court, a groundwater sample was not collected from that well.

During the first quarter 2014 groundwater monitoring event, the following monitoring activities occurred:

- Monitoring wells MW-1 through MW-16 were gauged and water samples were collected from those wells.
- Water samples were collected from the irrigation wells at 2002 N Colt Court; 2005 N Colt Court; HOA-1; HOA-2; 2019 N Ruger Circle; 2020 N Ruger Circle; 2028 N Ruger Circle; 2032 N Ruger Circle; 2021 N Ruger Court; 2025 N Ruger Court; 1009 W Mountain; 2007 N Mountain Court; 2009 N Mountain Court; 1211 W Quail Crossing Court; and 1910 N Quail Crossing.

The groundwater monitoring programs for monitoring wells and irrigation wells are summarized in Table 1 and 2, respectively. Groundwater samples were collected from monitoring wells using low-flow sampling techniques. Prior to sampling, each monitoring well was purged using a peristaltic pump while water quality parameters (pH, temperature, specific conductance, dissolved oxygen, and oxidation-reduction potential [ORP]) were recorded (Table 5). Groundwater samples were collected from irrigation wells using disposable bailers.

The groundwater analytical data for monitoring wells are presented in Section 2.4. Analytical data for irrigation wells are presented in Section 2.5.

2.4 Monitoring Well Analytical Program and Results

Monitoring well groundwater samples were submitted to ALS Environmental (ALS), a Kansas-accredited analytical laboratory, for the following analyses: gasoline-range organics (GRO) by Method IOWA OA-1; and volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method SW846 8260B. Tables 6 and 7 present dissolved-phase petroleum constituent data for samples collected between July/August 2013 and February 2014. Figures 4 through 7 present analytical data for the first quarter 2014 monitoring event. Figure 8 shows the approximate extent of benzene in groundwater in July/August 2013 compared to February 2014. Copies of the laboratory reports are included in Appendix C. The monitoring well groundwater data are discussed below:

- Overall, the dissolved-phase hydrocarbon concentrations in groundwater have decreased in extent since July/August 2013. During the first quarter 2014 monitoring event, benzene was detected at concentrations exceeding the corresponding KDHE Tier 2 Risk-Based Screening Value (RBSV) in four of the 16 monitoring wells (MW-1, MW-3, MW-5, and MW-10). In contrast, during the 2013

monitoring events, benzene was detected at concentrations exceeding the corresponding KDHE Tier 2 RBSV in six of the 16 monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-9, and MW-10).

- Overall, the dissolved-phase hydrocarbon concentrations in groundwater have decreased in magnitude since August 2013; constituent concentrations in several wells have shown significant decreases since 2013. For example, in August 2013, the benzene concentrations in samples collected from monitoring wells MW-1, MW-3, and MW-9 were 9.1, 1.2, and 0.99 milligrams per liter (mg/L), respectively. In January 2014, the benzene concentrations in those wells were 3.1, 0.76, and 0.0046 mg/L, respectively.
- During the first quarter 2014 monitoring event, GRO and naphthalene were detected for the first time in monitoring well, MW-13. GRO concentrations (0.072 mg/L) did not exceed the corresponding KDHE Tier 2 RBSV (0.500 mg/L) and naphthalene (0.00381 mg/L) only slightly exceeded the corresponding KDHE Tier 2 RBSV (0.001 mg/L). Constituent concentrations in monitoring well MW-13 will continue to be monitored.

2.5 Irrigation Well Analytical Program and Results

As shown in Table 7 and on Figures 4 through 7, water samples were collected from the irrigation wells at 15 properties (2002 N Colt Court; HOA-1; HOA-2; 2005 N Colt Court; 2019 N Ruger Circle; 2020 N Ruger Circle; 2028 N Ruger Circle; 2032 N Ruger Circle; 2021 N Ruger Court; 2025 N Ruger Court; 1009 W Mountain; 2007 N Mountain Court; 2009 N Mountain Court; 1211 W Quail Crossing Court; and 1910 N Quail Crossing). Apex staff were not able to collect a water sample from the irrigation well at 2007 Colt Court because the property owners have not provided access. NuStar will continue attempts to contact this property owner to obtain permission to collect a water sample during future sampling events.

Irrigation well analytical data for the first quarter 2014 monitoring event are listed in Table 7 and shown on Figures 4 through 7. Copies of the laboratory reports are included in Appendix C. The irrigation well groundwater data are further discussed below:

- During the first quarter 2014 groundwater monitoring event, dissolved-phase hydrocarbon constituents were not detected or were detected at concentrations less than KDHE Tier 2 RBSVs in 14 of the 15 irrigation wells sampled.
- Constituent concentrations in irrigation wells show an overall downward trend, consistent with monitoring well data. For example, in 2013, water samples collected from the irrigation wells at 2019 N Ruger Circle and 2028 N Ruger Circle exhibited detections of dissolved-phase hydrocarbons above KDHE Tier 2 RSBVs. During the first quarter 2014 sampling event, dissolved-phase hydrocarbons were not detected in those wells. Similarly, in 2013, the irrigation wells at 2002 N Colt Court and 2020 N Ruger Circle contained detectable concentrations of benzene; groundwater samples collected from those wells during the first quarter 2014 sampling event did not contain detectable benzene concentrations.

- Only the irrigation well at 2005 N Colt Court contained dissolved-phase hydrocarbon constituents at concentrations above the KDHE Tier 2 RBSVs; however, those concentrations decreased significantly since July 2013. For example, in January 2014, the benzene concentration in the irrigation well at 2005 N Colt Court was 0.15 mg/L. Samples collected from that well in July and October 2013 exhibited benzene concentrations of 0.47 and 0.31 mg/L, respectively. This well, as well as all irrigation wells sampled during the first quarter 2014 monitoring event, are inactive.

3.0 Status Report

Work Completed – First Quarter 2014:

- The first quarter 2014 comprehensive groundwater monitoring event was performed in January and February 2014.
- An SVE Evaluation and Soil Investigation Report was submitted to KDHE on March 28, 2014 (Apex, 2014a).
- In January, soil vapor samples were collected from vapor points VP-1 through VP-3 at 2006 N Colt Court.

Work Planned – Second Quarter 2014:

The following activities are planned for the second quarter 2014:

- Submittal of a revised CI report and response to KDHE comments;
- Performance of the soil investigation as proposed in the SVE Evaluation and Soil Investigation Report (Apex, 2014a);
- Presentation of soil remediation options, based upon the results of the soil investigation;
- Performance of the second quarter comprehensive groundwater monitoring event;
- Submittal of a groundwater monitoring report to present the second quarter groundwater data; and
- Submittal of a work plan for evaluation of groundwater remedial options.

4.0 References

Apex, 2013. *Soil Vapor Extraction Pilot Test Work Plan.* Quail Crossing Neighborhood, Andover, Kansas. November 15, 2013.

Apex, 2014a. *Soil Vapor Extraction Evaluation and Soil Investigation Report*. Quail Crossing Neighborhood, Andover, Kansas. March 28, 2014.

Apex, 2014b. *Comprehensive Investigation Report*. Quail Crossing Neighborhood, Andover, Kansas. April 11, 2014.

O'Connor, Howard G., Chaffee, Pamela, and Link, Martha, 1982. Geohydrology of Southwestern Butler County, Kansas: A Preliminary Report. Kansas Geological Survey Open File Report 82-2. May 1982.

Table 1
Groundwater Monitoring Program - Monitoring Wells
Andover Colt Court Release Site
Andover, Kansas

Well ID	Gauging	GRO	VOCs
MW-1	M	Q	Q
MW-2	M	Q	Q
MW-3	M	Q	Q
MW-4	M	Q	Q
MW-5	M	Q	Q
MW-6	M	Q	Q
MW-7	M	Q	Q
MW-8	M	Q	Q
MW-9	M	Q	Q
MW-10	M	Q	Q
MW-11	M	Q	Q
MW-12	M	Q	Q
MW-13	M	Q	Q
MW-14	M	Q	Q
MW-15	M	Q	Q
MW-16	M	Q	Q

Notes:

1. GRO = Gasoline-range organics quantified by IOWA OA-1.
2. VOCs = Volatile organic compounds; benzene, toluene, ethylbenzene, xylenes [BTEX], 1,2-dicholoethane, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, n-butylbenzene, and n-propylbenzene by U.S. Environmental Protection Agency Method 8260B.
3. Q = Performed quarterly.
4. M = Performed monthly.
5. Monitoring wells will not be sampled if SPH are present.

Table 2
Groundwater Monitoring Program - Irrigation Wells
Andover Colt Court Release Site
Andover, Kansas

Well Location	Well Status (Deactivated or Not Currently in Use)	GRO	VOCs
2001 N Colt Ct	Not Currently in Use	Q	Q
2002 N Colt Ct	Deactivated	Q	Q
2005 N Colt Ct	Deactivated	Q	Q
2006 N Colt Ct	Deactivated	Q	Q
HOA-1	Not Currently in Use	Q	Q
HOA-2	Not Currently in Use	Q	Q
2007 N Colt Ct	Deactivated	Q	Q
2019 N Ruger Cir	Not Currently in Use	Q	Q
2020 N Ruger Cir	Not Currently in Use	Q	Q
2028 N Ruger Cir	Deactivated	Q	Q
2032 N Ruger Cir	Deactivated	Q	Q
2021 N Ruger Ct	Not Currently in Use	Q	Q
2025 N Ruger Ct	Not Currently in Use	Q	Q
1009 W Mountain	Not Currently in Use	Q	Q
2007 N Mountain Ct	Targeted for Deactivation	Q	Q
2009 N Mountain Ct	Targeted for Deactivation	Q	Q
1211 W Quail Crossing Ct	Not Currently in Use	Q	Q
1910 N Quail Crossing	Not Currently in Use	Q	Q

Notes:

1. GRO = Gasoline-Range Organics quantified by IOWA OA-1.
2. VOCs = Volatile Organic Compounds (VOCs); benzene, toluene, ethylbenzene, xylenes [BTEX], 1,2-dichloroethane, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, n-butylbenzene, and n-propylbenzene by U.S. Environmental Protection Agency Method 8260B.
3. Q = Performed quarterly.
4. Well locations are shown on Figure 2.

Table 3
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-1	1/3/2014	4.0	1352.13	35	20-35	NM	--	--	NM
	1/10/2014					31.41	--	--	1320.72
	1/16/2014					31.01	--	--	1321.12
	1/21/2014					31.31	--	--	1320.82
	1/27/2014					30.78	--	--	1321.35
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					31.75	--	--	1320.38
	2/26/2014					31.70	--	--	1320.43
	3/4/2014					31.62	--	--	1320.51
	3/13/2014					31.44	--	--	1320.69
	3/18/2014					31.41	--	--	1320.72
	3/27/2014					31.55	--	--	1320.58
MW-2	1/3/2014	2.0	1353.17	44	29-44	NM	--	--	NM
	1/10/2014					NM	--	--	NM
	1/16/2014					31.21	--	--	1321.96
	1/21/2014					31.49	--	--	1321.68
	1/27/2014					31.90	--	--	1321.27
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					32.06	--	--	1321.11
	2/26/2014					31.96	--	--	1321.21
	3/4/2014					32.41	--	--	1320.76
	3/13/2014					32.09	--	--	1321.08
	3/18/2014					31.86	--	--	1321.31
	3/27/2014					32.09	--	--	1321.08
MW-3	1/3/2014	2.0	1350.47	60	40-60	NM	--	--	NM
	1/10/2014					33.47	--	--	1317.00
	1/16/2014					33.68	--	--	1316.79
	1/21/2014					33.84	--	--	1316.63
	1/27/2014					34.04	--	--	1316.43
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					34.00	--	--	1316.47
	2/26/2014					34.24	--	--	1316.23
	3/4/2014					34.36	--	--	1316.11
	3/13/2014					34.42	--	--	1316.05
	3/18/2014					34.35	--	--	1316.12
	3/27/2014					34.68	--	--	1315.79
MW-4	1/3/2014	2.0	1350.73	41	26-41	NM	--	--	NM
	1/10/2014					29.44	--	--	1321.29
	1/16/2014					29.38	--	--	1321.35
	1/21/2014					29.53	--	--	1321.20
	1/27/2014					30.36	--	--	1320.37
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					30.61	--	--	1320.12
	2/26/2014					31.56	--	--	1319.17
	3/4/2014					30.54	--	--	1320.19
	3/13/2014					30.56	--	--	1320.17
	3/18/2014					30.80	--	--	1319.93
	3/27/2014					30.72	--	--	1320.01

Please refer to notes at end of table.

Table 3
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-5	1/3/2014	2.0	1352.77	30	15-30	NM	--	--	NM
	1/10/2014					20.19	--	--	1332.58
	1/16/2014					20.90	--	--	1331.87
	1/21/2014					21.04	--	--	1331.73
	1/27/2014					20.84	--	--	1331.93
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					21.23	--	--	1331.54
	2/26/2014					21.02	--	--	1331.75
	3/4/2014					21.05	--	--	1331.72
	3/13/2014					20.98	--	--	1331.79
	3/18/2014					20.86	--	--	1331.91
	3/27/2014					20.97	--	--	1331.80
MW-6	1/3/2014	2.0	1349.76	41	26-41	NM	--	--	NM
	1/10/2014					21.51	--	--	1328.25
	1/16/2014					21.48	--	--	1328.28
	1/21/2014					21.84	--	--	1327.92
	1/27/2014					22.26	--	--	1327.50
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					22.00	--	--	1327.76
	2/26/2014					22.32	--	--	1327.44
	3/4/2014					22.06	--	--	1327.70
	3/13/2014					22.30	--	--	1327.46
	3/18/2014					22.14	--	--	1327.62
	3/27/2014					21.89	--	--	1327.87
MW-7	1/3/2014	2.0	1348.98	24	9-24	NM	--	--	NM
	1/10/2014					16.47	--	--	1332.51
	1/16/2014					16.45	--	--	1332.53
	1/21/2014					16.66	--	--	1332.32
	1/27/2014					16.68	--	--	1332.30
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					16.61	--	--	1332.37
	2/26/2014					16.64	--	--	1332.34
	3/4/2014					16.65	--	--	1332.33
	3/13/2014					16.73	--	--	1332.25
	3/18/2014					16.68	--	--	1332.30
	3/27/2014					16.56	--	--	1332.42
MW-8	1/3/2014	2.0	1353.38	30	15-30	NM	--	--	NM
	1/10/2014					21.24	--	--	1332.14
	1/16/2014					21.70	--	--	1331.68
	1/21/2014					21.80	--	--	1331.58
	1/27/2014					21.88	--	--	1331.50
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					22.15	--	--	1331.23
	2/26/2014					21.46	--	--	1331.92
	3/4/2014					21.84	--	--	1331.54
	3/13/2014					21.90	--	--	1331.48
	3/18/2014					21.70	--	--	1331.68
	3/27/2014					21.79	--	--	1331.59

Please refer to notes at end of table.

Table 3
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-9	1/3/2014	2.0	1349.48	34	19-34	NM	--	--	NM
	1/10/2014					28.65	--	--	1320.83
	1/16/2014					28.75	--	--	1320.73
	1/21/2014					28.91	--	--	1320.57
	1/27/2014					28.93	--	--	1320.55
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					29.09	--	--	1320.39
	2/26/2014					29.16	--	--	1320.32
	3/4/2014					NM	--	--	NM
	3/13/2014					29.31	--	--	1320.17
	3/18/2014					29.17	--	--	1320.31
	3/27/2014					28.59	--	--	1320.89
MW-10	1/3/2014	2.0	1348.79	34	19-34	NM	--	--	NM
	1/10/2014					27.35	--	--	1321.44
	1/16/2014					27.51	--	--	1321.28
	1/21/2014					27.77	--	--	1321.02
	1/27/2014					27.47	--	--	1321.32
	2/5/2014					NM	--	--	--
	2/12/2014					NM	--	--	--
	2/19/2014					27.53	--	--	1321.26
	2/26/2014					27.58	--	--	1321.21
	3/4/2014					27.66	--	--	1321.13
	3/13/2014					27.78	--	--	1321.01
	3/18/2014					27.65	--	--	1321.14
	3/27/2014					28.12	--	--	1320.67
MW-11	1/3/2014	2.0	1351.34	42	22-42	NM	--	--	NM
	1/10/2014					29.60	--	--	1321.74
	1/16/2014					28.89	--	--	1322.45
	1/21/2014					28.99	--	--	1322.35
	1/27/2014					28.91	--	--	1322.43
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					28.52	--	--	1322.82
	2/26/2014					28.71	--	--	1322.63
	3/4/2014					28.61	--	--	1322.73
	3/13/2014					28.77	--	--	1322.57
	3/18/2014					28.51	--	--	1322.83
	3/27/2014					28.68	--	--	1322.66
MW-12	1/3/2014	2.0	1349.74	43	23-43	NM	--	--	NM
	1/10/2014					28.25	--	--	1321.49
	1/16/2014					28.28	--	--	1321.46
	1/21/2014					28.61	--	--	1321.13
	1/27/2014					28.40	--	--	1321.34
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					28.46	--	--	1321.28
	2/26/2014					28.49	--	--	1321.25
	3/4/2014					NM	--	--	NM
	3/13/2014					28.77	--	--	1320.97
	3/18/2014					28.70	--	--	1321.04
	3/27/2014					29.25	--	--	1320.49

Please refer to notes at end of table.

Table 3
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-13	1/3/2014	2.0	1354.58	45	25-45	NM	--	--	NM
	1/10/2014					31.22	--	--	1323.36
	1/16/2014					32.70	--	--	1321.88
	1/21/2014					31.94	--	--	1322.64
	1/27/2014					31.98	--	--	1322.60
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					31.92	--	--	1322.66
	2/26/2014					32.10	--	--	1322.48
	3/4/2014					32.05	--	--	1322.53
	3/13/2014					32.25	--	--	1322.33
	3/18/2014					32.05	--	--	1322.53
	3/27/2014					32.16	--	--	1322.42
MW-14	1/3/2014	2.0	1354.99	45	25-45	NM	--	--	NM
	1/10/2014					31.47	--	--	1323.52
	1/16/2014					32.23	--	--	1322.76
	1/21/2014					32.35	--	--	1322.64
	1/27/2014					32.40	--	--	1322.59
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					32.58	--	--	1322.41
	2/26/2014					32.71	--	--	1322.28
	3/4/2014					32.75	--	--	1322.24
	3/13/2014					32.83	--	--	1322.16
	3/18/2014					32.70	--	--	1322.29
	3/27/2014					32.79	--	--	1322.20
MW-15	1/3/2014	2.0	1351.79	45	25-45	NM	--	--	NM
	1/10/2014					31.10	--	--	1320.69
	1/16/2014					31.30	--	--	1320.49
	1/21/2014					31.61	--	--	1320.18
	1/27/2014					31.61	--	--	1320.18
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					31.82	--	--	1319.97
	2/26/2014					32.03	--	--	1319.76
	3/4/2014					32.10	--	--	1319.69
	3/13/2014					37.20	--	--	1314.59
	3/18/2014					37.00	--	--	1314.79
	3/27/2014					32.29	--	--	1319.50
MW-16	1/3/2014	2.0	1352.13	45	25-45	NM	--	--	NM
	1/10/2014					29.91	--	--	1322.22
	1/16/2014					29.70	--	--	1322.43
	1/21/2014					29.89	--	--	1322.24
	1/27/2014					29.60	--	--	1322.53
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					29.41	--	--	1322.72
	2/26/2014					29.68	--	--	1322.45
	3/4/2014					NM	--	--	NM
	3/13/2014					28.71	--	--	1323.42
	3/18/2014					29.50	--	--	1322.63
	3/27/2014					29.62	--	--	1322.51

Please refer to notes at end of table.

Table 3
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
									Pond Stage (feet MSL)
Stormwater Pond	1/3/2014	NA	NA	NA	NA	NA	NA	NA	NM
	1/10/2014								1344.00
	1/16/2014								1344.00
	1/21/2014								1344.00
	1/28/2014								NM
	2/5/2014								NM
	2/12/2014								NM
	2/19/2014								NM
	2/26/2014								1344.00
	3/4/2014								NM
	3/13/2014								1344.00
	3/18/2014								1344.00
	3/27/2014								1343.75

Notes:

1. feet MSL = Feet above mean sea level (NAVD88).
2. -- = No SPH
3. NM = not measured.
4. Pond elevation is measured directly from a staff gauge on the pond (in 0.25-foot increments). The top of the staff gauge is 1347.59 feet above mean sea level.
5. NA = Not applicable.

Table 4
Separate- and Dissolved-Phase Recovery Data - 2006 N. Colt Court
Andover Colt Court Release Site
Andover, Kansas

Well	Date	Depth to Groundwater (feet bgs)	Depth to Product (feet)	Product Thickness (feet)	Fluid Removal Technology	Product Thickness At Completion of SPH Removal Event (feet)
		Before SPH Removal Event				After SPH Removal Event
Irrigation Well - 2006 N Colt Court	1/3/2014	NM	NM	NM	Mobile vacuum truck	NM
	1/10/2014	39.89	--	0.00	Mobile vacuum truck	0.00
	1/16/2014	39.83	--	0.00	Mobile vacuum truck	0.00
	1/21/2014	39.34	--	0.00	Mobile vacuum truck	0.00
	1/30/2014	38.85	--	0.00	Mobile vacuum truck	0.00
	2/12/2014	39.44	39.43	0.01	Mobile vacuum truck	0.00
	2/19/2014	39.37	39.36	0.01	Mobile vacuum truck	0.00
	2/26/2014	39.64	39.60	0.04	Mobile vacuum truck	0.00
	3/4/2014	39.76	39.73	0.03	Mobile vacuum truck	0.00
	3/13/2014	39.89	39.86	0.03	Mobile vacuum truck	0.00
	3/18/2014	39.65	39.61	0.04	Mobile vacuum truck	0.00
	3/27/2014	39.73	39.69	0.04	Mobile vacuum truck	0.00

Notes

1. SPH = Separate-phase hydrocarbons.
2. NM = Not measured.
3. -- = No SPH.
4. Depth to water and depth to product were not measured on 1/3/2014 due to equipment malfunction.
5. An SPH removal event was not performed on 2/5/14 due to severe weather.

Table 5
Groundwater Quality Parameters
Andover Colt Court Release Site
Andover, Kansas

Sample Location	Sample Date	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm)	pH	ORP (mV)
MW-1	1/30/2014	15.79	0.00	106	7.25	-52.0
MW-2	1/30/2014	15.50	0.00	843	6.22	99.0
MW-3	1/30/2014	11.91	0.00	853	4.05	18.4
MW-4	1/30/2014	14.01	2.78	113	5.46	158.0
MW-5	1/30/2014	15.57	0.00	1300	6.96	57.0
MW- 6	1/30/2014	15.54	0.63	986	7.11	146.0
MW-7	1/30/2014	16.13	0.00	667	7.21	-37.0
MW-8	1/30/2014	16.94	1.56	1120	7.00	109.0
MW-9	1/30/2014	12.13	0.00	760	4.50	8.0
MW-10	1/30/2014	14.31	0.00	1340	4.90	-44.0
MW-11	1/30/2014	16.22	6.91	1320	6.54	185.0
MW-12	1/30/2014	14.13	0.00	927	5.44	66.0
MW-13	1/30/2014	15.00	6.53	774	7.04	158.0
MW-14	1/30/2014	15.31	3.53	724	7.00	183.0
MW-15	1/30/2014	12.24	0.00	732	5.65	218.0
MW-16	1/30/2014	12.34	2.39	929	5.79	191.0

Notes:
1. °C = Degrees Celsius.
2. mg/L = Milligrams per liter.
3. ORP = Oxidation-reduction potential.
4. µS/cm = microsiemens per centimeter.
5. mV = millivolt.

Table 6
Groundwater Analytical Results – Monitoring Wells
Andover Colt Court Release Site
Andover, Kansas

Sample Location	Sample Date	GRO	1,2,4 Trimethylbenzene	1,2 Dichloroethane	1,3,5- Trimethylbenzene	2-Butanone	Benzene	Cyclohexane	Ethylbenzene	Isopropylbenzene	m,p-Xylene	Methylcyclohexane	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	Toluene	Total Xylenes
		Concentrations in mg/L (ppm)																
MW-1	8/9/2013	120	0.86	<0.05	0.22	<0.1	9.1	0.37	1.9	<0.05	6.3	0.1	0.23	<0.05	0.068	2.8	26	9.1
	10/24/2013	39	0.69	<0.010	0.19	0.050	7.8	0.26	2.0	0.031	4.9	0.043	0.14	0.011	0.084	2.2	18	7.1
	1/30/2014	44	1.0	<0.025	0.30	<0.05	3.1	0.45	1.4	0.045	3.5	0.076	0.29	0.030	0.14	1.6	9.3	5.2
MW-2	8/8/2013	2.3	<0.005	<0.005	<0.005	0.13	0.12	0.099	<0.005	<0.005	0.017	0.02	<0.005	<0.005	<0.005	<0.005	0.027	0.021
DUP	8/8/2013	2.2	<0.005	<0.005	<0.005	0.13	0.15	0.11	<0.005	<0.005	0.021	0.021	<0.005	<0.005	<0.005	<0.005	0.031	0.026
	10/23/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/29/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
MW-3	8/9/2013	6	0.054	<0.005	0.01	0.016	1.2	0.07	0.12	<0.005	0.086	0.014	0.011	<0.005	0.0074	0.12	0.4	0.21
	10/24/2013	1.7	0.075	<0.001	0.012	0.0057	1.1	0.082	0.12	0.0061	0.065	0.011	0.017	0.010	0.010	0.011	0.051	0.077
DUP	10/24/2013	2.0	0.073	<0.001	0.012	0.0059	1.1	0.077	0.11	0.0058	0.063	0.011	0.018	0.001	0.010	0.011	0.051	0.075
	1/28/2014	2.8	0.038	<0.001	<0.001	0.0069	0.76	0.072	0.07	0.0062	0.0098	0.0061	0.0081	<0.001	0.0079	<0.001	0.0081	0.011
MW-4	8/8/2013	0.48	0.0013	<0.001	0.0013	<0.002	0.035	0.012	0.0075	0.0013	0.027	0.0027	0.0027	<0.001	0.0022	0.011	0.056	0.038
	10/23/2013	1.0	0.0096	<0.001	0.016	0.0046	0.083	0.050	0.017	<0.0010	0.0071	0.0085	0.0036	<0.001	0.0013	0.034	0.034	0.041
	1/28/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
MW-5	8/8/2013	0.94	0.015	<0.001	0.15	<0.002	0.038	0.24	0.002	0.0018	0.11	0.0046	0.0084	<0.001	0.0023	0.0068	0.05	0.17
	10/24/2013	2.1	0.098	<0.001	0.028	<0.002	0.081	0.039	0.063	0.0051	0.20	0.0075	0.023	0.0026	0.011	0.12	0.10	0.32
	1/30/2014	0.61	0.038	0.0012	0.011	<0.002	0.05	0.018	0.034	0.0022	0.041	0.0017	0.0086	<0.001	0.0046	0.033	0.009	0.075
MW-6	8/9/2013	<0.05	<0.001	<0.001	<0.001	0.0029	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0026	<0.001	<0.001	<0.001	<0.001	<0.003
	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
DUP	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/30/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
MW-7	8/9/2013	<0.05	<0.001	<0.001	<0.001	<0.002	0.0012	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.0014	<0.003
	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/30/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
MW-8	8/8/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/30/2014	0.16	0.0026	<0.001	0.001	<0.002	0.0030	<0.001	0.0049	<0.001	0.013	<0.001	0.0041	<0.001	<0.001	0.0056	0.02	0.018
DUP	1/30/2014	0.15	0.0031	<0.001	0.001	<0.002	0.0038	<0.001	0.0056	0.0011	0.014	<0.001	0.0040	<0.001	<0.001	0.0064	0.025	0.021
MW-9	8/9/2013	36	0.82	<0.001	0.23	0.23	0.99	0.21	0.65	0.025	2.8	0.048	0.17	0.014	0.068	1.3	4.4	4.1
	10/23/2013	0.054	<0.001	<0.001	<0.001	<0.002	0.0026	0.0011	<0.001	<0.001	<0.002	0.0025	0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	11/25/2013	0.57	0.022	<0.010	0.013	0.004	0.058	0.017	0.0019	<0.001	0.019	0.0028	0.0084	<0.001	<0.001	0.018	0.005	0.037
	1/28/2014	0.058	<0.001	<0.001	<0.001	<0.002	0.0046	0.0015	<0.001	<0.001	<0.002	<0.001	0.0033	<0.001	<0.001	<0.001	<0.001	<0.003

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results – Monitoring Wells
Andover Colt Court Release Site
Andover, Kansas

Sample Location	Sample Date	GRO	1,2,4 Trimethylbenzene	1,2 Dichloroethane	1,3,5- Trimethylbenzene	2-Butanone	Benzene	Cyclohexane	Ethylbenzene	Isopropylbenzene	m,p-Xylene	Methylcyclohexane	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	Toluene	Total Xylenes
		Concentrations in mg/L (ppm)																
MW-10	8/9/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	10/23/2013	2.6	0.033	<0.001	0.029	0.014	0.051	0.069	0.0034	<0.001	0.27	0.021	0.0013	0.0014	<0.001	0.15	0.14	0.42
	11/25/2013	3.7	0.22	<0.001	0.072	0.019	0.016	0.081	0.027	0.0065	0.26	0.016	0.023	<0.001	0.025	0.12	0.048	0.38
	1/28/2014	1.1	0.12	<0.001	0.039	0.0023	0.026	0.0081	0.036	0.0049	0.073	0.0036	0.014	0.0064	0.015	0.05	0.048	0.12
MW-11	10/23/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	0.0024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/29/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	0.0024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
MW-12	10/23/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	0.0026	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/28/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
MW-13	10/23/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	0.0032	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/30/2014	0.072	0.0014	<0.001	<0.001	<0.002	0.0011	<0.001	0.0024	<0.001	0.0063	<0.001	0.0038	<0.001	<0.001	0.0026	0.0083	0.0089
MW-14	10/23/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/30/2014	<0.05	0.0011	<0.001	<0.001	<0.002	<0.001	<0.001	0.0016	<0.001	0.0043	<0.001	<0.001	<0.001	<0.001	0.0017	0.0059	0.0061
MW-15	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	0.0026	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/28/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	0.0026	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
MW-16	10/23/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	0.0027	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/28/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
DUP	1/28/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
KDHE Tier 2 Values		0.5	0.00844	0.005	0.044	4.92	0.005	--	0.7	--	--	--	0.00111	0.0338	0.66	--	1	10

Notes:
1. GRO = Gasoline-range organics quantified by IOWA OA-1.
2. Volatile organic compounds by U.S. Environmental Protection Agency (EPA) Method 8260B.
3. mg/L (ppm) = Milligrams per liter (parts per million).
4. **Bold** indicates detected concentration above the KDHE screening value.
5. < = Not detected above the method reporting limit (MRL).
6. -- = A KDHE Tier 2 Risk Based Screening Values has not been established.
7. KDHE Tier 2 Screening Values from the *Risk-Based Standards for Kansas, 5th Edition* , October 2010.

Table 7
Groundwater Analytical Results – Irrigation Wells
Andover Colt Court Release Site
Andover, Kansas

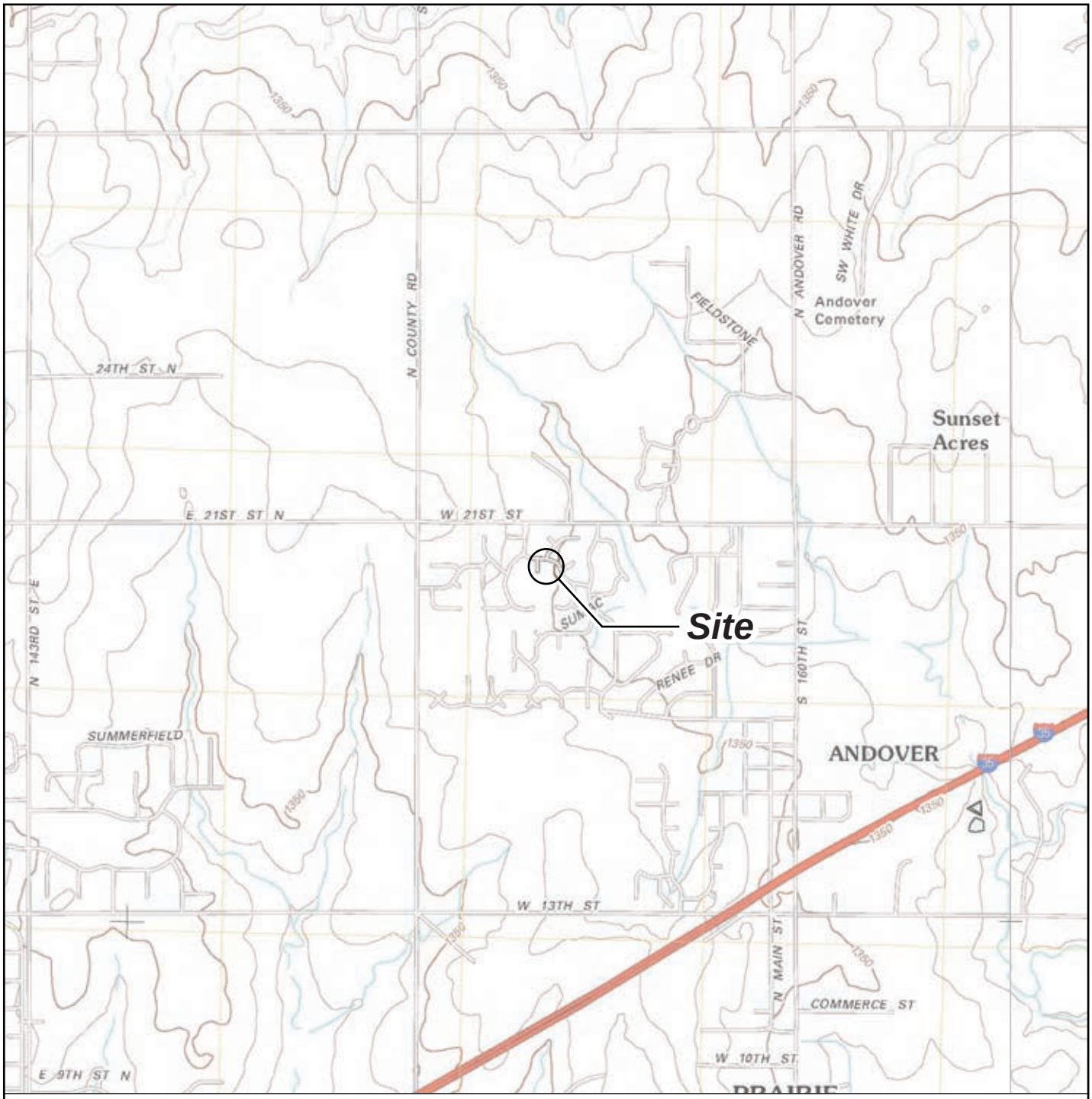
Well Location	Sample Date	GRO	1,2,4 Trimethylbenzene	1,2 Dichloroethane	1,3,5- Trimethylbenzene	2-Butanone	Benzene	Cyclohexane	Ethylbenzene	Isopropylbenzene	m,p-Xylene	Methylcyclohexane	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	Toluene	Total Xylenes
		Concentrations in mg/L (ppm)																
2005 N Colt Ct	7/26/2013	6.6	0.16	<0.005	0.045	0.019	0.47	0.09	0.13	<0.005	0.27	0.014	0.027	<0.005	0.013	0.17	0.34	0.44
	10/24/2013	4.2	0.14	<0.001	0.022	<0.002	0.31	0.073	0.19	0.0055	0.27	0.012	0.023	0.0039	0.017	0.15	0.35	0.42
	1/31/2014	3.7	0.13	0.0041	0.029	<0.002	0.15	0.07	0.17	0.0057	0.26	0.01	0.017	0.0034	0.018	0.14	0.33	0.40
2002 N Colt Ct	7/26/2013	<0.05	<0.001	<0.001	<0.001	<0.002	0.0047	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.0010	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
DUP	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.0010	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/31/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.0010	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
HOA-1	8/20/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	10/25/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/29/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
HOA-2	10/31/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/29/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
2007 N Colt Ct	7/26/2013	0.71	0.018	<0.001	0.0061	<0.002	0.14	0.018	0.01	0.0014	0.025	0.002	0.0052	<0.001	0.002	0.024	0.045	0.048
	10/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2019 N Ruger Cir	8/9/2013	0.42	<0.001	<0.001	<0.001	<0.002	0.085	0.026	0.0034	0.0013	0.0046	0.0035	0.0021	<0.001	0.0016	0.0034	0.017	0.0081
	10/25/2013	0.28	0.0.15	<0.001	<0.001	<0.002	0.13	0.0084	0.0062	<0.0010	<0.0020	0.0030	0.0010	<0.001	<0.001	<0.001	0.0011	<0.003
	1/29/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
2020 N Ruger Cir	7/26/2013	<0.05	<0.001	<0.001	<0.001	<0.002	0.0015	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	10/25/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	2/20/2014	0.075	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
2028 N Ruger Cir	8/20/2013	0.47	<0.001	<0.001	<0.001	<0.002	0.011	0.042	<0.001	<0.001	<0.002	0.0051	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	10/25/2013	<0.05	<0.001	<0.001	<0.001	0.015	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/30/2014	<0.05	<0.001	<0.001	<0.001	0.015	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
2032 N Ruger Cir	8/20/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	10/25/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/29/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
2021 N Ruger Ct	8/28/2013	<0.050	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0030
	10/25/2013	<0.050	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0030
	1/29/2014	<0.05	<0.001	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0030
2025 N Ruger Ct	8/28/2013	<0.050	0.0028	<0.0010	0.0012	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0030
	10/25/2013	<0.050	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0030
	1/31/2014	<0.050	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0030

Please refer to notes at end of table.

Table 7
Groundwater Analytical Results – Irrigation Wells
Andover Colt Court Release Site
Andover, Kansas

Well Location	Sample Date	GRO	1,2,4 Trimethylbenzene	1,2 Dichloroethane	1,3,5- Trimethylbenzene	2-Butanone	Benzene	Cyclohexane	Ethylbenzene	Isopropylbenzene	m,p-Xylene	Methylcyclohexane	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	Toluene	Total Xylenes
		Concentrations in mg/L (ppm)																
1009 W Mountain	8/20/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/31/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
2007 N Mountain Ct	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/31/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
2009 N Mountain Ct	8/20/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/29/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
1211 W Quail Crossing Ct	8/20/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	10/25/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/31/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
1910 N Quail Crossing	10/24/2013	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
	1/29/2014	<0.05	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003
KDHE Tier 2 Values		0.5	0.00844	0.005	0.044	4.92	0.005	NE	0.7	NE	NE	NE	0.00111	0.0338	0.66	NE	1	10

Notes:
1. GRO = Gasoline-range organics quantified by IOWA OA-1.
2. Volatile organic compounds by U.S. Environmental Protection Agency (EPA) Method 8260B.
3. mg/L (ppm) = Milligrams per liter (parts per million).
4. **Bold** indicates detected concentration above the KDHE screening value.
5. < = Not detected above the method reporting limit (MRL).
6. NE = A KDHE Tier 2 Risk Based Screening Values has not been established.
7. KDHE Tier 2 Screening Values from the *Risk-Based Standards for Kansas, 5th Edition* , October 2010.
8. Well locations are shown on Figure 2.
9. NS = No sample collected.



Note: Base map prepared from USGS 7.5-minute quadrangles of Andover and Santa Fe Lake, KS, dated 2009 as provided by USGS.gov.

0 2,000 4,000

Approximate Scale in Feet

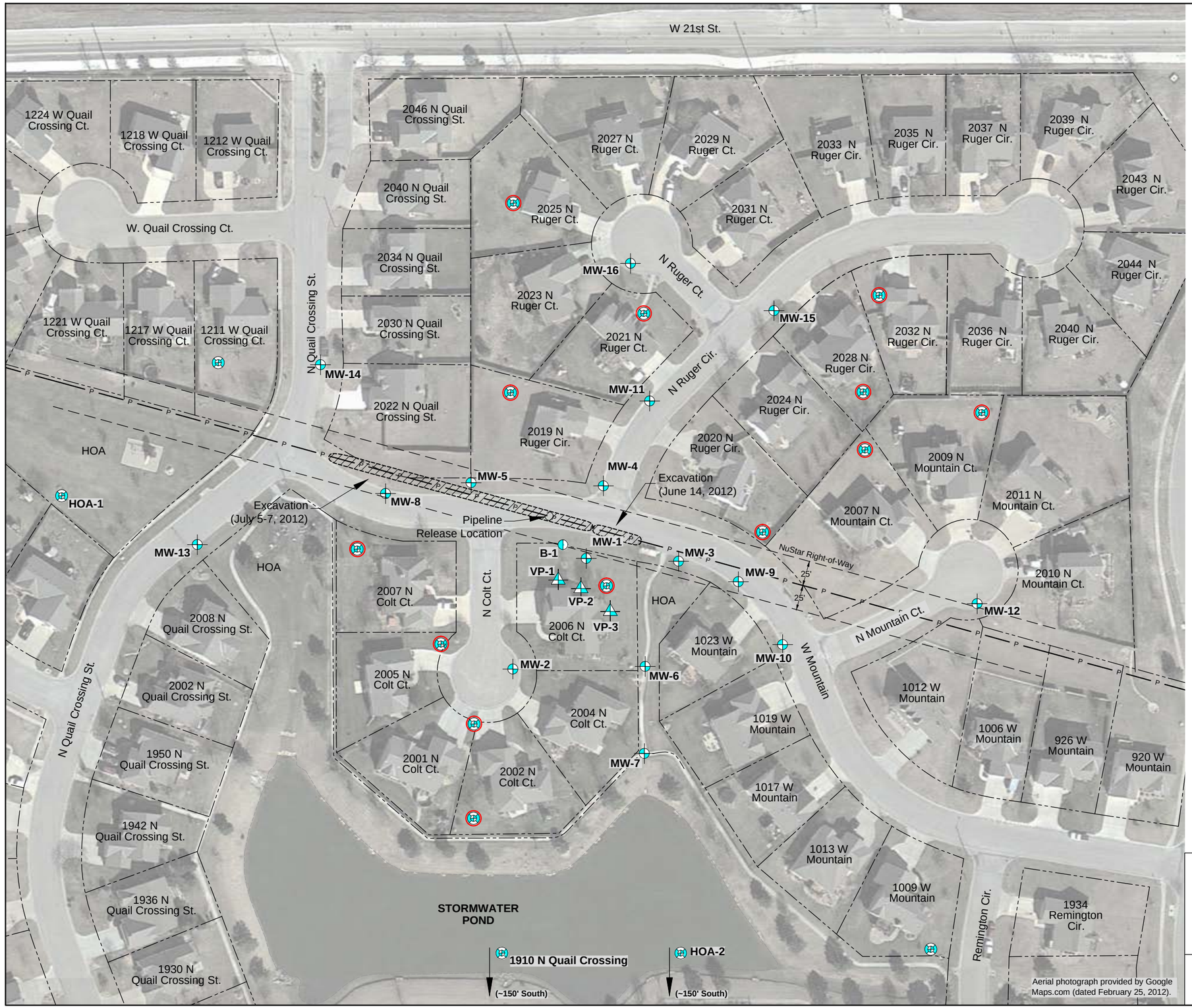
KANSAS

N

Site Location Map

First Quarter 2014 Groundwater Monitoring Report
NuStar Pipeline Operating Partnership L.P.
Andover, Kansas

APEX Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number	1641-04	Figure
	May 2014		1



N

Legend:

- **MW-1** Monitoring Well Location
- Irrigation Well
- **VP-1** Soil Vapor Monitoring Point
- **B-1** Boring Location
- Property Line
- Pipeline
- Pipeline Easement Boundary
- HOA — Lot Owned by Quail Crossing Homeowner's Association
- Deactivated Irrigation Well or Not Currently in Use/Targeted for Deactivation

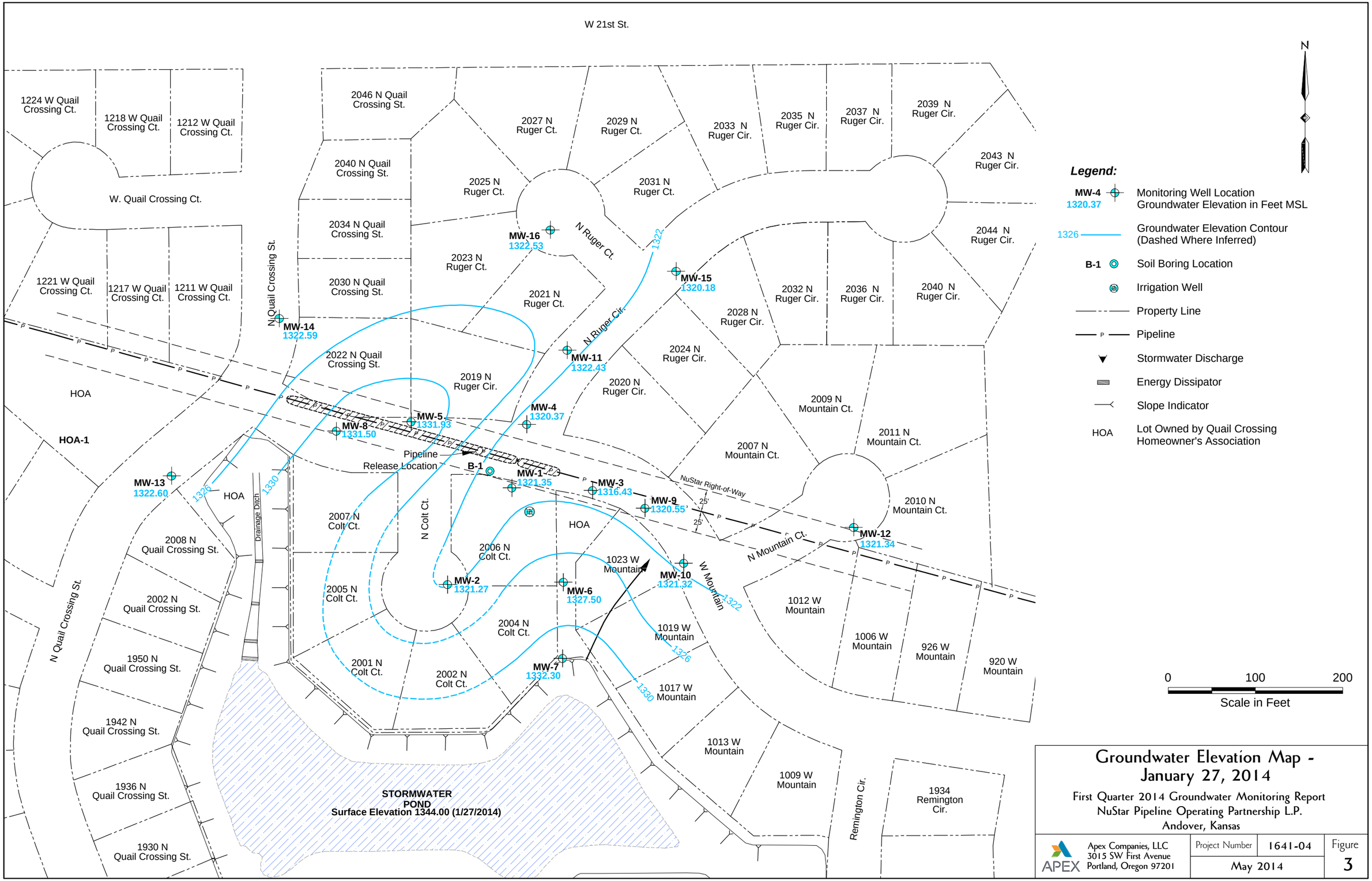
0 100 200

Scale in Feet

Site Plan and Sampling Location Map

First Quarter 2014 Groundwater Monitoring Report
NuStar Pipeline Operating Partnership L.P.
Andover, Kansas

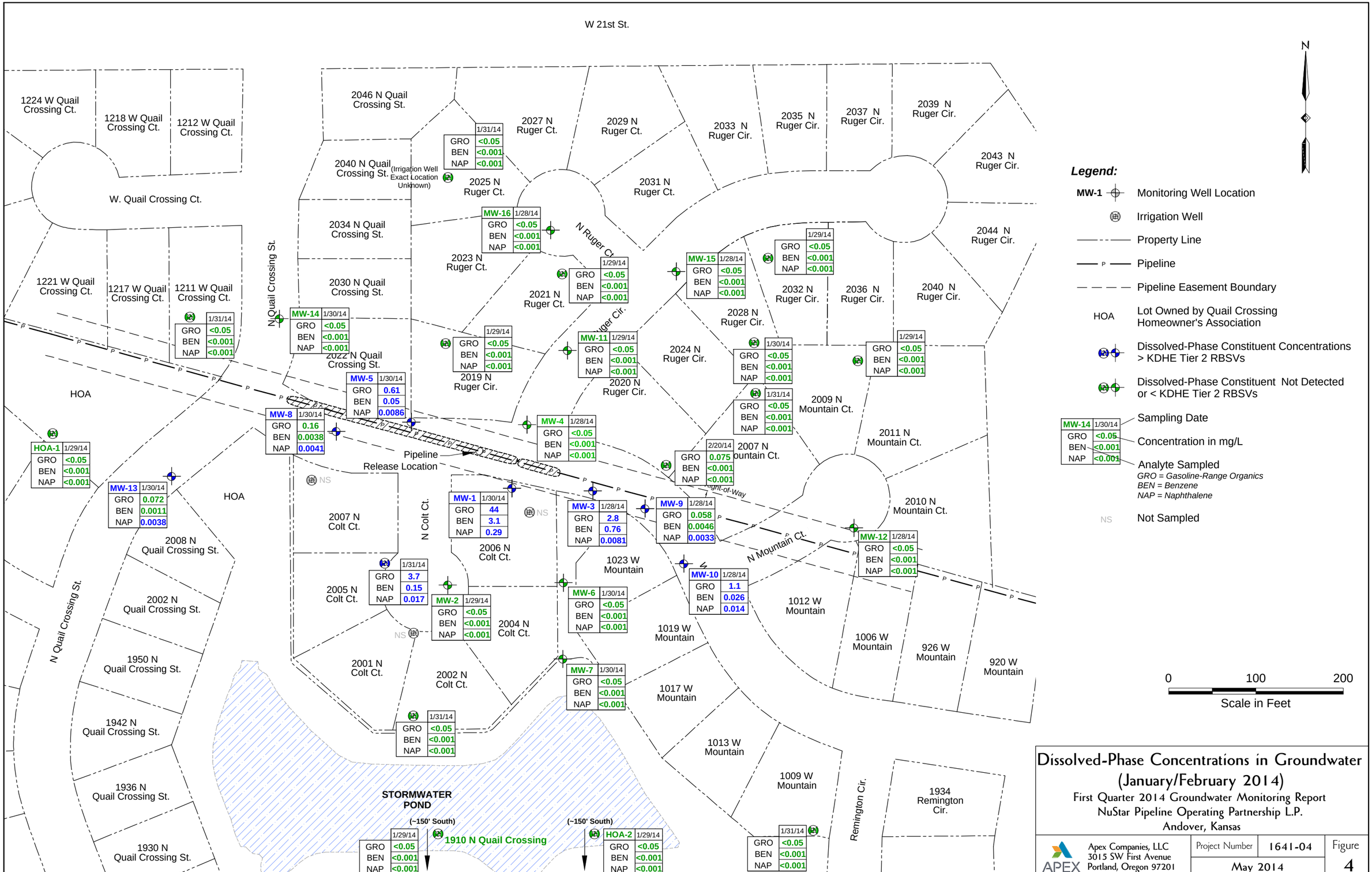
APEX	Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number 1641-04 May 2014	Figure 2



Groundwater Elevation Map - January 27, 2014

First Quarter 2014 Groundwater Monitoring Report
NuStar Pipeline Operating Partnership L.P.
Andover, Kansas

APEX Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number	1641-04	Figure
	May 2014		3

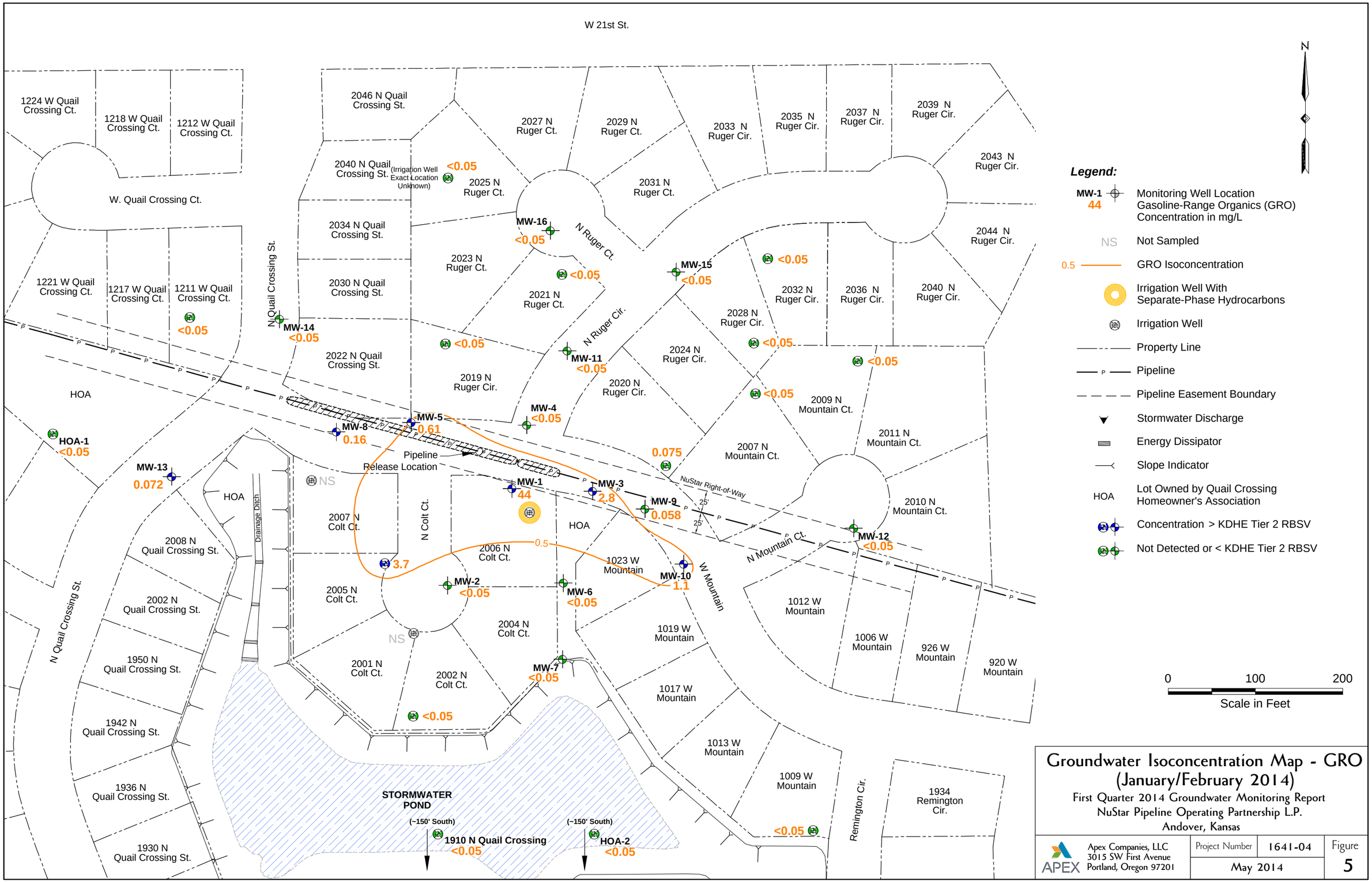


Dissolved-Phase Concentrations in Groundwater (January/February 2014)

First Quarter 2014 Groundwater Monitoring Report
NuStar Pipeline Operating Partnership L.P.
Andover, Kansas

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

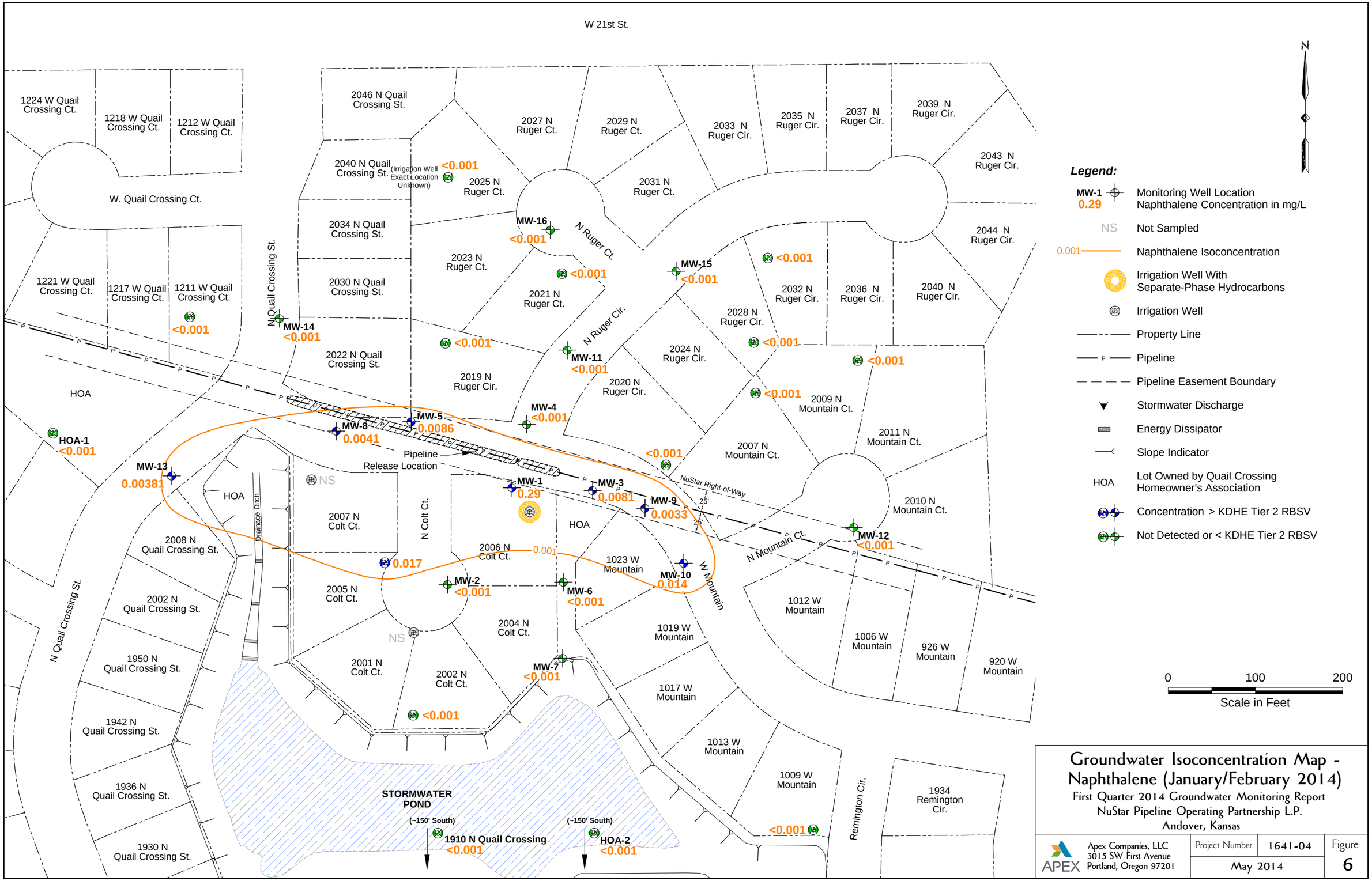
Project Number	1641-04	Figure
May 2014		4



Groundwater Isoconcentration Map - GRO (January/February 2014)

First Quarter 2014 Groundwater Monitoring Report
NuStar Pipeline Operating Partnership L.P.
Andover, Kansas

APEX	Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number 1641-04 May 2014	Figure 5

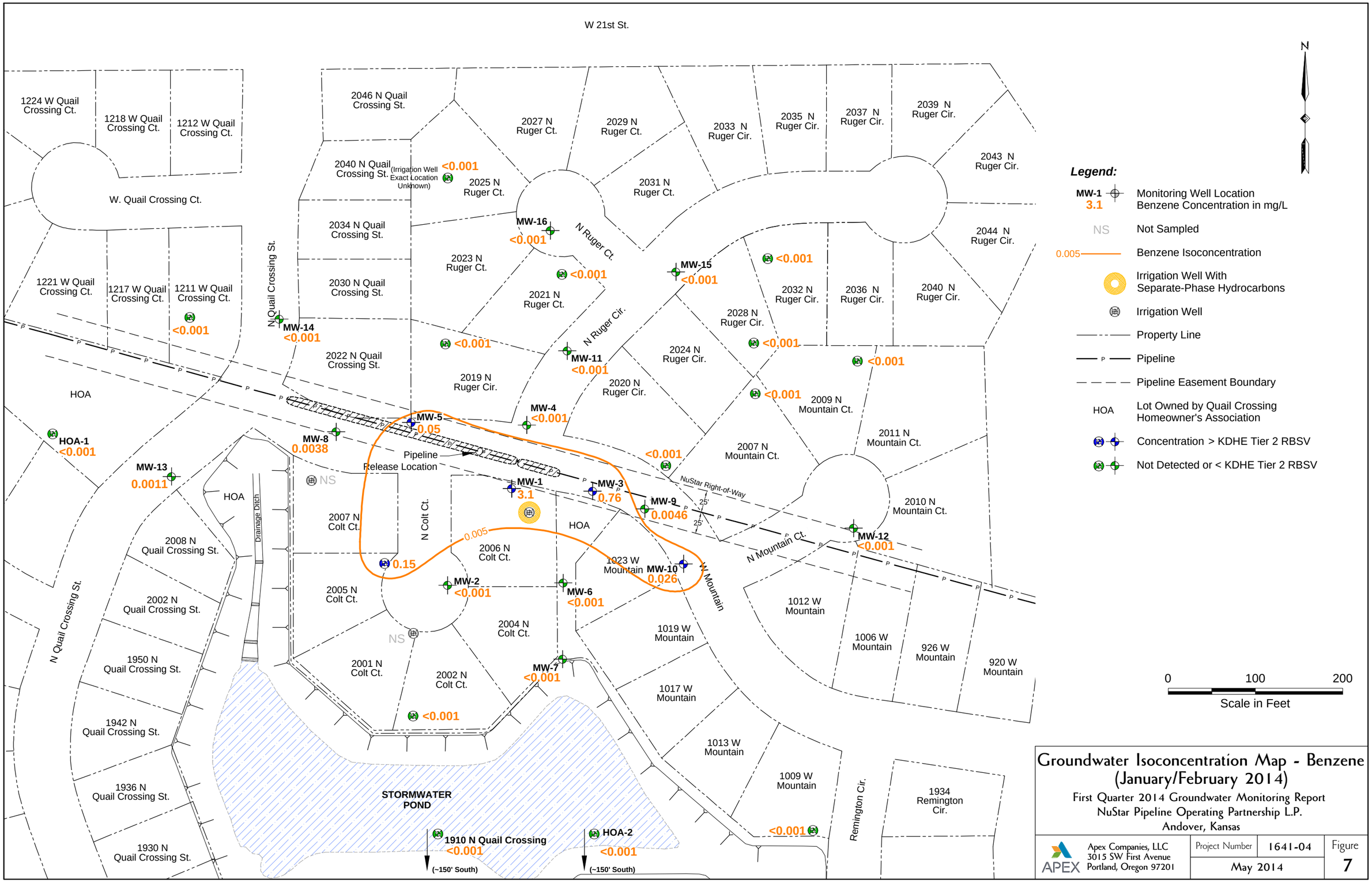


Groundwater Isoconcentration Map - Naphthalene (January/February 2014)

First Quarter 2014 Groundwater Monitoring Report
NuStar Pipeline Operating Partnership L.P.
Andover, Kansas

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

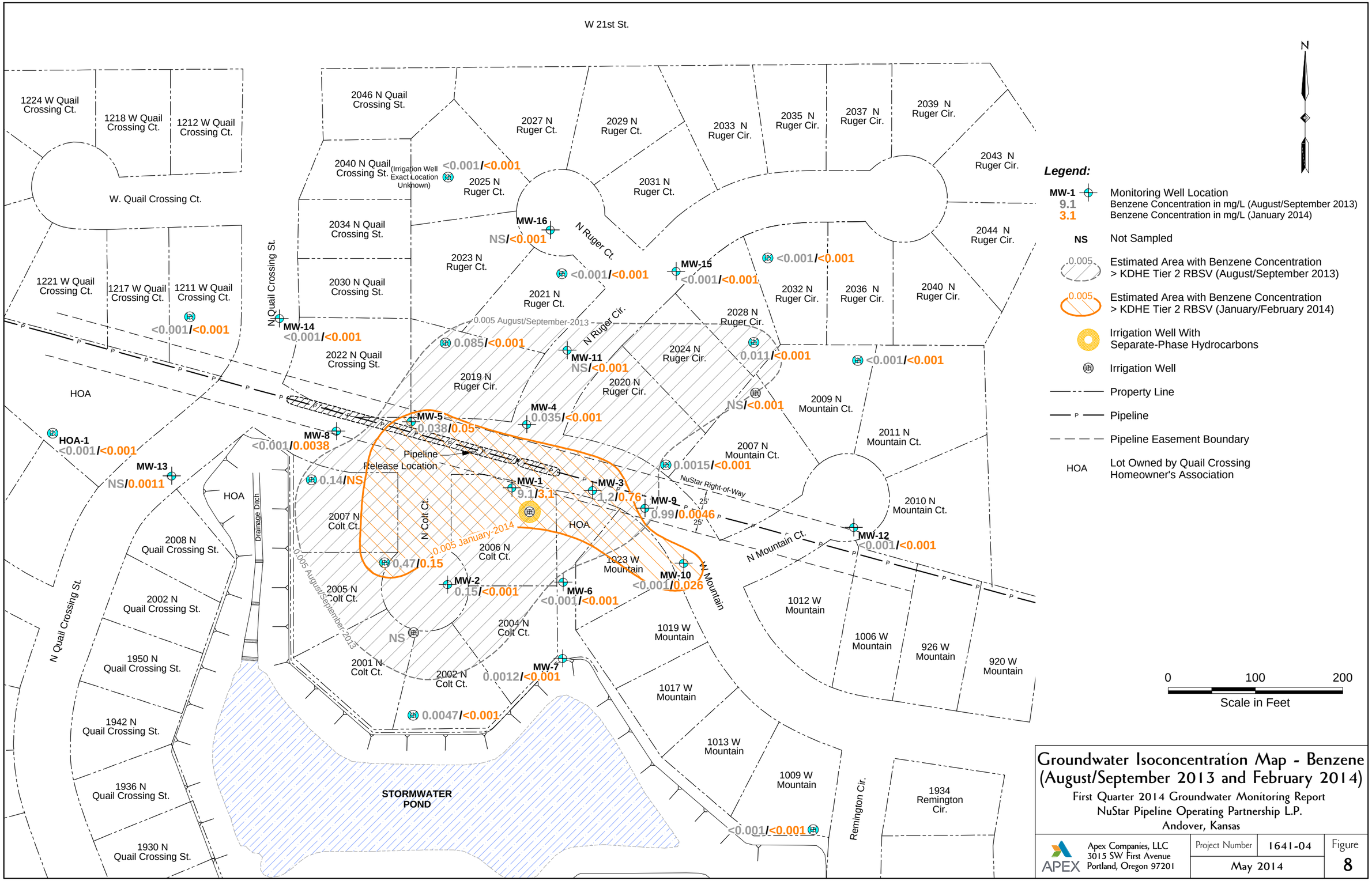
Project Number	1641-04	Figure
May 2014		6



Groundwater Isoconcentration Map - Benzene (January/February 2014)

First Quarter 2014 Groundwater Monitoring Report
NuStar Pipeline Operating Partnership L.P.
Andover, Kansas

APEX	Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number 1641-04 May 2014	Figure 7



Groundwater Isoconcentration Map - Benzene (August/September 2013 and February 2014)

First Quarter 2014 Groundwater Monitoring Report
NuStar Pipeline Operating Partnership L.P.
Andover, Kansas

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1641-04	Figure
May 2014		8

Appendix A

Field Data Sheets

WELL GAGING DATA SHEET

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

		Job Number:	320001641-04.004
Client:	NuStar	Date:	1/3/13
Project:	Andover Colt Court	Sampler:	JH
Weather:	Sunny 35°F	Time In/Out:	

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
2006							Begin Vac @ 11:20 (time)
1344 Pond							Pre Vac 1344.25 Frozen
MW-1							
MW-2							IP not functioning
MW-3							no way to gauge wells.
MW-4							Just pulled vapors on
MW-5							2006 Colt Ct.
MW-6							
MW-7							
MW-8							
MW-9							
MW-10							
MW-11							
MW-12							
MW-13							
MW-14							
MW-15							
MW-16							
Pond							
SVE-1							
SVE-2							
SVE-3							
SVE-4							
2006							Post Vac
1344 Pond							Post Vac 1344.25 Frozen
							Sam Jackson 503-278-9815

HAZ-MAT RESPONSE, INC.sm

"YOUR FIRST LINE OF DEFENSE"®

Straight bill of lading - Short form		Date: 1-3-14	
Shipper: Vertex		Consignee: Custom Wastewater Technologies	
Address: 1624 Summit Road		Address: 34 S. Hoover Road	
City: El Dorado		City: Wichita	
State: KS	County: Butler	State: KS	County: Sedgwick

Shipped From:

Address: 2006 N Colt Court		
City: Andover	State: KS	County: Butler

HRMI Job #: IR2130438	
Client Billing Code #:	Phone #:
Client Contact:	Fax #:

In Case of Emergency Call 1-800-229-5252

No. Items	HM	Description of Items Being Shipped	Weight
1		Petroleum Contact Water	50 gallon

Scale Ticket # :	**Transporting Unit # :** T226

Accepted By:

Name *(Print)*:	Signature:

Shippers Agent:

Jane Harris / Acer Companies	Jane Harris

Transporter:

Haz-Mat Response, Inc.	
Drivers Name *(Print)* CHRISTOPHER EBERS	Signature: Christopher Ebers

WICHITA **KANSAS CITY** **GREAT BEND** **NORTH PLATTE, NE**

HAZ-MAT RESPONSE, INC.sm
1203C South Parker Street
Olathe, Kansas 66061
913-782-5151 800-229-5252
E-mail: hazmat@haz-matresponse.com Web site: www.haz-matresponse.com

WELL GAGING DATA SHEET

APEX

		Job Number:	
Client:	NuStar	Date:	1/10/13
Project:	Antlower Colt Ct.	Sampler:	JH
Weather:	Cloudy 42°F	Time In/Out:	

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
2006		-	Pre 39.89	Post 39.81	—	—	Begin @ 11:30 End 18:30
Pond (1334)		-	1334.12				Frozen
MW-1	-	-	31.41				
~~MW-5~~ ~~MW-2~~	-	-	20.99				
MW-3	-	-	33.47				
MW-4	-	-	29.44				
~~MW-2~~ ~~MW-5~~	-	—	—	water in casing is frozen over plug			
MW-6	-	-	21.51				
MW-7	-	-	16.47				
MW-8	—	—	21.24				
MW-9	—	—	28.65				
MW-10	-	—	27.35				
MW-11	-	-	29.60				
MW-12	-	—	28.25				
MW-13	-	-	31.22				
MW-14	-	-	31.47				
MW-15	-	-	31.10				
MW-16	-	-	29.91				
SVE-1	-	-	29.82				
SVE-2	-	-	28.35				
SVE-3	-	-	29.40				
SVE-4	-	-	29.20				

Paul 617-7089

620-793-4828

Troy McFarlin

WELL GAGING DATA SHEET

APEX

		Job Number:	32000164 1-004-004
Client:	NuStar	Date:	1/16/14
Project:	Andover Colt Ct.	Sampler:	Jace Harris
Weather:	Sunny 45°F	Time In/Out:	11:00 / 13:30

WATER LEVEL DATA

Well I.D.	Time Start/ End	Depth to Free Product (feet) Start	Depth to Water (feet) End	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
2006 Colt	11:00 / 13:00		39.83				
Pond		–	1344.12				
MW-1			31.01				
MW-2		–	31.21				
MW-3			33.68				
MW-4			29.38				
MW-5		–	20.90				
MW-6		–	21.48				
MW-7		–	16.45				
MW-8		–	21.70				well lid damaged (snow plow)
MW-9		–	28.75				
MW-10		–	27.51				
MW-11			28.89				
MW-12		–	28.28				
MW-13		–	32.70				
MW-14		–	32.23				
MW-15		–	31.30				
MW-16		–	29.70				
SVE-1		–	29.65				
SVE-2		–	~~29.39~~ 28.32				
SVE-3		–	29.39				
SVE-4		–	29.24				
2006 Post Vac		–	~~[illegible]~~ 39.77				

WELL GAGING DATA SHEET

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

		Job Number:	320001641-04.004
Client:	NuStar	Date:	1/21/13
Project:	Andover Colt Court	Sampler:	Jan Harris
Weather:	Sunny 14°F	Time In/Out:	9:05 / 11:30

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
2006			39.34				Begin Vac @ 9:30 (time)
1344 Pond			1344.05				Pre Vac 1344.05
MW-1			31.31				
MW-2			31.49				
MW-3			33.84				
MW-4			29.53				
MW-5			21.04				
MW-6			21.84				
MW-7			16.66				
MW-8			21.85				
MW-9			28.91				
MW-10			27.77				
MW-11			28.99				
MW-12			28.61				
MW-13			31.94				
MW-14			32.35				
MW-15			31.61				
MW-16			29.89				
Pond							
SVE-1			29.89				
SVE-2			28.33				
SVE-3			29.41				
SVE-4			29.29				
2006							Post Vac 39.35
1344 Pond							Post Vac 1344.05
							Sam Jackson 503-278-9815

WELL GAGING DATA SHEET

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

		Job Number:	320001641-01.002
Client:	NuStar	Date:	1/30/13
Project:	Andover GW Monitoring	Sampler:	JH + PW
Weather:	Sunny 45°F	Time In/Out:	

WATER LEVEL DATA

Well I.D.	~~Select~~ Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
2006 Colt Ct.	Start 9:10	—	38.85				
	Stop						
2004 Colt Ct.	11:10	—	39.11				
	start						
MW-1	11:15	—	30.78				
	Stop						
MW-1	13:15	—	32.45				

WELL GAGING DATA SHEET

APEX

		Job Number:	320001641-04-003
Client:	WILSTAR	Date:	1-27-14
Project:	COLT COURT	Sampler:	RW/JH
Weather:	OVERCAST 16°F	Time In/Out:	

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
MW-12	15:40	—	28.40	—	—	—	
MW-10	15:45	—	27.47	—	—	—	
MW-9	15:51	—	28.93	—	—	—	
MW-3	16:00	—	34.04	—	—	—	
MW-6	16:05	—	22.26	—	—	—	
MW-7	16:09	—	16.60	—	—	—	
MW-1	16:14	—	30.78	—	—	—	
MW-13	16:18	—	31.98	—	—	—	
MW-14	16:22	—	32.40	—	—	—	
MW-8	16:25	—	21.89	—	—	—	
MW-5	16:29	—	20.84	—	—	—	
MW-2	16:34	—	31.90	—	—	—	
MW-4	16:40	—	30.36	—	—	—	
MW-16	16:44	—	29.60	—	—	—	
MW-15	16:48	—	31.61	—	—	—	
MW-11	16:51	—	28.91	—	—	—	

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-14	Job Number:	320001641-04-003
Client:	NuStar	Date:	1/30/14
Project:	Andover C.C.	Sampler:	JH + PW
Weather:	Cloudy 40°F	Time In/Out:	16:32

WELL DATA

Well Depth:	—	Well Diameter:	2"	Water Height	—
Depth to Water:	32.46	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	37'	Comments
Sampling Method:	Same	Tubing Type:	Poly	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
16:36		.75	32.57	.25	7.12	14.62	.733	4.71	180	157	AC
16:39			32.69		7.03	15.16	.726	3.82	180	1000+	SC
16:42			32.78		7.01	15.27	.724	3.59	182	1000+	SC
16:45			32.91		7.00	15.31	.724	3.53	183	1000+	SC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-14	Sampling Flow Rate	.25	Analytical Laboratory:	ALS
Sample Time:	16:45	Final Depth to Water:	32.91	Did Well Dewater?	NO

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 voas	HCl	8.0C	yes (no)	—	—	—
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-13	Job Number:	32000164 1-04.003
Client:	Nu Star	Date:	1/30/14
Project:	Andover C.C.	Sampler:	JH+PW
Weather:	Cloudy 40°F	Time In/Out:	16:05

WELL DATA

Well Depth:	—	Well Diameter:	2"	Water Height	—
Depth to Water:	31.98	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—

Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters

PURGING DATA

Purge Method:	Bladder pump	Pump Intake Depth:	36'	Comments	
Sampling Method:	SAME	Tubing Type:	Poly		

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
16:09		.75	32.18	.25	7.04	15.36	.777	6.66	156	0.0	SC
16:12		1.5	32.24		7.04	15.41	.775	6.67	158	0.0	SC
16:15		2.25	32.51		7.04	15	.774	6.53	158	0.0	SC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-13	Sampling Flow Rate	.25	Analytical Laboratory:	ACS
Sample Time:	16:20	Final Depth to Water:	32.59	Did Well Dewater?	NO

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 VOAs	HCl	EOC	yes (no)	—	—	—
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Turbidity meter must be malfunctioning

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-8	Job Number:	32000 1641-04-003
Client:	NuStar	Date:	1/30/14
Project:	Andover C.C.	Sampler:	JH + PW
Weather:	Sun 45 F	Time In/Out:	3: 15:40

WELL DATA

Well Depth:	—	Well Diameter:	2"	Water Height	—
Depth to Water:	21.83	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	24'	Comments	
Sampling Method:	Same	Tubing Type:	Poly		

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
15:43		.75	22.12	.25	7.15	16.56	1.09	2.53	74	0.0	SC
15:47		1.5	22.39		7.02	16.61	1.11	1.70	98	0.0	SC
15:50		2.25	22.50		7.00	16.91	1.11	1.69	101	0.0	SC
15:53		3.75	22.61		7.00	16.94	1.12	1.56	109	0.0	SC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-8	Sampling Flow Rate	.25	Analytical Laboratory:	ACS
Sample Time:	15:55	Final Depth to Water:	22.60	Did Well Dewater?	NO

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 voas	HCl	COC	yes (no)	—	—	Dup-2
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Took Dup-2 from MW-8 Turbidity meter appears to be malfunctioning.

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-1	Job Number:	32000164 1-04-003
Client:	Nu Star	Date:	1/30/14
Project:	Ardmore C.C.	Sampler:	JH+PW
Weather:	Sunny 45°F	Time In/Out:	15:10

WELL DATA

Well Depth:	—	Well Diameter:	4"	Water Height	—
Depth to Water:	30.78	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	33'	Comments
Sampling Method:	Same	Tubing Type:	Poly	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
15:14			30.99	.25	7.38	15.81	1.06	0.0	-52	0.0	AC
15:17			31.13		7.30	15.81	1.06	0.0	-66	0.0	AC
15:20			31.39		7.25	15.79	1.06	0.0	-67	0.0	

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-1	Sampling Flow Rate	.25	Analytical Laboratory:	ALS
Sample Time:	Sample @ 15:20	Final Depth to Water:	31.39	Did Well Dewater?	no

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 voas	HCl	CoC	yes (no)	—	—	—
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-7	Job Number:	320001641-04.003
Client:	NuStar	Date:	1/30/14
Project:	Andover C.C.	Sampler:	JH + PW
Weather:	Sunny 45°F	Time In/Out:	13:40

WELL DATA

Well Depth:	—	Well Diameter:	2"	Water Height	—
Depth to Water:	16.68	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—

Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	20'	Comments
Sampling Method:	Same	Tubing Type:	Poly	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
				~~.25~~							
~~14:45~~ ~~2:45~~		.75	14.91	.25	7.39	15.80	0.668	0.0	-49	1000*	SC
~~14:48~~ ~~2:48~~		1.5	16.23		7.29	16.03	.6668	0.0	-51	601	SC
14:51		2.25	17.59		7.21	16.13	.6667	0.0	-37	275	SC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-7	Sampling Flow Rate	.25	Analytical Laboratory:	ACS
Sample Time:	14:55	Final Depth to Water:	17.59	Did Well Dewater?	no

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 voas	HCl	CoC	yes (no)	—	—	—
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

* - ~~TUR~~ NTU's flushing 1000 NTU

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-3	Job Number:	
Client:	NuSolar	Date:	1/28/13
Project:	Andover	Sampler:	AH + DW
Weather:	Partly Sun 19°F	Time In/Out:	11:00

WELL DATA

Well Depth:	—	Well Diameter:	2"	Water Height	—
Depth to Water:	34.04	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	45'	Comments
Sampling Method:	Same	Tubing Type:	Poly	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
11:55		75	34.20	.25	4.04	10.98	.852	0.0	112	16.4 ~~46~~	C*
11:58		1.5	34.31		3.99	11.63	.859	0.0	87	18.0	C
12:01		2.25	34.109		4.05	11.91	.853	0.0	74	18.4	C

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-3	Sampling Flow Rate	.25	Analytical Laboratory:	ALS
Sample Time:	~~12:00~~ 12:05	Final Depth to Water:	34.71	Did Well Dewater?	no

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 voas	HCl	See CoC	yes no	—	—	—
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Air pump froze, had to thaw out. Then Horiba was leaking, had to fix

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-6	Job Number:	320001641-04-003
Client:	NuStar	Date:	1/30/14
Project:	Andover C.C.	Sampler:	JH + PW
Weather:	Sunny 45°F	Time In/Out:	14:05

WELL DATA

Well Depth:	—	Well Diameter:	2"	Water Height	—
Depth to Water:	22.26	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	—

PURGING DATA

Purge Method:	Pneumatic Pump	Pump Intake Depth:	29'	Comments	
Sampling Method:	Same	Tubing Type:	Poly		

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
14:16		.75	21.97	.25	7.40	15.07	1.00	5.50	122	178	AC
14:19 ~~14:16~~		1.5	22.45		7.19	15.38	1.00	0.50	136	136	AC
14:22		2.25	22.78		7.13	15.48	1.00	0.65	143	62.3	C
14:25		3.75	23.06		7.11	15.54	.986	0.63	146	35.8	C

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-6	Sampling Flow Rate	.25	Analytical Laboratory:	ACS	
Sample Time:	~~14:25~~ 14:30	Final Depth to Water:	23.55	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 VOAs	HCl	See CoC	yes (no)	—	—	—
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Split sample w/ Pamela KDHE

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-5	Job Number:	320001641-04-00
Client:	NuStar	Date:	1/30/14
Project:	Andover C.C.	Sampler:	JH + PW
Weather:	Sunny 45°F	Time In/Out:	13:30 / 13:55

WELL DATA

Well Depth:	–	Well Diameter:	2"	Water Height	–
Depth to Water:	20.84	Screened Interval:	–	x Multiplier	–
Water Column Length:	–	Depth to Free Product:	–	x Casing Volumes	–
Purge Volume:	–	Free Product Thickness:	–	= Purge Volume	–
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic Pneumatic	Pump Intake Depth:	25'	Comments
Sampling Method:	Same	Tubing Type:	Poly	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (mS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
13:43		.75	21.25	.25	7.04	15.29	1.29	0.0	44	43.3	C
13:47		1.5	21.31		6.98	15.49	1.29	0.0	49	43.5	C
13:49		2.25	21.35		6.96	15.57	1.30	0.0	51	37.4	C

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-5	Sampling Flow Rate	.25	Analytical Laboratory:	ACS
Sample Time:	13:50	Final Depth to Water:	21.18	Did Well Dewater?	NO

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 vocs	HCl	See CoC	yes no	–	–	–
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Split sample w/ KDHE Pamela.

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-2	Job Number:	320001641-001-003
Client:	NuStar	Date:	1/28/14
Project:	Anderson C.C.	Sampler:	JH+PW
Weather:	Sun / 15°F	Time In/Out:	~~15:30~~ 15:25

WELL DATA

Well Depth:	—	Well Diameter:	2"	Water Height	—
Depth to Water:	31.90	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—

Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	37'	Comments
Sampling Method:	Same	Tubing Type:	Poly	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
15:34		.75	32.23	.25	6.37	15.02	.846	0.0	103	661	AC
15:37		1.5	32.51		6.30	15.29	0.840	0.0	102	558	AC
15:40		2.25	32.79		6.22	15.50	0.843	0.0	99	407	AC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-2	Sampling Flow Rate	.25	Analytical Laboratory:	ACS
Sample Time:	15:40	Final Depth to Water:	32.89	Did Well Dewater?	NO

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 voas	HCl	See CoC	yes (no)	—	—	—
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-11	Job Number:	320001641-04.003
Client:	NuStar	Date:	1/29/13
Project:	Andover C.C.	Sampler:	JH & DW
Weather:	Sun/windy 45°F	Time In/Out:	15:00

WELL DATA

Well Depth:	—	Well Diameter:	2"	Water Height	—
Depth to Water:	28.91	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	35'
Sampling Method:	Same	Tubing Type:	Poly

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
15:03		.75	29.14	.25	6.85	16.10	1.31	18.01	156	0.0	Cl
15:06		1.5	29.39		6.72	16.21	1.31	8.90	169	0.0	Cl
15:09		2.25	29.53		6.57	16.23	1.31	7.21	177	0.0	Cl
15:12		3.75	29.74		6.53	16.22	1.32	6.94	183	0.0	Cl
15:15			29.81		6.54	16.22	1.32	6.91	185	0.0	Cl

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	~~MW~~ MW-11	Sampling Flow Rate	~~29.81~~ .25	Analytical Laboratory:	ALS
Sample Time:	15:15	Final Depth to Water:	~~29.81~~ 29.81	Did Well Dewater?	NO

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 vocs	HCl	See CoC	yes (no)	—	—	—
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-15	Job Number:	320001641-04.003
Client:	NuStar	Date:	1/28/13
Project:	Meadowview CC	Sampler:	JH + PW
Weather:	Sunny 29°F	Time In/Out:	16:00

WELL DATA

Well Depth:	–	Well Diameter:	2"	Water Height	–
Depth to Water:	31.61	Screened Interval:	–	x Multiplier	–
Water Column Length:	–	Depth to Free Product:	–	x Casing Volumes	–
Purge Volume:	–	Free Product Thickness:	–	= Purge Volume	–
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	37'	Comments	
Sampling Method:	Same	Tubing Type:	Poly		

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
16:23 ~~16:04~~		.75	31.90	.25	5.70	10.67	.740	4.62	213	0.0	SC
16:26 ~~16:07~~		1.5	32.17		5.68	11.90	.731	0.93	215	0.0	SC
16:29 ~~16:10~~		2.25	32.24		5.66	12.13	.733	0.25	217	0.0	SC
16:32		3.	32.39		5.65	12.24	.732	0.0	218	0.0	SC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-15	Sampling Flow Rate	~~32.39~~ .25	Analytical Laboratory:	ALS	
Sample Time:	16:35	Final Depth to Water:	32.39	Did Well Dewater?	no	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 voas	HCl	See CoC	yes no	–	–	–
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Equipment troubles @ 16:02 Fixed @ 16:18 start again @ 1620
NTU must no be reading correctly slightly cloudy but Turbidity is reading 0.0

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-16	Job Number:	320001641-04.003
Client:	Nu Star	Date:	1/28/14
Project:	Andover C.C.	Sampler:	JH + PW
Weather:	Sunny 29°F	Time In/Out:	15:35

WELL DATA

Well Depth:	–	Well Diameter:	2"	Water Height	–
Depth to Water:	29.60	Screened Interval:	–	x Multiplier	–
Water Column Length:	–	Depth to Free Product:	–	x Casing Volumes	–
Purge Volume:	–	Free Product Thickness:	–	= Purge Volume	–
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	36'
Sampling Method:	Same	Tubing Type:	Poly

Comments

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
15:38		.75	29.83	.25	5.54	10.71	.904	14.00	146	0.0	AC
15:41			30.21		5.80	11.69	.936	2.21	178	0.0	AC
15:44			30.34		5.76	12.23	.930	2.42	189	0.0	AC
15:47			30.59		5.79	12.34	.929	2.39	191	0.0	AC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slighly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-16	Sampling Flow Rate	.25	Analytical Laboratory:	ACS
Sample Time:	15:50	Final Depth to Water:	30.61	Did Well Dewater?	NO

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 voas	HCl	See COC	yes (no)	–	–	–
6 voas	HCl	"	yes (no)	–	–	Dup-1
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Took Dup-1 here.

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-4	Job Number:	32000164/-04.003
Client:	Nu Star	Date:	1/28/14
Project:	Avalon Coll Ct	Sampler:	JH & PW
Weather:	Cloudy 29°F	Time In/Out:	14:55

WELL DATA

Well Depth:	–	Well Diameter:	2"	Water Height	–
Depth to Water:	30.36	Screened Interval:	–	x Multiplier	–
Water Column Length:	–	Depth to Free Product:	–	x Casing Volumes	–
Purge Volume:	–	Free Product Thickness:	–	= Purge Volume	–
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	35'
Sampling Method:	Same	Tubing Type:	Poly

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	← Stabilization Criteria
14:56					5.51	9.51	.001	16.41	117	153	SC
	Started over see notes										
15:13		.75		.25	5.44	12.41	1.14	3.60	141	1000	SC
15:16		1.5			5.44	13.54	1.13	3.76	147	1000	AC
15:19		2.25			5.45	13.53	1.13	2.63	154	956	AC
15:21		3.5			5.46	14.01	1.13	2.78	158	950	

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-4	Sampling Flow Rate	.25	Analytical Laboratory:	ALS
Sample Time:	15:25	Final Depth to Water:	–	Did Well Dewater?	NO

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 voas	HCl	See CoC	yes (no)	–	–	–
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Equipment malfunction @ 14:58 fixed
Starting over @ 15:10

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-12	Job Number:	320001641-04.003
Client:	NuStar	Date:	1/28/18
Project:	Andover Colt Ct	Sampler:	JH & PW
Weather:	Sunny 28°F	Time In/Out:	14:20

WELL DATA

Well Depth:	—	Well Diameter:	2"	Water Height	—
Depth to Water:	28.40	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	34'	Comments
Sampling Method:	Same	Tubing Type:	Poly	

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
14:27		.75	28.51	.25	5.46	11.08	0.971	4.00	31	0.0	Cl
14:30		1.5	28.59		5.45	13.64	.925	0.0	44	0.0	Cl
14:33		2.25	29.31		5.44	13.93	.925	0.0	55	0.0	Cl
14:36		3.15	29.58		5.44	14.13	.927	0.0	66	0.0	AC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	~~14:40~~ MW-12	Sampling Flow Rate	.25	Analytical Laboratory:	ACS	
Sample Time:	@ 14:40	Final Depth to Water:	29.58	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 VOAs	HCl	See COC	yes no	—	—	—
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-10	Job Number:	320001641-04.005
Client:	NuStar	Date:	1/28/14
Project:	Anchour Colt Ct.	Sampler:	JH + PW
Weather:	Sunny 26° F	Time In/Out:	13:50

WELL DATA

Well Depth:	—	Well Diameter:	2"	Water Height	—
Depth to Water:	27.47	Screened Interval:	—	x Multiplier	—
Water Column Length:	—	Depth to Free Product:	—	x Casing Volumes	—
Purge Volume:	—	Free Product Thickness:	—	= Purge Volume	—
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	30'
Sampling Method:	Same	Tubing Type:	Poly

Comments

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
13:57		.75	27.61	.25	4.70	11.53	1.91	2.53	-67	159	AC
14:00 15:5		1.5	27.75		4.82	13.68	1.54	0.0	-62	60.0	AC
14:03		2.25	27.87		4.87	14.26	1.49	0.0	-48	37.0	
14:06		3.75	27.91		4.90	14.31	1.34	0.0	-44	24.7	

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-10	Sampling Flow Rate	.25	Analytical Laboratory:	ACS
Sample Time:	14:10	Final Depth to Water:	29.13	Did Well Dewater?	No

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 vocs	HCl	See COC	yes (no)	—	—	—
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL MONITORING DATA SHEET

Ash Creek Associates, Inc.

Well I.D.	MW-9	Job Number:	320001641-04-003
Client:	Nu Star	Date:	1/28/14
Project:	Alpover	Sampler:	JH & PW
Weather:	Sunny 25°F	Time In/Out:	13:20

WELL DATA

Well Depth:	–	Well Diameter:	2"	Water Height	–
Depth to Water:	28.93	Screened Interval:	–	x Multiplier	–
Water Column Length:	–	Depth to Free Product:	–	x Casing Volumes	–
Purge Volume:	–	Free Product Thickness:	–	= Purge Volume	–
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pneumatic	Pump Intake Depth:	30'
Sampling Method:	Same	Tubing Type:	Poly

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.2	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
13:26		.25		.25	4.23	10.70	1.04	5.00	6	0.0	AC
13:29		.75		.25	4.33	11.58	.989	6.0	-10	0.0	AC
13:32		1.50			4.47	12.00	.960	0.0	1	0.0	AC
13:35		2.25			4.50	12.13	.960	0.0	8	0.0	AC

Comments

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-9	Sampling Flow Rate	.25	Analytical Laboratory:	ALS
Sample Time:	13:35	Final Depth to Water:	–	Did Well Dewater?	no

# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 voas	HCl	See COC	yes (no)	–	–	–
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

WELL GAGING DATA SHEET

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

		Job Number:	320001641-04-004
Client:	NuStar	Date:	2014 02/12
Project:	Colt Court	Sampler:	P. Ward
Weather:	COLD	Time In/Out:	11:00 / 13:30

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
2006	11:10	39.43	39.44	—	.01	—	BEGAN Vac at 11:15
2006	13:15	—	39.44	—	—	—	End Vac at 13:15
*	Monitor	Wells	were	COVERED	with	SNOW	
	DID NOT	GAUGE.	Also	Pond	meter	had	
	SNOW	Around	it.	could	NOT get	ACCURATE	
	READING	on pond.					

WELL GAGING DATA SHEET

-04-003

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

		Job Number:	320001641-~~01.002~~
Client:	NuStar	Date:	20140819
Project:	Andover GW Monitoring	Sampler:	L. Wand
Weather:	Partly Sunny - 46°	Time In/Out:	11:20

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
2006	11:51	39.36	39.37	—	0.01	—	STARTED VAC @ 12:05
MW-1	13:15	—	31.75	—	—	—	STARTED VAC @ 14:05
MW-2	13:19	—	32.06	—	—	—	
MW-5	13:23	—	21.23	—	—	—	
MW-8	13:29	—	22.15	—	—	—	
MW-13	13:33	—	31.92	—	—	—	
MW-14	13:41	—	32.58	—	—	—	
MW-4	13:55	—	30.61	—	—	—	
MW-11	14:00	—	28.52	—	—	—	
2006	14:07	—	39.30	—	—	—	POST VAC
MW-12	15:04	—	25.46	—	—	—	
MW-10	15:09	—	27.53	—	—	—	
MW-9	15:19	—	29.09	—	—	—	
MW-3	15:35	—	34.00	—	—	—	
MW-6	15:38	—	22.00	—	—	—	
MW-7	15:40	—	16.61	—	—	—	
POND	15:41	—	—	—	—	—	Elev 1344.25
MW-16	15:51	—	29.41	—	—	—	
MW-15	15:56	—	31.82	—	—	—	
MW-1	16:07	—	28.35	—	—	—	POST VAC

ISOTEK, L.L.C.

4901 West Reno, Suite 200
Oklahoma City, OK 73127-6320
BUS: (405) 948-8880
FAX: (405) 948-6015

CHAIN OF CUSTODY

COMPANY NAME: APEX

PROJECT NO.: 33800/641-04 .003

PROJECT NAME: COLT COURT

SAMPLER (Signature): [signature]

ANALYSIS REQUESTED

P.O. #:

INVOICE #:

WATER OR SOIL	DATE	TIME	SAMPLE IDENTIFICATION	VOCs Quali Crossing List	GRO Quali Crossing List							NUMBER OF CONTAINERS	REMARKS
Water	2-20-14	11:55	3020 N. Rugby	X	X							6	
			Nothing Follows										

REPORT TO: SAM JACKSON

INVOICE TO: SAME

PHONE: 603 278 9815

FAX:

E-MAIL: sjackson@apexcos.com

CELL:

TOTAL NUMBER OF CONTAINERS: 6

PRESERVATION METHOD USED: ICED / OTHER

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
[signature]	2-20-14 18:00				
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED BY LAB.

WELL GAGING DATA SHEET

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

		Job Number:	320001641-04.004
Client:	NuStar	Date:	2-26-14
Project:	Andover Colt Court	Sampler:	P. Wand
Weather:	16°	Time In/Out:	08:45 / 16:15

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
2006	0855	39.64	39.60	7.00	—	—	Begin Vac @ 10:10 (time)
MW-1	12:08	—	31.70	35.05	—	—	Begin Vac @ 12:10 (time)
MW-2	16:05	—	31.96	44.17	—	—	
MW-3	15:43	—	54.24	60.70	—	—	
MW-4	16:03	—	31.56	41.30	—	—	
MW-5	16:08	—	21.02	29.55	—	—	
MW-6	15:45	—	22.32	40.05	—	—	
MW-7	15:48	—	16.64	23.74	—	—	
MW-8	16:11	—	21.96	30.12	—	—	
MW-9	15:37	—	29.16	40.77	—	—	Damaged cap
MW-10	15:28	—	27.58	34.02	—	—	
MW-11	15:55	—	28.71	40.16	—	—	
MW-12	15:19	—	28.49	43.32	—	—	
MW-13	16:14	—	32.00	44.70	—	—	
MW-14	16:15	—	32.71	45.00	—	—	
MW-15	15:59	—	32.03	44.89	—	—	
MW-16	15:58	—	29.68	45.37	—	—	
Pond	12:50	—	1344.16	—	—	—	
2006	12:12	—	38.62	—	—	—	Post Vac
MW-1	14:15	—	29.99	—	—	—	Post Vac
							Sam Jackson 503-278-9815

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants
9515 SW Allen Boulevard, Suite 106
Portland, Oregon 97225-4616
www.ashcreekassociates.com
Portland (503) 974-4704
Vancouver (360) 567-3977
Fax (503) 974-4707

PROJECT NUMBER 32001641-04.004
FIELD REPORT NUMBER
PAGE 1 OF 1
DATE 20140226

PROJECT Andover / Cut Court
LOCATION Andover KS
CLIENT NUSTAR
PURPOSE OF OBSERVATIONS Damaged Wells
ASH CREEK REPRESENTATIVE Paul Ward
CONTRACTOR —
CONTRACTOR REP. —

ARRIVAL TIME 08:45
DEPARTURE TIME 16:15
WEATHER COLD
ASH CREEK PROJECT MANAGER Sam Jackson
PERMIT NO. —
JOB PHONE 918 610 3543

Our firm's professionals are represented on site solely to observe operations of the contractor identified, to form opinions about the adequacy of those operations, and to report those opinions to our client. The presence and activities of our field representative do not relieve any contractor from its obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods, operations, send sequence of construction. Unless signed by the Ash Creek Associates Project Manager, this report is preliminary. A preliminary report is provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those included in a preliminary report.

MW 9, 4, and 8 Well Covers have been damaged by snow plow. All Covers measure 6'/8". Some have missing bolts. I advised Sam I will order new covers and get replacement bolts for all well covers that are stainless steel to prevent rust.

BY

ASH CREEK ASSOCIATES REPRESENTATIVE

REVIEWED BY

ASH CREEK ASSOCIATES PROJECT MANAGER

HAZ-MAT RESPONSE, INC.sm

"YOUR FIRST LINE OF DEFENSE"®

Straight bill of lading - Short form		Date: 2-26-14	
Shipper: NU STAR		Consignee: Custom Wastewater Tech	
Address:		Address: 5. Hoover	
City: Eldorado		City: Wichita	
State: KS	County: BU	State: KS	County: SG

Shipped From:

Address: 2006 Colt Ct		
City: Andover	State: KS	County: BU

HMRI Job #: 1R2B0938	
Client Billing Code #:	Phone #:
Client Contact:	Fax #:

In Case of Emergency Call 1-800-229-5252

No. Items	HM	Description of Items Being Shipped	Weight
100 gl		Non RCRA Contact Water	720 lbs

Scale Ticket # :	**Transporting Unit # :** T-202

Accepted By:

Name *(Print)*:	Signature:

Shippers Agent:

Paul Ward	[signature]

Transporter:

Haz-Mat Response, Inc.	
Drivers Name *(Print)*: Paul Vander Meer	Signature: [signature]

HAZ-MAT RESPONSE, INC.sm
1203C South Parker Street
Olathe, Kansas 66061
913-782-5151 800-229-5252
E-mail: hazmat@haz-matresponse.com Web site: www.haz-matresponse.com

WELL GAGING DATA SHEET

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

		Job Number:	320001641-04.004
Client:	NuStar	Date:	20140304
Project:	Andover Colt Court	Sampler:	[illegible]
Weather:	20°F	Time In/Out:	09:00 / 16:00

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	~~Product Thickness (feet)~~	~~Water Column Height (feet)~~	Notes/Other Remarks
					P.D START	P.D END	
2006	09:30	39.73	39.76	—	943.2	1007.4	Begin Vac @ 09:35 (time)
MW-1	10:30	—	31.62	—	718	356	Begin Vac @ 11:36 (time)
MW-2	12:00	—	32.41	—	—	—	
MW-3	13:23	—	34.36	—	—	—	
MW-4	12:54	—	30.54	—	—	—	
MW-5	12:07	—	21.05	—	—	—	
MW-6	14:40	—	22.06	—	—	—	
MW-7	14:45	—	16.65	—	—	—	
MW-8	12:16	—	21.84	—	—	—	
MW-9	under	Water	—	—	—	—	
MW-10	13:27	—	27.62	—	881	241.7	Begin Vac @ 13:44
MW-11	13:05	—	28.61	—	—	—	
MW-12	COVERED	with	ice	—	—	—	
MW-13	12:22	—	32.05	—	—	—	
MW-14	12:36	—	32.75	—	—	—	
MW-15	13:00	—	32.10	—	—	—	
MW-16	COVERED	WITH	ICE	—	—	—	
Pond	COULD	NOT	READ	DUE TO	ICE	BUILD	UP
2006	11:42	—	39.26	—	—	—	Post Vac
MW-1	13:52	—	31.39	—	—	—	Post Vac
MW-10	15:50	—	27.71	—	—	—	POST VAC
							Sam Jackson 503-278-9815

HAZ-MAT RESPONSE, INC.sm

"YOUR FIRST LINE OF DEFENSE"®

Straight bill of lading - Short form		Date: 3-4-2014	
Shipper: Nu Star		Consignee: Custom Wastewater	
Address:		Address: 3458 S. Hoover	
City: Eldorado		City: Wichita KS	
State: KS	County: Bu	State: KS	County: SG

Shipped From:

Address: 2006 Colt Ct		
City: Andover	State: KS	County: Bu

HMRI Job #: 12213043B	
Client Billing Code #:	Phone #:
Client Contact:	Fax #:

In Case of Emergency Call 1-800-229-5252

No. Items	HM	Description of Items Being Shipped	Weight
700 gl		Non RCRA Contact Water	7000 lb.

Scale Ticket # :	**Transporting Unit # :** T-202

Accepted By:

Name *(Print)*:	Signature:

Shippers Agent:

Paul Ward	[illegible]

Transporter:

Haz-Mat Response, Inc.	
Drivers Name *(Print)*: Rex Vandervoer	Signature: [illegible]

HAZ-MAT RESPONSE, INC.sm
1203C South Parker Street
Olathe, Kansas 66061
913-782-5151 800-229-5252
E-mail: hazmat@haz-matresponse.com Web site: www.haz-matresponse.com

WELL GAGING DATA SHEET

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

		Job Number:	320001641-04.004
Client:	NuStar	Date:	20140313
Project:	Andover Colt Court	Sampler:	P. Ubrich
Weather:	Sunny	Time In/Out:	0850 /

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
					RID 1	RID 2	
2006	10:58	39.86	39.89	—	484	387	Begin Vac @ 11:20 (time)
MW-1	11:20	—	31.44	—	455	577	Begin Vac @ 13:22 (time)
MW-2	10:37	—	32.09	—	—	—	
MW-3	12:33	—	34.42	—	—	—	
MW-4	12:05	—	30.56	—	—	—	
MW-5	10:33	—	20.98	—	—	—	
MW-6	12:37	—	22.30	—	—	—	
MW-7	12:41	—	16.73	—	—	—	
MW-8	10:18	—	21.90	—	—	—	
MW-9	11:07	—	29.31	—	—	—	
MW-10	08:55	—	27.78	—	366	441	Begin Vac @ 09:15
MW-11	13:22	—	28.77	—	—	—	
MW-12	11:10	—	28.77	—	—	—	
MW-13	10:13	—	32.25	—	—	—	
MW-14	10:07	—	32.83	—	—	—	
MW-15	12:10	—	37.20	—	—	—	
MW-16	12:15	—	28.71	—	—	—	
Pond	12:43	—	—	—	—	—	1343.90
2006	13:29	—	39.91	—	—	—	Post Vac
MW-1	15:25	—	31.19	—	—	—	Post Vac
MW-10	11:17	—	28.11	—	—	—	POST Vac
							Sam Jackson 503-278-9815

HAZ-MAT RESPONSE, INC.sm

"YOUR FIRST LINE OF DEFENSE"®

Straight bill of lading - Short form		Date: 3-13-14	
Shipper: NuStar		Consignee: Custom Waste Water	
Address:		Address: S. Hoover	
City: El Dorado		City: Wichita	
State: KS	County: BU	State: KS	County: SG

Shipped From:

Address: 2006 Colt Ct		
City: Andover	State: KS	County: BU

HMRI Job #: 1R2130438	
Client Billing Code #:	Phone #:
Client Contact:	Fax #:

In Case of Emergency Call 1-800-229-5252

No. Items	HM	Description of Items Being Shipped	Weight
750 gl		Non RCRA Contact Water	5400 lbs

Scale Ticket # :	**Transporting Unit # :** T-202

Accepted By:

Name *(Print)*:	Signature:

Shippers Agent:

Paul Ward	Paul Ward

Transporter:

Haz-Mat Response, Inc.	
Drivers Name *(Print)*: Paul Vander Meer	Signature:

HAZ-MAT RESPONSE, INC.sm
1203C South Parker Street
Olathe, Kansas 66061
913-782-5151 800-229-5252
E-mail: hazmat@haz-matresponse.com Web site: www.haz-matresponse.com

WELL GAGING DATA SHEET

APEX

		Job Number:	320001641-04.004
Client:	NuStar	Date:	3/18/14
Project:	Andover Col/Ct.	Sampler:	Jacob Harris
Weather:	Partly Cloud 55°F	Time In/Out:	10:00 / 4:30

WATER LEVEL DATA

	Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
Pre	2006	12:15	39.61	39.65	–	.04	–	Start @ 12:15 PID-478.4
	MW-1	12:18	–	31.41	–			Start @ 2:16 PID -506.8
	MW-2	10:59	–	31.86	–			
	MW-3	10:55	–	34.35	–			
	MW-4	11:10	–	30.80	–			
	MW-5	11:05	–	20.86	–			
	MW-7	~~10:59~~ 11:25	–	~~31.86~~ 16.68	–			
	MW-6	11:30	–	22.14	–			
	MW-8	10:40	–	21.70	–			
	MW-9	10:48	–	29.17	–			
	MW-10	10:10	–	27.65	–	PID Start 500.1	PID Stop 346.8	Start - 10:10 Stop 12:10
	MW-11	11:40	–	28.51	–			
	MW-12	10:45	–	28.70	–			
	MW-13	10:35	–	32.05	–			
	MW-14	10:30	–	32.70	–			
	MW-15	11:15	–	37.00	–			
	MW-16	11:13	–	29.50	–			
	Pond	11:35	–	1344.00	–			
	MW-10	12:10	–	28.00	–	–	–	
Post	2006	2:15	–	39.60				Stop - 2:15 Stop PID 451.7
Post	MW-1	4:15	–	29.80				Stop PID @ 4:15 420.5
	Estimated	water	recovered					
	MW-10	750 gal						
	2006	50 gal						
	MW-1	50 gal						

HAZ-MAT RESPONSE, INC.sm

"YOUR FIRST LINE OF DEFENSE"®

Straight bill of lading - Short form		Date: 3 18 14	
Shipper: No. Star		Consignee: Custom Wastewater	
Address:		Address: S. Hoover	
City: Eldorado		City: Wichita	
State: KS	County: Bu	State: KS	County: Sg

Shipped From:

Address: 2006 Colt Ct		
City: Andover	State: KS	County: Bu

HMRI Job #: 1R2130438	
Client Billing Code #:	Phone #:
Client Contact:	Fax #:

In Case of Emergency Call 1-800-229-5252

No. Items	HM	Description of Items Being Shipped	Weight
850 gl		Non RCRA Contact water	6120 lbs

Scale Ticket # :	**Transporting Unit # :** T-202

Accepted By:

Name *(Print)*:	Signature:

Shippers Agent:

Jace Harris Apex Companies	Jace Harris

Transporter:

Haz-Mat Response, Inc.	
Drivers Name *(Print)*: Paul Vander Meer	Signature:

HAZ-MAT RESPONSE, INC.sm
1203C South Parker Street
Olathe, Kansas 66061
913-782-5151 800-229-5252
E-mail: hazmat@haz-matresponse.com Web site: www.haz-matresponse.com

WELL GAGING DATA SHEET

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

		Job Number:	320001641-04.004
Client:	NuStar	Date:	20140327
Project:	Andover Colt Court	Sampler:	[illegible]
Weather:	61° Windy	Time In/Out:	09:45 / 17:20

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	~~Product Thickness (feet)~~	~~Water Column Height (feet)~~	Notes/Other Remarks
					PID 1	PID 2	
2006	13:52	39.69	39.73	—	744	841	Begin Vac @ 14:15 (time)
MW-1	16:07	—	31.55	—	500.1	434	Begin Vac @ 16:15 (time)
MW-2	11:45	—	32.09	—	—	—	
MW-3	11:57	—	34.68	—	.31	39.5	Begin Vac @ 12:10
MW-4	11:50	—	30.72	—	—	—	
MW-5	11:37	—	28.97	—	—	—	
MW-6	13:23	—	21.89	—	—	—	
MW-7	13:26	—	16.56	—	—	—	
MW-8	11:27	—	21.79	—	—	—	
MW-9	12:21	—	28.59	—	—	—	
MW-10	10:00	—	28.12	—	1060	795	Begin Vac @ 10:05
MW-11	14:55	—	28.68	—	—	—	
MW-12	13:18	—	29.25	—	—	—	
MW-13	11:15	—	32.16	—	—	—	
MW-14	11:22	—	32.79	—	—	—	
MW-15	14:52	—	32.29	—	—	—	
MW-16	14:49	—	29.62	—	—	—	
Pond	13:37	—	—	—	—	—	1343.8
2006	16:12	—	39.73	—	—	—	Post Vac (100 gal)
MW-1	17:17	—	30.06	—	—	—	Post Vac (100 gal)
MW-10	12:17	—	28.14	—	—	—	Post Vac (400 gal)
MW-3	14:20	—	34.51	—	—	—	Post Vac (250 gal)
							Post Vac ~~100~~ [illegible]
							Sam Jackson 503-278-9815

Appendix B

Historical Groundwater Elevations and SPH Removal Data

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-1	8/8/2013	4.0	1352.13	35	20-35	24.64	--	--	1327.49
	8/13/2013					24.36	--	--	1327.77
	8/21/2013					23.79	--	--	1328.34
	8/28/2013					25.21	--	--	1326.92
	9/5/2013					27.19	--	--	1324.94
	9/11/2013					25.93	--	--	1326.20
	9/17/2013					25.92	--	--	1326.21
	9/23/2013					28.49	--	--	1323.64
	9/30/2013					23.00	--	--	1329.13
	10/10/2013					25.28	--	--	1326.85
	10/17/2013					26.21	--	--	1325.92
	10/23/2013					23.55	--	--	1328.58
	10/31/2013					24.28	--	--	1327.85
	11/6/2013					NM	--	--	NM
	11/13/2013					23.04	--	--	1329.09
	11/20/2013					22.84	--	--	1329.29
	11/26/2013					24.88	--	--	1327.25
	12/3/2013					30.19	--	--	1321.94
	12/11/2013					31.12	--	--	1321.01
	12/19/2013					31.38	--	--	1320.75
	12/27/2013					31.50	--	--	1320.63
	1/3/2014					NM	--	--	NM
	1/10/2014					31.41	--	--	1320.72
	1/16/2014					31.01	--	--	1321.12
	1/21/2014					31.31	--	--	1320.82
	1/27/2014					30.78	--	--	1321.35
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					31.75	--	--	1320.38
	2/26/2014					31.70	--	--	1320.43
	3/4/2014					31.62	--	--	1320.51
	3/13/2014					31.44	--	--	1320.69
	3/18/2014					31.41	--	--	1320.72
	3/27/2014					31.55	--	--	1320.58
MW-2	8/8/2013	2.0	1353.17	44	29-44	31.93	--	--	1321.24
	8/13/2013					31.27	--	--	1321.90
	8/21/2013					30.85	--	--	1322.32
	8/28/2013					31.45	--	--	1321.72
	9/5/2013					31.45	--	--	1321.72
	9/11/2013					32.18	--	--	1320.99
	9/17/2013					32.10	--	--	1321.07
	9/23/2013					31.66	--	--	1321.51
	9/30/2013					32.55	--	--	1320.62

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-2 (continued)	10/10/2013	2.0	1353.17	44	29-44	29.11	--	--	1324.06
	10/17/2013					31.91	--	--	1321.26
	10/23/2013					32.47	--	--	1320.70
	10/31/2013					32.19	--	--	1320.98
	11/6/2013					31.46	--	--	1321.71
	11/13/2013					31.96	--	--	1321.21
	11/20/2013					31.19	--	--	1321.98
	11/26/2013					31.38	--	--	1321.79
	12/3/2013					30.94	--	--	1322.23
	12/11/2013					NM	--	--	NM
	12/19/2013					31.45	--	--	1321.72
	12/27/2013					NM	--	--	NM
	1/3/2014					NM	--	--	NM
	1/10/2014					NM	--	--	NM
	1/16/2014					31.21	--	--	1321.96
	1/21/2014					31.49	--	--	1321.68
	1/27/2014					31.90	--	--	1321.27
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					32.06	--	--	1321.11
	2/26/2014					31.96	--	--	1321.21
	3/4/2014					32.41	--	--	1320.76
	3/13/2014					32.09	--	--	1321.08
	3/18/2014					31.86	--	--	1321.31
	3/27/2014					32.09	--	--	1321.08
MW-3	8/8/2013	2.0	1350.47	60	40-60	36.94	--	--	1313.53
	8/13/2013					34.71	--	--	1315.76
	8/21/2013					33.30	--	--	1317.17
	8/28/2013					39.26	--	--	1311.21
	9/5/2013					42.54	--	--	1307.93
	9/11/2013					45.19	--	--	1305.28
	9/17/2013					43.52	--	--	1306.95
	9/23/2013					43.34	--	--	1307.13
	9/30/2013					43.40	--	--	1307.07
	10/10/2013					43.18	--	--	1307.29
	10/17/2013					41.23	--	--	1309.24
	10/23/2013					41.43	--	--	1309.04
	10/31/2013					41.58	--	--	1308.89
	11/6/2013					41.19	--	--	1309.28
	11/13/2013					35.98	--	--	1314.49
	11/20/2013					35.27	--	--	1315.20
	11/26/2013					34.56	--	--	1315.91

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-3 (continued)	12/3/2013	2.0	1350.47	60	40-60	33.77	--	--	1316.70
	12/11/2013					34.04	--	--	1316.43
	12/19/2013					33.72	--	--	1316.75
	12/27/2013					33.89	--	--	1316.58
	1/3/2014					NM	--	--	NM
	1/10/2014					33.47	--	--	1317.00
	1/16/2014					33.68	--	--	1316.79
	1/21/2014					33.84	--	--	1316.63
	1/27/2014					34.04	--	--	1316.43
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					34.00	--	--	1316.47
	2/26/2014					34.24	--	--	1316.23
	3/4/2014					34.36	--	--	1316.11
	3/13/2014					34.42	--	--	1316.05
	3/18/2014					34.35	--	--	1316.12
	3/27/2014					34.68	--	--	1315.79
MW-4	8/8/2013	2.0	1350.73	41	26-41	28.89	--	--	1321.84
	8/13/2013					28.85	--	--	1321.88
	8/21/2013					28.18	--	--	1322.55
	8/28/2013					28.56	--	--	1322.17
	9/5/2013					29.16	--	--	1321.57
	9/11/2013					29.55	--	--	1321.18
	9/17/2013					30.06	--	--	1320.67
	9/23/2013					30.32	--	--	1320.41
	9/30/2013					30.11	--	--	1320.62
	10/10/2013					30.45	--	--	1320.28
	10/17/2013					30.43	--	--	1320.30
	10/23/2013					30.36	--	--	1320.37
	10/31/2013					30.14	--	--	1320.59
	11/6/2013					29.78	--	--	1320.95
	11/13/2013					30.21	--	--	1320.52
	11/20/2013					29.81	--	--	1320.92
	11/26/2013					30.34	--	--	1320.39
	12/3/2013					30.64	--	--	1320.09
	12/11/2013					30.19	--	--	1320.54
	12/19/2013					30.47	--	--	1320.26
	12/27/2013					30.43	--	--	1320.30
	1/3/2014					NM	--	--	NM
	1/10/2014					29.44	--	--	1321.29
	1/16/2014					29.38	--	--	1321.35
	1/21/2014					29.53	--	--	1321.20
	1/27/2014					30.36	--	--	1320.37

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-4 (continued)	2/5/2014	2.0	1350.73	41	26-41	NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					30.61	--	--	1320.12
	2/26/2014					31.56	--	--	1319.17
	3/4/2014					30.54	--	--	1320.19
	3/13/2014					30.56	--	--	1320.17
	3/18/2014					30.80	--	--	1319.93
	3/27/2014					30.72	--	--	1320.01
MW-5	8/8/2013	2.0	1352.77	30	15-30	19.61	--	--	1333.16
	8/13/2013					19.39	--	--	1333.38
	8/21/2013					19.66	--	--	1333.11
	8/28/2013					20.02	--	--	1332.75
	9/5/2013					20.54	--	--	1332.23
	9/11/2013					20.81	--	--	1331.96
	9/17/2013					21.03	--	--	1331.74
	9/23/2013					21.00	--	--	1331.77
	9/30/2013					21.17	--	--	1331.60
	10/10/2013					21.45	--	--	1331.32
	10/17/2013					21.18	--	--	1331.59
	10/23/2013					21.20	--	--	1331.57
	10/31/2013					21.19	--	--	1331.58
	11/6/2013					20.91	--	--	1331.86
	11/13/2013					20.79	--	--	1331.98
	11/20/2013					20.18	--	--	1332.59
	11/26/2013					21.29	--	--	1331.48
	12/3/2013					20.84	--	--	1331.93
	12/11/2013					20.96	--	--	1331.81
	12/19/2013					20.54	--	--	1332.23
	12/27/2013					20.82	--	--	1331.95
	1/3/2014					NM	--	--	NM
	1/10/2014					20.19	--	--	1332.58
	1/16/2014					20.90	--	--	1331.87
	1/21/2014					21.04	--	--	1331.73
	1/27/2014					20.84	--	--	1331.93
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					21.23	--	--	1331.54
	2/26/2014					21.02	--	--	1331.75
	3/4/2014					21.05	--	--	1331.72
	3/13/2014					20.98	--	--	1331.79
	3/18/2014					20.86	--	--	1331.91
	3/27/2014					20.97	--	--	1331.80

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-6	8/8/2013	2.0	1349.76	41	26-41	15.67	--	--	1334.09
	8/13/2013					18.34	--	--	1331.42
	8/21/2013					17.40	--	--	1332.36
	8/28/2013					17.95	--	--	1331.81
	9/5/2013					18.32	--	--	1331.44
	9/11/2013					18.21	--	--	1331.55
	9/17/2013					18.44	--	--	1331.32
	9/23/2013					18.30	--	--	1331.46
	9/30/2013					18.69	--	--	1331.07
	10/10/2013					18.84	--	--	1330.92
	10/17/2013					18.76	--	--	1331.00
	10/23/2013					18.69	--	--	1331.07
	10/31/2013					18.57	--	--	1331.19
	11/6/2013					18.01	--	--	1331.75
	11/13/2013					19.42	--	--	1330.34
	11/20/2013					19.02	--	--	1330.74
	11/26/2013					19.84	--	--	1329.92
	12/3/2013					19.63	--	--	1330.13
	12/11/2013					20.45	--	--	1329.31
	12/19/2013					21.21	--	--	1328.55
	12/27/2013					21.67	--	--	1328.09
	1/3/2014					NM	--	--	NM
	1/10/2014					21.51	--	--	1328.25
	1/16/2014					21.48	--	--	1328.28
	1/21/2014					21.84	--	--	1327.92
	1/27/2014					22.26	--	--	1327.50
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					22.00	--	--	1327.76
	2/26/2014					22.32	--	--	1327.44
	3/4/2014					22.06	--	--	1327.70
	3/13/2014					22.30	--	--	1327.46
	3/18/2014					22.14	--	--	1327.62
	3/27/2014					21.89	--	--	1327.87
MW-7	8/8/2013	2.0	1348.98	24	9-24	13.32	--	--	1335.66
	8/13/2013					13.68	--	--	1335.30
	8/21/2013					14.03	--	--	1334.95
	8/28/2013					14.76	--	--	1334.22
	9/5/2013					15.44	--	--	1333.54
	9/11/2013					15.66	--	--	1333.32
	9/17/2013					15.78	--	--	1333.20

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-7 (continued)	9/23/2013	2.0	1348.98	24	9-24	15.54	--	--	1333.44
	9/30/2013					15.39	--	--	1333.59
	10/10/2013					15.65	--	--	1333.33
	10/17/2013					15.68	--	--	1333.30
	10/23/2013					15.64	--	--	1333.34
	10/31/2013					15.66	--	--	1333.32
	11/6/2013					15.11	--	--	1333.87
	11/13/2013					15.21	--	--	1333.77
	11/20/2013					15.62	--	--	1333.36
	11/26/2013					15.89	--	--	1333.09
	12/3/2013					16.03	--	--	1332.95
	12/11/2013					16.45	--	--	1332.53
	12/19/2013					16.41	--	--	1332.57
	12/27/2013					16.59	--	--	1332.39
	1/3/2014					NM	--	--	NM
	1/10/2014					16.47	--	--	1332.51
	1/16/2014					16.45	--	--	1332.53
	1/21/2014					16.66	--	--	1332.32
	1/27/2014					16.68	--	--	1332.30
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					16.61	--	--	1332.37
	2/26/2014					16.64	--	--	1332.34
	3/4/2014					16.65	--	--	1332.33
	3/13/2014					16.73	--	--	1332.25
	3/18/2014					16.68	--	--	1332.30
	3/27/2014					16.56	--	--	1332.42
MW-8	8/8/2013	2.0	1353.38	30	15-30	18.62	--	--	1334.76
	8/13/2013					18.13	--	--	1335.25
	8/21/2013					18.32	--	--	1335.06
	8/28/2013					19.21	--	--	1334.17
	9/5/2013					20.00	--	--	1333.38
	9/11/2013					20.35	--	--	1333.03
	9/17/2013					20.54	--	--	1332.84
	9/23/2013					20.59	--	--	1332.79
	9/30/2013					20.70	--	--	1332.68
	10/10/2013					20.82	--	--	1332.56
	10/17/2013					20.92	--	--	1332.46
	10/23/2013					20.85	--	--	1332.53
	10/31/2013					20.89	--	--	1332.49
	11/6/2013					19.21	--	--	1334.17

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-8 (continued)	11/13/2013	2.0	1353.38	30	15-30	19.38	--	--	1334.00
	11/20/2013					18.86	--	--	1334.52
	11/26/2013					20.30	--	--	1333.08
	12/3/2013					20.54	--	--	1332.84
	12/11/2013					21.09	--	--	1332.29
	12/19/2013					21.11	--	--	1332.27
	12/27/2013					21.54	--	--	1331.84
	1/3/2014					NM	--	--	NM
	1/10/2014					21.24	--	--	1332.14
	1/16/2014					21.70	--	--	1331.68
	1/21/2014					21.80	--	--	1331.58
	1/27/2014					21.88	--	--	1331.50
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					22.15	--	--	1331.23
	2/26/2014					21.46	--	--	1331.92
	3/4/2014					21.84	--	--	1331.54
	3/13/2014					21.90	--	--	1331.48
	3/18/2014					21.70	--	--	1331.68
	3/27/2014					21.79	--	--	1331.59
MW-9	8/8/2013	2.0	1349.48	34	19-34	28.61	--	--	1320.87
	8/13/2013					27.58	--	--	1321.90
	8/21/2013					27.52	--	--	1321.96
	8/28/2013					27.60	--	--	1321.88
	9/5/2013					28.28	--	--	1321.20
	9/11/2013					30.57	--	--	1318.91
	9/17/2013					30.05	--	--	1319.43
	9/23/2013					30.25	--	--	1319.23
	9/30/2013					30.45	--	--	1319.03
	10/10/2013					30.76	--	--	1318.72
	10/17/2013					30.69	--	--	1318.79
	10/23/2013					30.73	--	--	1318.75
	10/31/2013					30.11	--	--	1319.37
	11/6/2013					30.03	--	--	1319.45
	11/13/2013					29.54	--	--	1319.94
	11/20/2013					28.66	--	--	1320.82
	11/26/2013					28.67	--	--	1320.81
	12/3/2013					28.40	--	--	1321.08
	12/11/2013					28.55	--	--	1320.93
	12/19/2013					28.55	--	--	1320.93
	12/27/2013					NM	--	--	NM

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-9 (continued)	1/3/2014	2.0	1349.48	34	19-34	NM	--	--	NM
	1/10/2014					28.65	--	--	1320.83
	1/16/2014					28.75	--	--	1320.73
	1/21/2014					28.91	--	--	1320.57
	1/27/2014					28.93	--	--	1320.55
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					29.09	--	--	1320.39
	2/26/2014					29.16	--	--	1320.32
	3/4/2014					NM	--	--	NM
	3/13/2014					29.31	--	--	1320.17
	3/18/2014					29.17	--	--	1320.31
	3/27/2014					28.59	--	--	1320.89
MW-10	8/8/2013	2.0	1348.79	34	19-34	26.72	--	--	1322.07
	8/13/2013					25.39	--	--	1323.40
	8/21/2013					24.94	--	--	1323.85
	8/28/2013					25.94	--	--	1322.85
	9/5/2013					28.21	--	--	1320.58
	9/11/2013					28.42	--	--	1320.37
	9/17/2013					28.49	--	--	1320.30
	9/23/2013					28.46	--	--	1320.33
	9/30/2013					28.32	--	--	1320.47
	10/10/2013					28.30	--	--	1320.49
	10/17/2013					28.45	--	--	1320.34
	10/23/2013					28.33	--	--	1320.46
	10/31/2013					28.40	--	--	1320.39
	11/6/2013					27.87	--	--	1320.92
	11/13/2013					28.25	--	--	1320.54
	11/20/2013					27.53	--	--	1321.26
	11/26/2013					27.30	--	--	1321.49
	12/3/2013					26.81	--	--	1321.98
	12/11/2013					27.14	--	--	1321.65
	12/19/2013					27.10	--	--	1321.69
	12/27/2013					27.42	--	--	1321.37
	1/3/2014					NM	--	--	NM
	1/10/2014					27.35	--	--	1321.44
	1/16/2014					27.51	--	--	1321.28
	1/21/2014					27.77	--	--	1321.02
	1/27/2014					27.47	--	--	1321.32
	2/5/2014					NM	--	--	NM

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-10 (continued)	2/12/2014	2.0	1348.79	34	19-34	NM	--	--	NM
	2/19/2014					27.53			1321.26
	2/26/2014					27.58			1321.21
	3/4/2014					27.66	--	--	1321.13
	3/13/2014					27.78	--	--	1321.01
	3/18/2014					27.65	--	--	1321.14
	3/27/2014					28.12	--	--	1320.67
MW-11	9/30/2013	2.0	1351.34	42	22-42	29.03	--	--	1322.31
	10/10/2013					28.08	--	--	1323.26
	10/17/2013					28.26	--	--	1323.08
	10/23/2013					29.36	--	--	1321.98
	10/31/2013					28.92	--	--	1322.42
	11/6/2013					28.14	--	--	1323.20
	11/13/2013					28.16	--	--	1323.18
	11/20/2013					27.70	--	--	1323.64
	11/26/2013					28.03	--	--	1323.31
	12/3/2013					28.03	--	--	1323.31
	12/11/2013					28.54	--	--	1322.80
	12/19/2013					28.53	--	--	1322.81
	12/27/2013					28.80	--	--	1322.54
	1/3/2014					NM	--	--	NM
	1/10/2014					29.60	--	--	1321.74
	1/16/2014					28.89	--	--	1322.45
	1/21/2014					28.99	--	--	1322.35
	1/27/2014					28.91	--	--	1322.43
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					28.52	--	--	1322.82
	2/26/2014					28.71	--	--	1322.63
	3/4/2014					28.61	--	--	1322.73
	3/13/2014					28.77	--	--	1322.57
	3/18/2014					28.51	--	--	1322.83
	3/27/2014					28.68	--	--	1322.66
MW-12	9/30/2013	2.0	1349.74	43	23-43	30.15	--	--	1319.59
	10/10/2013					30.55	--	--	1319.19
	10/17/2013					30.49	--	--	1319.25
	10/23/2013					30.40	--	--	1319.34
	10/31/2013					30.45	--	--	1319.29
	11/6/2013					29.91	--	--	1319.83
	11/13/2013					29.32	--	--	1320.42
	11/20/2013					28.16	--	--	1321.58
	11/26/2013					27.91	--	--	1321.83

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-12 (continued)	12/3/2013	2.0	1349.74	43	23-43	27.41	--	--	1322.33
	12/11/2013					27.83	--	--	1321.91
	12/19/2013					27.74	--	--	1322.00
	12/27/2013					NM	--	--	NM
	1/3/2014					NM	--	--	NM
	1/10/2014					28.25	--	--	1321.49
	1/16/2014					28.28	--	--	1321.46
	1/21/2014					28.61	--	--	1321.13
	1/27/2014					28.40	--	--	1321.34
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					28.46	--	--	1321.28
	2/26/2014					28.49	--	--	1321.25
	3/4/2014					NM	--	--	NM
	3/13/2014					28.77	--	--	1320.97
	3/18/2014					28.70	--	--	1321.04
	3/27/2014					29.25	--	--	1320.49
MW-13	9/30/2013	2.0	1354.58	45	25-45	31.25	--	--	1323.33
	10/10/2013					31.59	--	--	1322.99
	10/17/2013					31.74	--	--	1322.84
	10/23/2013					31.70	--	--	1322.88
	10/31/2013					31.72	--	--	1322.86
	11/6/2013					31.61	--	--	1322.97
	11/13/2013					31.70	--	--	1322.88
	11/20/2013					30.84	--	--	1323.74
	11/26/2013					31.30	--	--	1323.28
	12/3/2013					31.02	--	--	1323.56
	12/11/2013					31.26	--	--	1323.32
	12/19/2013					31.16	--	--	1323.42
	12/27/2013					31.48	--	--	1323.10
	1/3/2014					NM	--	--	NM
	1/10/2014					31.22	--	--	1323.36
	1/16/2014					32.70	--	--	1321.88
	1/21/2014					31.94	--	--	1322.64
	1/27/2014					31.98	--	--	1322.60
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					31.92	--	--	1322.66
	2/26/2014					32.10	--	--	1322.48
	3/4/2014					32.05	--	--	1322.53
	3/13/2014					32.25	--	--	1322.33
	3/18/2014					32.05	--	--	1322.53
	3/27/2014					32.16	--	--	1322.42

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-14	9/30/2013	2.0	1354.99	45	25-45	31.59	--	--	1323.40
	10/10/2013					31.53	--	--	1323.46
	10/17/2013					31.71	--	--	1323.28
	10/23/2013					31.74	--	--	1323.25
	10/31/2013					31.76	--	--	1323.23
	11/6/2013					NM	--	--	NM
	11/13/2013					31.48	--	--	1323.51
	11/20/2013					30.51	--	--	1324.48
	11/26/2013					31.47	--	--	1323.52
	12/3/2013					31.42	--	--	1323.57
	12/11/2013					31.73	--	--	1323.26
	12/19/2013					31.74	--	--	1323.25
	12/27/2013					31.95	--	--	1323.04
	1/3/2014					NM	--	--	NM
	1/10/2014					31.47	--	--	1323.52
	1/16/2014					32.23	--	--	1322.76
	1/21/2014					32.35	--	--	1322.64
	1/27/2014					32.40	--	--	1322.59
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					32.58	--	--	1322.41
	2/26/2014					32.71	--	--	1322.28
	3/4/2014					32.75	--	--	1322.24
	3/13/2014					32.83	--	--	1322.16
	3/18/2014					32.70	--	--	1322.29
	3/27/2014					32.79	--	--	1322.20
MW-15	9/30/2013	2.0	1351.79	45	25-45	32.64	--	--	1319.15
	10/10/2013					32.75	--	--	1319.04
	10/17/2013					32.93	--	--	1318.86
	10/23/2013					32.84	--	--	1318.95
	10/31/2013					32.77	--	--	1319.02
	11/6/2013					32.23	--	--	1319.56
	11/13/2013					31.72	--	--	1320.07
	11/20/2013					30.80	--	--	1320.99
	11/26/2013					30.96	--	--	1320.83
	12/3/2013					30.63	--	--	1321.16
	12/11/2013					30.93	--	--	1320.86
	12/19/2013					31.75	--	--	1320.04
	12/27/2013					31.05	--	--	1320.74
	1/3/2014					NM	--	--	NM
	1/10/2014					31.10	--	--	1320.69

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
MW-15 (continued)	1/16/2014	2.0	1351.79	45	25-45	31.30	--	--	1320.49
	1/21/2014					31.61	--	--	1320.18
	1/27/2014					31.61	--	--	1320.18
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					31.82	--	--	1319.97
	2/26/2014					32.03	--	--	1319.76
	3/4/2014					32.10	--	--	1319.69
	3/13/2014					37.20	--	--	1314.59
	3/18/2014					37.00	--	--	1314.79
	3/27/2014					32.29	--	--	1319.50
MW-16	9/30/2013	2.0	1352.13	45	25-45	31.60	--	--	1320.53
	10/10/2013					30.76	--	--	1321.37
	10/17/2013					30.79	--	--	1321.34
	10/23/2013					30.78	--	--	1321.35
	10/31/2013					30.80	--	--	1321.33
	11/6/2013					30.33	--	--	1321.80
	11/13/2013					30.01	--	--	1322.12
	11/20/2013					29.63	--	--	1322.50
	11/26/2013					29.71	--	--	1322.42
	12/3/2013					29.52	--	--	1322.61
	12/11/2013					29.71	--	--	1322.42
	12/19/2013					28.51	--	--	1323.62
	12/27/2013					29.97	--	--	1322.16
	1/3/2014					NM	--	--	NM
	1/10/2014					29.91	--	--	1322.22
	1/16/2014					29.70	--	--	1322.43
	1/21/2014					29.89	--	--	1322.24
	1/27/2014					29.60	--	--	1322.53
	2/5/2014					NM	--	--	NM
	2/12/2014					NM	--	--	NM
	2/19/2014					29.41	--	--	1322.72
	2/26/2014					29.68	--	--	1322.45
	3/4/2014					NM	--	--	NM
	3/13/2014					28.71	--	--	1323.42
	3/18/2014					29.50	--	--	1322.63
	3/27/2014					29.62	--	--	1322.51

Please refer to notes at end of table.

Table B-1
Groundwater Gauging Data
Andover Colt Court Release Site
Andover, Kansas

Well ID	Measurement Date	Casing Diameter (inches)	Top of Casing Elevation (feet)[1]	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs)	Depth to SPH (feet)	SPH Thickness (feet)	Groundwater Elevation (feet MSL)
									Pond Stage (feet MSL)
Stormwater Pond	8/8/2013	NA	NA	NA	NA	NA	NA	NA	1344.75
	8/13/2013								1344.75
	8/21/2013								1344.50
	8/28/2013								1344.25
	9/5/2013								1344.25
	9/11/2013								1344.00
	9/17/2013								1344.00
	9/23/2013								1344.50
	10/3/2013								1344.50
	10/10/2013								1344.50
	10/17/2013								1344.00
	10/23/2013								1344.50
	10/31/2013								1345.00
	11/6/2013								1344.75
	11/13/2013								1344.50
	11/20/2013								1344.40
	11/26/2013								1344.25
	12/3/2013								1344.25
	12/11/2013								1344.75
	12/19/2013								1344.25
	12/27/2013								1344.25
	1/3/2014								NM
	1/10/2014								1344.00
	1/16/2014								1344.00
	1/21/2014								1344.00
	1/27/2014								NM
	2/5/2014								NM
	2/12/2014								NM
	2/19/2014								NM
	2/26/2014								1344.00
	3/4/2014								NM
	3/13/2014								1343.90
	3/18/2014								1344.00
	3/27/2014								1343.75

Notes:

1. feet MSL = Feet above mean sea level (NAVD88).
2. bgs = below ground surface.
3. -- = No SPH
4. DRY = Well was dry.
5. Pond elevation is measured directly from a staff gauge on the pond (in 0.25-foot increments). The top of the staff gauge is 1347.59 feet above mean sea level.
6. NA = Not applicable.
7. NM = Not measured.

Table B-2
Separate- and Dissolved-Phase Recovery Data - 2006 N. Colt Court
Andover Colt Court Release Site
Andover, Kansas

Well	Date	Depth to Groundwater (feet bgs)	Depth to Product (feet)	Product Thickness (feet)	SPH Recovered (gallons)	Water Recovered (gallons)	Total Gallons Recovered	Fluid Removal Technology
Irrigation Well - 2006 N. Colt Court	6/14/2012	NM	NM	NM	20	NM	NM	Mobile vacuum truck
	6/15/2012	NM	NM	NM	20	NM	NM	Mobile vacuum truck
	6/28/2012	NM	NM	NM	10	0	10	Hand bailer
	7/2/2012	NM	NM	NM	10	0	10	Hand bailer
	7/3/2012	NM	NM	NM	5	0	5	Hand bailer
	7/5/2012	NM	NM	NM	8	0	8	Hand bailer
	7/5/2012	NM	NM	NM	5	NM	NM	Mobile vacuum truck
	8/15/2012	NM	NM	NM	15	0	15	Hand bailer
	8/20/2012	NM	NM	NM	5	0	5	Hand bailer
	11/8/2012	NM	NM	NM	15	NM	NM	Hand bailer
	11/15/2012	NM	NM	NM	15	0	15	Hand bailer
	11/21/2012	NM	NM	NM	15	0	15	Hand bailer
	11/30/2012	NM	NM	NM	7	0	15	Hand bailer
	12/7/2012	NM	NM	NM	4	4	11	Hand bailer
	12/14/2012	NM	NM	NM	2	2	6	Hand bailer
	12/21/2012	NM	NM	NM	2	2	4	Hand bailer
	12/28/2012	NM	NM	NM	1.5	2	4	Hand bailer
	1/4/2013	NM	NM	NM	1	1	2.5	Hand bailer
	1/17/2013	NM	NM	NM	1.5	2	3	Hand bailer
	2/1/2013	NM	NM	NM	2	1.5	3	Hand bailer
	2/13/2013	NM	NM	NM	3	1.5	3.5	Hand bailer
	3/15/2013	NM	NM	NM	10	1	4	Hand bailer
	3/20/2013	NM	NM	NM	5	0	10	Hand bailer
	4/5/2013	NM	NM	NM	8	1	6	Hand bailer
	4/12/2013	NM	NM	NM	1	4	4	Hand bailer
	4/25/2013	NM	NM	NM	4	2	3	Hand bailer
	5/10/2013	NM	NM	NM	9	2	6	Hand bailer
	5/17/2013	NM	NM	NM	4	1	8	Hand bailer
	5/21/2013	NM	NM	NM	1	2	6	Hand bailer

Please refer to notes at end of table.

Table B-2
Separate- and Dissolved-Phase Recovery Data - 2006 N. Colt Court
Andover Colt Court Release Site
Andover, Kansas

Well	Date	Depth to Groundwater (feet bgs)	Depth to Product (feet)	Product Thickness (feet)	SPH Recovered (gallons)	Water Recovered (gallons)	Total Gallons Recovered	Fluid Removal Technology
Irrigation Well - 2006 N. Colt Court	6/5/2013	NM	NM	NM	1	2	3	Hand bailer
	6/12/2013	42.19	41.38	0.81	8	1	2	Mobile vacuum truck and hand bailing
	6/21/2013	43.73	43.40	0.33	4	NM	NM	Mobile vacuum truck
	6/26/2013	43.59	43.16	0.43	2.5	NM	NM	Mobile vacuum truck
	7/2/2013	49.31	49.01	0.30	1.5	NM	NM	Mobile vacuum truck
	7/12/2013	55.11	54.82	0.29	2	NM	NM	Mobile vacuum truck
	7/17/2013	55.10	54.88	0.22	4	NM	NM	Mobile vacuum truck
	8/1/2013	46.35	46.15	0.20	2	NM	NM	Mobile vacuum truck
	8/8/2013	41.49	--	0.00	0	NM	NM	Mobile vacuum truck
	8/13/2013	39.10	--	0.00	0	NM	NM	Mobile vacuum truck
	8/20/2013	37.40	--	0.00	0	NM	NM	Mobile vacuum truck
	8/28/2013	43.81	--	0.00	0	NM	NM	Mobile vacuum truck
	9/5/2013	47.86	--	0.00	0	NM	NM	Mobile vacuum truck
	9/11/2013	50.61	--	0.00	0	NM	NM	Mobile vacuum truck
	9/17/2013	49.06	--	0.00	0	NM	NM	Mobile vacuum truck
	9/23/2013	48.97	--	0.00	0	NM	NM	Mobile vacuum truck
	9/30/2013	48.63	--	0.00	0	NM	NM	Mobile vacuum truck
	10/10/2013	49.16	49.01	0.15	1	NM	NM	Mobile vacuum truck
	10/17/2013	48.40	--	0.00	0	NM	NM	Mobile vacuum truck
	10/24/2013	48.71	--	0.00	0	NM	NM	Mobile vacuum truck
	10/31/2013	44.86	--	0.00	0	NM	NM	Mobile vacuum truck
	11/6/2013	43.66	--	0.00	0	NM	NM	Mobile vacuum truck
	11/13/2013	41.82	--	0.00	0	NM	NM	Mobile vacuum truck
	11/20/2013	40.60	--	0.00	0	NM	NM	Mobile vacuum truck
	11/26/2013	40.30	40.19	0.11	1	NM	NM	Mobile vacuum truck
	12/3/2013	39.44	sheen	0.00	0	NM	NM	Mobile vacuum truck
	12/11/2013	39.63	sheen	0.00	0	NM	NM	Mobile vacuum truck
	12/19/2013	39.23	--	0.00	0	NM	NM	Mobile vacuum truck
	12/27/2013	39.38	39.34	0.04	1	NM	NM	Mobile vacuum truck

Please refer to notes at end of table.

Table B-2
Separate- and Dissolved-Phase Recovery Data - 2006 N. Colt Court
Andover Colt Court Release Site
Andover, Kansas

Well	Date	Depth to Groundwater (feet bgs)	Depth to Product (feet)	Product Thickness (feet)	SPH Recovered (gallons)	Water Recovered (gallons)	Total Gallons Recovered	Fluid Removal Technology
Irrigation Well - 2006 N. Colt Court	1/3/2014	NM	NM	NM	--	NM	NM	Mobile vacuum truck
	1/10/2014	39.89	--	0.00	0	NM	NM	Mobile vacuum truck
	1/16/2014	39.83	--	0.00	0	NM	NM	Mobile vacuum truck
	1/21/2014	39.34	--	0.00	0	NM	NM	Mobile vacuum truck
	1/30/2014	38.85	--	0.00	0	NM	NM	Mobile vacuum truck
	2/12/2014	39.44	39.43	0.01	0	NM	NM	Mobile vacuum truck
	2/19/2014	39.37	39.36	0.01	0	NM	NM	Mobile vacuum truck
	2/26/2014	39.64	39.60	0.04	0	NM	NM	Mobile vacuum truck
	3/4/2014	39.76	39.73	0.03	0	NM	NM	Mobile vacuum truck
	3/13/2014	39.89	39.86	0.03	0	NM	NM	Mobile vacuum truck
	3/18/2014	39.65	39.61	0.04	0	NM	NM	Mobile vacuum truck
	3/27/2014	39.73	39.69	0.04	0	NM	NM	Mobile vacuum truck

Notes

1. The SPH volume removed using vacuum technology was calculated by measuring the SPH thicknesses in the well before and after each event. The volume of SPH removed is approximate.
2. SPH = Separate-phase hydrocarbons.
3. NM = Not measured.
4. -- = No SPH.
5. Depth to water and depth to product were not measured on 1/3/2014 due to equipment malfunction.
6. An SPH removal event was not performed on 2/5/14 due to severe weather.

Appendix C

Laboratory Analytical Report

Appendix C — Laboratory Analytical Reports and Quality Assurance/Quality Control Results Summary

1.0 Introduction

This appendix documents the results of a quality assurance (QA) review of the analytical data for groundwater samples that were collected during groundwater monitoring activities that were performed in January and February 2013 at the Quail Crossing neighborhood (the Neighborhood) in Andover, Kansas (Site).

The data reviewed herein include data associated with: (1) groundwater samples collected from monitoring wells during the period January 28 through 30, 2014; (2) groundwater samples collected from Neighborhood irrigation wells during the period January 29 through 31 and on February 20, 2014. The groundwater samples were analyzed by ALS Environmental (ALS) of Houston, Texas.

The QA review outlines the applicable quality control criteria utilized during the data review process, as well as any deviations from those criteria. Examination and validation of the laboratory summary reports includes:

- Analytical methods;
- Reporting limits;
- Detection limits and estimated concentrations;
- Sample holding times;
- Custody records and sample receipt;
- Spikes, blanks, and surrogates; and
- Duplicates.

The QA review did not include a review of calibration or raw data. Section 2.0 lists the analytical methods used in sample analysis. Section 3.0 defines the QA terms used in this report. Section 4.0 provides the QA results for each sampling event.

2.0 Analytical Methods

2.1 Groundwater Analyses

Chemical analyses performed on soil and groundwater samples consisted of the following:

- Volatile petroleum hydrocarbons as gasoline (GRO) by IA OA-1; and

- 1,2,4-Trimethylbenzene, 1,2-dichloroethane, 1,3,5-trimethylbenzene, 2-butanone, cyclohexane, isopropylbenzene methylcyclohexane BTEX (benzene, toluene, ethylbenzene, total xylenes), naphthalene, n-butylbenzene, n-propylbenzene by U.S. Environmental Protection Agency (EPA) Method SW846 8260.

3.0 Quality Assurance Objectives and Review Procedures

The general QA objectives for this project were to develop and implement procedures for obtaining, evaluating, and confirming the usability of environmental data of a specified quality. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken chain-of-custody (COC) procedures.

Reporting limits and analytical results were compared to action levels for each parameter in each media of concern. Precision, accuracy, representativeness, completeness, and comparability parameters used to indicate data quality are defined below.

Reporting Limits. Method reporting limits (MRLs) are set by the laboratory and are based on instrumentation abilities, sample matrix, and suggested MRLs by the EPA or KDHE. In some cases, the MRLs are raised due to high concentrations of analytes in the samples or matrix interferences. MRLs are generally consistent with industry standards and below promulgated regulatory standards when possible.

Detection Limits and Estimated Concentrations. The method detection limit (MDL) is the lowest quantity of a substance that can be distinguished from the absence of that substance within a stated confidence limit. The MDL is estimated from the mean of the blank, the standard deviation of the blank and some confidence factor.

Holding Times. Holding times are the length of time a sample can be stored after collection and prior to analysis without significantly affecting the analytical results. Holding times vary by analyte, sample matrix, and analytical methodology.

Custody Records and Sample Receipt. COC refers to the document or paper trail showing the collection, custody, control, transfer, analysis, and disposition of physical materials. The sample receipt identifies the condition of samples upon arrival at the analytical laboratory.

Method Blanks. A method, or laboratory, blank is a sample prepared in the laboratory along with the field samples and analyzed for the same parameters at the same time. It is used to assess for laboratory introduced contamination.

Laboratory Control Sample. A laboratory control sample (LCS) is analyzed by the laboratory to assess the accuracy of the analytical equipment. The sample is prepared from an analyte-free matrix that is then spiked with known levels of the constituents of interest (i.e., a standard). The concentrations are measured and the results compared to the known spiked levels. This comparison is expressed as percent recovery.

Laboratory Control Sample Duplicate. A laboratory control sample duplicate [LCSD]) is prepared and analyzed along with the LCS. The LCS and LCSD data are compared to assess the precision of the analytical method (i.e., the relative percent difference [RPD]).

Matrix Spike Analyses. Matrix spike (MS) analyses are performed on samples submitted to the laboratory that are of the same matrix as the field sample. The MS sample is spiked with known levels of the constituents of interest and analyzed to assess the potential for matrix interference with recovery or detection of the constituents of interest and the accuracy of the determination. The spiked sample results are compared to the expected result (i.e., sample concentration plus spike amount) and reported as percent recovery.

Lab Duplicate. A laboratory duplicate is a second analysis of a QA/QC sample, which serves as an internal check on laboratory quality as well as potential variability of the sample matrix. The laboratory duplicate is analyzed and compared to the primary sample results to assess the precision of the analytical method. This comparison can be expressed by the RPD between the primary and duplicate samples.

Surrogate Recovery. Surrogates are organic compounds that are similar in chemical composition to the analytes of interest and spiked into environmental and batch QC samples prior to sample preparation and analysis. Surrogate recoveries for environmental samples are used to evaluate matrix interference on a sample-specific basis.

Field Duplicate. A field duplicate is a second field sample collected from a sampling location (e.g.., a well or soil core). Field duplicate samples serve as a check on laboratory quality as well as potential variability of the sample matrix. The field duplicate is analyzed and compared to the primary sample to assess the precision of the analytical method. This comparison can be expressed by the RPD between the original and duplicate samples.

Trip Blanks. A trip blank is a sample prepared in the laboratory that is shipped along with the sample bottles to the field, kept with the soil and groundwater samples during collection, and shipped back to the

laboratory with the field samples. The trip blank is analyzed for constituents of interest, along with the primary samples, to assess if detected contaminants may have been the result of contamination of the samples during transport or storage.

Equipment Blank. An equipment blank is a sample collected in the field along with the primary samples and analyzed for the same parameters. Equipment blanks are collected by pouring deionized water over or through decontaminated equipment used to collect the samples, into laboratory supplied containers. The equipment blank is used to assess if field samples may have been affected by inadequate decontamination of field equipment.

4.0 QA/QC Review Results

4.1 Groundwater Lab Report 14011216

The data reviewed includes groundwater samples collected from monitoring wells on January 28 through 30, 2014. Samples were analyzed for GRO and VOCs using the methods listed in Section 2.1.

Reporting Limits. MRLs were not elevated for samples. No data are flagged.

Detection Limits and Estimated Concentrations. MDLs and concentrations were not reported as estimates.

Holding Times. The samples were analyzed within all applicable holding times.

Custody Records and Sample Receipt. The samples were received below the required temperature of 4°C and consistent with the accompanying COC.

Method Blanks. No compounds were detected in the method blanks. No data are flagged.

Laboratory Control Sample. Percent recoveries of the LCS were within control limits.

Laboratory Control Sample Duplicate. Percent recoveries of the LCSD were within control limits. LCS/LCSD RPDs were within control limits for reported constituents.

Matrix Spike Analyses. The MS/MSD performed on sample MW-1 was outside control limits for cyclohexane and naphthalene; however, the associated LCS recovery was within control limits, providing quality control for the batch.

Lab Duplicate. No lab duplicate was analyzed.

Surrogate Recovery. Surrogate recoveries were within control limits for samples.

Field Duplicate. Two field duplicates were analyzed in samples collected from wells MW-8 and MW-16. Constituents were not detected in the primary and field duplicate samples for MW-16. Constituents detected in the primary and duplicate collected from well MW-8 were within acceptable RPDs.

Trip Blank. Trip blanks were not analyzed. Target compounds were not detected in several primary samples, which act as trip blanks.

Equipment Blank. No reusable equipment was utilized during this sampling event; therefore, an equipment blank was not collected.

Conclusion. In conclusion, the overall QA objectives have been met, and the data are of adequate quality for use in this project.

4.2 Groundwater Lab Report 1402040

The data reviewed includes groundwater sample data collected from irrigation wells on January 29 through 31, 2014. Samples were analyzed for GRO and VOCs using the methods listed in Section 2.1.

Reporting Limits. MRLs were not elevated for samples. No data are flagged.

Detection Limits and Estimated Concentrations. MDLs and concentrations were not reported as estimates.

Holding Times. The samples were analyzed within all applicable holding times.

Custody Records and Sample Receipt. The samples were received within the required temperature limit of 4°C. The samples were consistent with the accompanying COC, with the following exception: several sample ID's on the container labels and the chain of custody were not identical (i.e., 1910 Quail Crossing versus 1910 N Quail Crossing); the sample ID's were corrected.

Method Blanks. No compounds were detected in the method blanks. No data are flagged.

Laboratory Control Sample. Percent recoveries of the LCS were within control limits.

Laboratory Control Sample Duplicate. Percent recoveries of the LCSD were within control limits. LCS/LCSD RPDs were within control limits for reported constituents.

Matrix Spike Analyses. The MS/MSD performed on sample 2005 N Colt Ct was outside control limits for 1,2,4-Trimethylbenzene; however, the associated LCS recovery was within control limits, providing quality control for the batch.

Lab Duplicate. No lab duplicate was analyzed.

Surrogate Recovery. Surrogate recoveries were within control limits for samples.

Field Duplicate. No field duplicate was analyzed; two field duplicates were analyzed from the monitoring well samples collected at the site during the same time period. RPDs in the primary and duplicate samples were within acceptable ranges.

Trip Blank. Trip blanks were not analyzed. Target compounds were not detected in several primary samples, which act as trip blanks.

Equipment Blank. No reusable equipment was utilized during this sampling event; therefore, an equipment blank was not collected.

Conclusion. In conclusion, the overall QA objectives have been met, and the data are of adequate quality for use in this project.

4.3 Groundwater Lab Report 14021040

The data reviewed includes groundwater sample data collected during sampling performed on February 20, 2014. Samples were analyzed for GRO and VOCs using the methods listed in Section 2.2.

Reporting Limits. MRLs were not elevated for samples. No data are flagged.

Detection Limits and Estimated Concentrations. MDLs and concentrations were not reported as estimates.

Holding Times. The samples were analyzed within all applicable holding times.

Custody Records and Sample Receipt. The samples were received below the required temperature of 4°C and consistent with the accompanying COC.

Appendix C — Laboratory Analytical Reports and Quality Assurance/Quality Control Results Summary

Method Blanks. No compounds were detected in the method blanks. No data are flagged.

Laboratory Control Sample. Percent recoveries of the LCS were within control limits.

Laboratory Control Sample Duplicate. Percent recoveries of the LCSD were within control limits. LCS/LCSD RPDs were within control limits for reported constituents.

Matrix Spike Analyses. The MS and MS duplicates (MSD) were analyzed on an unrelated sample and recovered within control limits.

Lab Duplicate. No lab duplicate was analyzed.

Surrogate Recovery. Surrogate recoveries were within control limits for samples.

Field Duplicate. No field duplicate was collected.

Trip Blank. A trip blank was analyzed; target compounds were not detected in the trip blank.

Equipment Blank. No reusable equipment was utilized during this sampling event; therefore, an equipment blank was not collected.

Conclusion. In conclusion, the overall QA objectives have been met, and the data are of adequate quality for use in this project.

06-Feb-2014

Samuel Jackson
Apex Companies
3015 SW First Avenue
Portland, OR 97201

Tel: (503) 924-4704
Fax:

Re: Andover Release Site E3CE-0065 Work Order: **1402040**

Dear Samuel,

ALS Environmental received 16 samples on 03-Feb-2014 09:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 31.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Electronically approved by: Jumoke M. Lawal

Joni S. Blankfield
Project Manager

Certificate No: T104704231-13-12

ALS Environmental

Date: 06-Feb-14

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Work Order: **1402040**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1402040-01	HOA-1	Groundwater		1/29/2014 12:15	2/3/2014 09:45	☐
1402040-02	2019 N Ruger Cir	Groundwater		1/29/2014 12:40	2/3/2014 09:45	☐
1402040-03	2021 N Ruger Cir	Groundwater		1/29/2014 12:55	2/3/2014 09:45	☐
1402040-04	2032 N Ruger Cir	Groundwater		1/29/2014 13:10	2/3/2014 09:45	☐
1402040-05	2009 N Mountain Ct	Groundwater		1/29/2014 13:20	2/3/2014 09:45	☐
1402040-06	1910 N Quail Crossing	Groundwater		1/29/2014 13:55	2/3/2014 09:45	☐
1402040-07	HOA-2	Groundwater		1/29/2014 13:40	2/3/2014 09:45	☐
1402040-08	2028 N Ruger Cir	Groundwater		1/30/2014 13:00	2/3/2014 09:45	☐
1402040-09	1211 W Quail Crossing Ct	Groundwater		1/31/2014 09:05	2/3/2014 09:45	☐
1402040-10	2005 N Colt Ct	Groundwater		1/31/2014 13:25	2/3/2014 09:45	☐
1402040-11	2025 N Ruger Cir	Groundwater		1/31/2014 13:15	2/3/2014 09:45	☐
1402040-12	2002 N Colt Ct	Groundwater		1/31/2014 13:35	2/3/2014 09:45	☐
1402040-13	2007 N Mountain Ct	Groundwater		1/31/2014 13:45	2/3/2014 09:45	☐
1402040-14	1009 W Mountain	Groundwater		1/31/2014 14:00	2/3/2014 09:45	☐
1402040-15	Trip Blank 010814-47	Water		1/31/2014	2/3/2014 09:45	☑
1402040-16	Trip Blank 010814-46	Water		1/31/2014	2/3/2014 09:45	☑

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Work Order: 1402040

Case Narrative

Two Trip Blank's were received but not listed on the chain of custody; the trip blanks were placed on hold. The client was notified by email on February 3, 2014.

Per client email on February 4, 2014, several sample ID's were changed. Please refer to attached email.

Batch R160972, Volatile Organics by Method 8260, Sample 2005 N Colt Ct: MSD recovery for 1,2,4-Trimethylbenzene was above control limits. The associated LCS recovery was within control limits.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Work Order: 1402040
Sample ID: HOA-1
Lab ID: 1402040-01
Collection Date: 1/29/2014 12:15 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 01:25 PM
Surr: 4-Bromofluorobenzene	*108*		*70-130*	*%REC*	1	2/4/2014 01:25 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 02:36 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 02:36 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 02:36 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 02:36 AM
Surr: 1,2-Dichloroethane-d4	*103*		*71-125*	*%REC*	1	2/6/2014 02:36 AM
Surr: 4-Bromofluorobenzene	*97.5*		*70-125*	*%REC*	1	2/6/2014 02:36 AM
Surr: Dibromofluoromethane	*96.2*		*74-125*	*%REC*	1	2/6/2014 02:36 AM
Surr: Toluene-d8	*100*		*75-125*	*%REC*	1	2/6/2014 02:36 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Sample ID: 2019 N Ruger Cir
Collection Date: 1/29/2014 12:40 PM

Work Order: 1402040
Lab ID: 1402040-02
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 02:37 PM
Surr: 4-Bromofluorobenzene	*107*		*70-130*	*%REC*	1	2/4/2014 02:37 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 03:01 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 03:01 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 03:01 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 03:01 AM
Surr: 1,2-Dichloroethane-d4	*103*		*71-125*	*%REC*	1	2/6/2014 03:01 AM
Surr: 4-Bromofluorobenzene	*98.7*		*70-125*	*%REC*	1	2/6/2014 03:01 AM
Surr: Dibromofluoromethane	*99.7*		*74-125*	*%REC*	1	2/6/2014 03:01 AM
Surr: Toluene-d8	*98.4*		*75-125*	*%REC*	1	2/6/2014 03:01 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Sample ID: 2021 N Ruger Cir
Collection Date: 1/29/2014 12:55 PM

Work Order: 1402040
Lab ID: 1402040-03
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 02:55 PM
Surr: 4-Bromofluorobenzene	*105*		*70-130*	*%REC*	1	2/4/2014 02:55 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 03:26 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 03:26 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 03:26 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 03:26 AM
Surr: 1,2-Dichloroethane-d4	*102*		*71-125*	*%REC*	1	2/6/2014 03:26 AM
Surr: 4-Bromofluorobenzene	*97.5*		*70-125*	*%REC*	1	2/6/2014 03:26 AM
Surr: Dibromofluoromethane	*97.2*		*74-125*	*%REC*	1	2/6/2014 03:26 AM
Surr: Toluene-d8	*99.3*		*75-125*	*%REC*	1	2/6/2014 03:26 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Sample ID: 2032 N Ruger Cir
Collection Date: 1/29/2014 01:10 PM

Work Order: 1402040
Lab ID: 1402040-04
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 03:13 PM
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	1	2/4/2014 03:13 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 03:50 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 03:50 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 03:50 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 03:50 AM
Surr: 1,2-Dichloroethane-d4	*104*		*71-125*	*%REC*	1	2/6/2014 03:50 AM
Surr: 4-Bromofluorobenzene	*98.6*		*70-125*	*%REC*	1	2/6/2014 03:50 AM
Surr: Dibromofluoromethane	*98.3*		*74-125*	*%REC*	1	2/6/2014 03:50 AM
Surr: Toluene-d8	*99.5*		*75-125*	*%REC*	1	2/6/2014 03:50 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Sample ID: 2009 N Mountain Ct
Collection Date: 1/29/2014 01:20 PM

Work Order: 1402040
Lab ID: 1402040-05
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 03:31 PM
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	1	2/4/2014 03:31 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 04:15 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 04:15 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 04:15 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 04:15 AM
Surr: 1,2-Dichloroethane-d4	*102*		*71-125*	*%REC*	1	2/6/2014 04:15 AM
Surr: 4-Bromofluorobenzene	*97.0*		*70-125*	*%REC*	1	2/6/2014 04:15 AM
Surr: Dibromofluoromethane	*98.9*		*74-125*	*%REC*	1	2/6/2014 04:15 AM
Surr: Toluene-d8	*98.7*		*75-125*	*%REC*	1	2/6/2014 04:15 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Sample ID: 1910 N Quail Crossing
Collection Date: 1/29/2014 01:55 PM

Work Order: 1402040
Lab ID: 1402040-06
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 03:49 PM
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	1	2/4/2014 03:49 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 04:40 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 04:40 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 04:40 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 04:40 AM
Surr: 1,2-Dichloroethane-d4	*103*		*71-125*	*%REC*	1	2/6/2014 04:40 AM
Surr: 4-Bromofluorobenzene	*96.5*		*70-125*	*%REC*	1	2/6/2014 04:40 AM
Surr: Dibromofluoromethane	*96.6*		*74-125*	*%REC*	1	2/6/2014 04:40 AM
Surr: Toluene-d8	*98.3*		*75-125*	*%REC*	1	2/6/2014 04:40 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Work Order: 1402040
Sample ID: HOA-2
Lab ID: 1402040-07
Collection Date: 1/29/2014 01:40 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 04:07 PM
Surr: 4-Bromofluorobenzene	*105*		*70-130*	*%REC*	1	2/4/2014 04:07 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 05:05 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 05:05 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 05:05 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 05:05 AM
Surr: 1,2-Dichloroethane-d4	*105*		*71-125*	*%REC*	1	2/6/2014 05:05 AM
Surr: 4-Bromofluorobenzene	*96.8*		*70-125*	*%REC*	1	2/6/2014 05:05 AM
Surr: Dibromofluoromethane	*97.6*		*74-125*	*%REC*	1	2/6/2014 05:05 AM
Surr: Toluene-d8	*99.2*		*75-125*	*%REC*	1	2/6/2014 05:05 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Sample ID: 2028 N Ruger Cir
Collection Date: 1/30/2014 01:00 PM

Work Order: 1402040
Lab ID: 1402040-08
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 04:26 PM
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	1	2/4/2014 04:26 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 05:29 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 05:29 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 05:29 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 05:29 AM
Surr: 1,2-Dichloroethane-d4	*103*		*71-125*	*%REC*	1	2/6/2014 05:29 AM
Surr: 4-Bromofluorobenzene	*96.7*		*70-125*	*%REC*	1	2/6/2014 05:29 AM
Surr: Dibromofluoromethane	*97.5*		*74-125*	*%REC*	1	2/6/2014 05:29 AM
Surr: Toluene-d8	*98.0*		*75-125*	*%REC*	1	2/6/2014 05:29 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Work Order: 1402040
Sample ID: 1211 W Quail Crossing Ct
Lab ID: 1402040-09
Collection Date: 1/31/2014 09:05 AM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 04:44 PM
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	1	2/4/2014 04:44 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 05:54 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 05:54 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 05:54 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 05:54 AM
Surr: 1,2-Dichloroethane-d4	*102*		*71-125*	*%REC*	1	2/6/2014 05:54 AM
Surr: 4-Bromofluorobenzene	*95.6*		*70-125*	*%REC*	1	2/6/2014 05:54 AM
Surr: Dibromofluoromethane	*97.6*		*74-125*	*%REC*	1	2/6/2014 05:54 AM
Surr: Toluene-d8	*98.3*		*75-125*	*%REC*	1	2/6/2014 05:54 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Work Order: 1402040
Sample ID: 2005 N Colt Ct
Lab ID: 1402040-10
Collection Date: 1/31/2014 01:25 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	**3.7**		**0.050**	**mg/L**	1	2/4/2014 05:02 PM
Surr: 4-Bromofluorobenzene	*108*		*70-130*	*%REC*	1	2/4/2014 05:02 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	**0.13**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
1,2-Dichloroethane	**0.0041**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
1,3,5-Trimethylbenzene	**0.029**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 12:57 AM
Benzene	**0.15**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
Cyclohexane	**0.070**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
Ethylbenzene	**0.17**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
Isopropylbenzene	**0.0057**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
m,p-Xylene	**0.26**		**0.0020**	**mg/L**	1	2/6/2014 12:57 AM
Methylcyclohexane	**0.010**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
Naphthalene	**0.017**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
n-Butylbenzene	**0.0034**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
n-Propylbenzene	**0.018**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
o-Xylene	**0.14**		**0.0010**	**mg/L**	1	2/6/2014 12:57 AM
Toluene	**0.33**		**0.010**	**mg/L**	10	2/6/2014 02:11 AM
Xylenes, Total	**0.40**		**0.0030**	**mg/L**	1	2/6/2014 12:57 AM
Surr: 1,2-Dichloroethane-d4	*103*		*71-125*	*%REC*	1	2/6/2014 12:57 AM
Surr: 1,2-Dichloroethane-d4	*105*		*71-125*	*%REC*	10	2/6/2014 02:11 AM
Surr: 4-Bromofluorobenzene	*101*		*70-125*	*%REC*	1	2/6/2014 12:57 AM
Surr: 4-Bromofluorobenzene	*98.5*		*70-125*	*%REC*	10	2/6/2014 02:11 AM
Surr: Dibromofluoromethane	*99.8*		*74-125*	*%REC*	1	2/6/2014 12:57 AM
Surr: Dibromofluoromethane	*99.1*		*74-125*	*%REC*	10	2/6/2014 02:11 AM
Surr: Toluene-d8	*99.1*		*75-125*	*%REC*	1	2/6/2014 12:57 AM
Surr: Toluene-d8	*97.0*		*75-125*	*%REC*	10	2/6/2014 02:11 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Sample ID: 2025 N Ruger Cir
Collection Date: 1/31/2014 01:15 PM

Work Order: 1402040
Lab ID: 1402040-11
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 05:38 PM
Surr: 4-Bromofluorobenzene	*105*		*70-130*	*%REC*	1	2/4/2014 05:38 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 06:19 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 06:19 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 06:19 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 06:19 AM
Surr: 1,2-Dichloroethane-d4	*105*		*71-125*	*%REC*	1	2/6/2014 06:19 AM
Surr: 4-Bromofluorobenzene	*97.9*		*70-125*	*%REC*	1	2/6/2014 06:19 AM
Surr: Dibromofluoromethane	*99.3*		*74-125*	*%REC*	1	2/6/2014 06:19 AM
Surr: Toluene-d8	*99.3*		*75-125*	*%REC*	1	2/6/2014 06:19 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Sample ID: 2002 N Colt Ct
Collection Date: 1/31/2014 01:35 PM

Work Order: 1402040
Lab ID: 1402040-12
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 05:56 PM
Surr: 4-Bromofluorobenzene	*105*		*70-130*	*%REC*	1	2/4/2014 05:56 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 06:44 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 06:44 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 06:44 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 06:44 AM
Surr: 1,2-Dichloroethane-d4	*104*		*71-125*	*%REC*	1	2/6/2014 06:44 AM
Surr: 4-Bromofluorobenzene	*98.6*		*70-125*	*%REC*	1	2/6/2014 06:44 AM
Surr: Dibromofluoromethane	*99.2*		*74-125*	*%REC*	1	2/6/2014 06:44 AM
Surr: Toluene-d8	*101*		*75-125*	*%REC*	1	2/6/2014 06:44 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Sample ID: 2007 N Mountain Ct
Collection Date: 1/31/2014 01:45 PM

Work Order: 1402040
Lab ID: 1402040-13
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 06:14 PM
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	1	2/4/2014 06:14 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 07:08 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 07:08 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 07:08 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 07:08 AM
Surr: 1,2-Dichloroethane-d4	*104*		*71-125*	*%REC*	1	2/6/2014 07:08 AM
Surr: 4-Bromofluorobenzene	*97.1*		*70-125*	*%REC*	1	2/6/2014 07:08 AM
Surr: Dibromofluoromethane	*100*		*74-125*	*%REC*	1	2/6/2014 07:08 AM
Surr: Toluene-d8	*98.0*		*75-125*	*%REC*	1	2/6/2014 07:08 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Feb-14*

Client: Apex Companies
Project: Andover Release Site E3CE-0065
Work Order: 1402040
Sample ID: 1009 W Mountain
Lab ID: 1402040-14
Collection Date: 1/31/2014 02:00 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/4/2014 06:32 PM
Surr: 4-Bromofluorobenzene	*107*		*70-130*	*%REC*	1	2/4/2014 06:32 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
2-Butanone	ND		0.0020	mg/L	1	2/6/2014 07:33 AM
Benzene	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
Cyclohexane	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/6/2014 07:33 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
Naphthalene	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
o-Xylene	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
Toluene	ND		0.0010	mg/L	1	2/6/2014 07:33 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/6/2014 07:33 AM
Surr: 1,2-Dichloroethane-d4	*102*		*71-125*	*%REC*	1	2/6/2014 07:33 AM
Surr: 4-Bromofluorobenzene	*97.1*		*70-125*	*%REC*	1	2/6/2014 07:33 AM
Surr: Dibromofluoromethane	*98.2*		*74-125*	*%REC*	1	2/6/2014 07:33 AM
Surr: Toluene-d8	*101*		*75-125*	*%REC*	1	2/6/2014 07:33 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 1402040
Client: Apex Companies
Project: Andover Release Site E3CE-0065

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID R160891	**Test Name:** VPH - Iowa OA-1					
1402040-01B	HOA-1	Groundwater	1/29/2014 12:15:00 PM			2/4/2014 01:25 PM
1402040-02B	2019 N Ruger Cir		1/29/2014 12:40:00 PM			2/4/2014 02:37 PM
1402040-03B	2021 N Ruger Cir		1/29/2014 12:55:00 PM			2/4/2014 02:55 PM
1402040-04B	2032 N Ruger Cir		1/29/2014 1:10:00 PM			2/4/2014 03:13 PM
1402040-05B	2009 N Mountain Ct		1/29/2014 1:20:00 PM			2/4/2014 03:31 PM
1402040-06B	1910 N Quail Crossing		1/29/2014 1:55:00 PM			2/4/2014 03:49 PM
1402040-07B	HOA-2		1/29/2014 1:40:00 PM			2/4/2014 04:07 PM
1402040-08B	2028 N Ruger Cir		1/30/2014 1:00:00 PM			2/4/2014 04:26 PM
1402040-09B	1211 W Quail Crossing Ct		1/31/2014 9:05:00 AM			2/4/2014 04:44 PM
1402040-10B	2005 N Colt Ct		1/31/2014 1:25:00 PM			2/4/2014 05:02 PM
1402040-11B	2025 N Ruger Cir		1/31/2014 1:15:00 PM			2/4/2014 05:38 PM
1402040-12B	2002 N Colt Ct		1/31/2014 1:35:00 PM			2/4/2014 05:56 PM
1402040-13B	2007 N Mountain Ct		1/31/2014 1:45:00 PM			2/4/2014 06:14 PM
1402040-14B	1009 W Mountain		1/31/2014 2:00:00 PM			2/4/2014 06:32 PM

Work Order: 1402040
Client: Apex Companies
Project: Andover Release Site E3CE-0065

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID R160972	**Test Name:** Low Level Volatiles - SW8260C					
1402040-01A	HOA-1	Groundwater	1/29/2014 12:15:00 PM			2/6/2014 02:36 AM
1402040-02A	2019 N Ruger Cir		1/29/2014 12:40:00 PM			2/6/2014 03:01 AM
1402040-03A	2021 N Ruger Cir		1/29/2014 12:55:00 PM			2/6/2014 03:26 AM
1402040-04A	2032 N Ruger Cir		1/29/2014 1:10:00 PM			2/6/2014 03:50 AM
1402040-05A	2009 N Mountain Ct		1/29/2014 1:20:00 PM			2/6/2014 04:15 AM
1402040-06A	1910 N Quail Crossing		1/29/2014 1:55:00 PM			2/6/2014 04:40 AM
1402040-07A	HOA-2		1/29/2014 1:40:00 PM			2/6/2014 05:05 AM
1402040-08A	2028 N Ruger Cir		1/30/2014 1:00:00 PM			2/6/2014 05:29 AM
1402040-09A	1211 W Quail Crossing Ct		1/31/2014 9:05:00 AM			2/6/2014 05:54 AM
1402040-10A	2005 N Colt Ct		1/31/2014 1:25:00 PM			2/6/2014 12:57 AM
						2/6/2014 02:11 AM
1402040-11A	2025 N Ruger Cir		1/31/2014 1:15:00 PM			2/6/2014 06:19 AM
1402040-12A	2002 N Colt Ct		1/31/2014 1:35:00 PM			2/6/2014 06:44 AM
1402040-13A	2007 N Mountain Ct		1/31/2014 1:45:00 PM			2/6/2014 07:08 AM
1402040-14A	1009 W Mountain		1/31/2014 2:00:00 PM			2/6/2014 07:33 AM

ALS Environmental

Date: 06-Feb-14

Client: Apex Companies
Work Order: 1402040
Project: Andover Release Site E3CE-0065

QC BATCH REPORT

Batch ID: **R160891** Instrument ID **FID-9** Method: **IA OA-1**

MBLK Sample ID: **GBLKW1-140204-R160891** Units: **mg/L** Analysis Date: **2/4/2014 10:46 AM**

Client ID: Run ID: **FID-9_140204B** SeqNo: **3522269** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	ND	0.050								
Surr: 4-Bromofluorobenzene	0.1054	0.0050	*0.1*	*0*	*105*	*70-130*	*0*			

LCS Sample ID: **GLCSW1-140204-R160891** Units: **mg/L** Analysis Date: **2/4/2014 10:10 AM**

Client ID: Run ID: **FID-9_140204B** SeqNo: **3522268** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	0.954	0.050	1	0	95.4	70-130				
Surr: 4-Bromofluorobenzene	0.1096	0.0050	*0.1*	*0*	*110*	*70-130*	*0*			

MS Sample ID: **1402040-01BMS** Units: **mg/L** Analysis Date: **2/4/2014 01:43 PM**

Client ID: **HOA-1** Run ID: **FID-9_140204B** SeqNo: **3522271** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	0.9438	0.050	1	0.03873	90.5	70-130				
Surr: 4-Bromofluorobenzene	0.1098	0.0050	*0.1*	*0*	*110*	*70-130*	*0*			

MSD Sample ID: **1402040-01BMSD** Units: **mg/L** Analysis Date: **2/4/2014 02:01 PM**

Client ID: **HOA-1** Run ID: **FID-9_140204B** SeqNo: **3522272** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	0.9312	0.050	1	0.03873	89.3	70-130	0.9438	1.34	30	
Surr: 4-Bromofluorobenzene	0.1087	0.0050	*0.1*	*0*	*109*	*70-130*	*0.1098*	*1*	*30*	

The following samples were analyzed in this batch:

1402040-01B	1402040-02B	1402040-03B
1402040-04B	1402040-05B	1402040-06B
1402040-07B	1402040-08B	1402040-09B
1402040-10B	1402040-11B	1402040-12B
1402040-13B	1402040-14B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 1402040
Project: Andover Release Site E3CE-0065

QC BATCH REPORT

Batch ID: **R160972** Instrument ID **VOA4** Method: **SW8260**

MBLK Sample ID: **VBLKW-140205-R160972** Units: **µg/L** Analysis Date: **2/6/2014 12:32 AM**

Client ID: Run ID: **VOA4_140205A** SeqNo: **3524102** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
2-Butanone	ND	2.0								
Benzene	ND	1.0								
Cyclohexane	ND	1.0								
Ethylbenzene	ND	1.0								
Isopropylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
Methylcyclohexane	ND	1.0								
Naphthalene	ND	1.0								
n-Butylbenzene	ND	1.0								
n-Propylbenzene	ND	1.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 1,2-Dichloroethane-d4	51.71	1.0	*50*	*0*	*103*	*71-125*	*0*			
Surr: 4-Bromofluorobenzene	49.84	1.0	*50*	*0*	*99.7*	*70-125*	*0*			
Surr: Dibromofluoromethane	49.2	1.0	*50*	*0*	*98.4*	*74-125*	*0*			
Surr: Toluene-d8	49.41	1.0	*50*	*0*	*98.8*	*75-125*	*0*			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 1402040
Project: Andover Release Site E3CE-0065

QC BATCH REPORT

Batch ID: **R160972** Instrument ID **VOA4** Method: **SW8260**

LCS Sample ID: **VLCSW-140205-R160972** Units: **µg/L** Analysis Date: **2/5/2014 11:43 PM**

Client ID: Run ID: **VOA4_140205A** SeqNo: **3524101** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	52.64	1.0	50	0	105	80-120				
1,2-Dichloroethane	55.06	1.0	50	0	110	79-120				
1,3,5-Trimethylbenzene	51.78	1.0	50	0	104	80-120				
2-Butanone	108.1	2.0	100	0	108	60-140				
Benzene	51.45	1.0	50	0	103	80-120				
Cyclohexane	52.77	1.0	50	0	106	75-125				
Ethylbenzene	51.72	1.0	50	0	103	80-120				
Isopropylbenzene	53.9	1.0	50	0	108	80-120				
m,p-Xylene	105.6	2.0	100	0	106	80-120				
Methylcyclohexane	52.32	1.0	50	0	105	79-123				
Naphthalene	37.78	1.0	50	0	75.6	70-130				
n-Butylbenzene	51.67	1.0	50	0	103	75-125				
n-Propylbenzene	51.94	1.0	50	0	104	75-130				
o-Xylene	53.74	1.0	50	0	107	80-120				
Toluene	50.56	1.0	50	0	101	80-121				
Xylenes, Total	159.4	3.0	150	0	106	80-124				
Surr: 1,2-Dichloroethane-d4	52.24	1.0	*50*	*0*	*104*	*71-125*		*0*		
Surr: 4-Bromofluorobenzene	50.9	1.0	*50*	*0*	*102*	*70-125*		*0*		
Surr: Dibromofluoromethane	53.01	1.0	*50*	*0*	*106*	*74-125*		*0*		
Surr: Toluene-d8	49.44	1.0	*50*	*0*	*98.9*	*75-125*		*0*		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 1402040
Project: Andover Release Site E3CE-0065

QC BATCH REPORT

Batch ID: **R160972** Instrument ID **VOA4** Method: **SW8260**

MS Sample ID: **1402040-10AMS** Units: **µg/L** Analysis Date: **2/6/2014 01:22 AM**

Client ID: **2005 N Colt Ct** Run ID: **VOA4_140205A** SeqNo: **3524104** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	605.2	10	500	41.89	113	80-120				
1,2-Dichloroethane	512.9	10	500	0	103	79-120				
1,3,5-Trimethylbenzene	498.3	10	500	27.21	94.2	80-120				
2-Butanone	1022	20	1000	0	102	60-140				
Benzene	605.2	10	500	138	93.4	80-120				
Cyclohexane	541.7	10	500	71.4	94.1	75-125				
Ethylbenzene	625.8	10	500	159	93.4	80-120				
Isopropylbenzene	497.3	10	500	6.273	98.2	80-120				
m,p-Xylene	1184	20	1000	242.3	94.2	80-120				
Methylcyclohexane	480.6	10	500	11.61	93.8	79-123				
Naphthalene	374.9	10	500	0	75	70-130				
n-Butylbenzene	470.9	10	500	0	94.2	75-125				
n-Propylbenzene	496.6	10	500	17.28	95.9	75-130				
o-Xylene	619.8	10	500	133.3	97.3	80-120				
Toluene	785.7	10	500	333.4	90.4	80-121				
Xylenes, Total	1804	30	1500	375.6	95.2	80-124				
Surr: 1,2-Dichloroethane-d4	508.1	10	*500*	*0*	*102*	*71-125*		*0*		
Surr: 4-Bromofluorobenzene	508.2	10	*500*	*0*	*102*	*70-125*		*0*		
Surr: Dibromofluoromethane	507	10	*500*	*0*	*101*	*74-125*		*0*		
Surr: Toluene-d8	491.2	10	*500*	*0*	*98.2*	*75-125*		*0*		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 1402040
Project: Andover Release Site E3CE-0065

QC BATCH REPORT

Batch ID: **R160972** Instrument ID **VOA4** Method: **SW8260**

MSD Sample ID: **1402040-10AMSD** Units: **µg/L** Analysis Date: **2/6/2014 01:46 AM**

Client ID: **2005 N Colt Ct** Run ID: **VOA4_140205A** SeqNo: **3524105** Prep Date: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	649.7	10	500	41.89	122	80-120	605.2	7.09	20	S
1,2-Dichloroethane	561.8	10	500	0	112	79-120	512.9	9.1	20	
1,3,5-Trimethylbenzene	538.9	10	500	27.21	102	80-120	498.3	7.82	20	
2-Butanone	1135	20	1000	0	114	60-140	1022	10.5	20	
Benzene	667.1	10	500	138	106	80-120	605.2	9.74	20	
Cyclohexane	589.6	10	500	71.4	104	75-125	541.7	8.47	20	
Ethylbenzene	700.6	10	500	159	108	80-120	625.8	11.3	20	
Isopropylbenzene	547.4	10	500	6.273	108	80-120	497.3	9.59	20	
m,p-Xylene	1312	20	1000	242.3	107	80-120	1184	10.2	20	
Methylcyclohexane	530.1	10	500	11.61	104	79-123	480.6	9.79	20	
Naphthalene	407.3	10	500	0	81.5	70-130	374.9	8.28	20	
n-Butylbenzene	512.8	10	500	0	103	75-125	470.9	8.52	20	
n-Propylbenzene	531.7	10	500	17.28	103	75-130	496.6	6.82	20	
o-Xylene	688.2	10	500	133.3	111	80-120	619.8	10.5	20	
Toluene	865.6	10	500	333.4	106	80-121	785.7	9.68	20	
Xylenes, Total	2000	30	1500	375.6	108	80-124	1804	10.3	20	
Surr: 1,2-Dichloroethane-d4	512.8	10	*500*	*0*	*103*	*71-125*	*508.1*	*0.926*	*20*	
Surr: 4-Bromofluorobenzene	522.1	10	*500*	*0*	*104*	*70-125*	*508.2*	*2.69*	*20*	
Surr: Dibromofluoromethane	516.7	10	*500*	*0*	*103*	*74-125*	*507*	*1.89*	*20*	
Surr: Toluene-d8	499.8	10	*500*	*0*	*100*	*75-125*	*491.2*	*1.74*	*20*	

The following samples were analyzed in this batch:

1402040-01A	1402040-02A	1402040-03A
1402040-04A	1402040-05A	1402040-06A
1402040-07A	1402040-08A	1402040-09A
1402040-10A	1402040-11A	1402040-12A
1402040-13A	1402040-14A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 06-Feb-14

Client: Apex Companies
Project: Andover Release Site E3CE-0065
WorkOrder: **1402040**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental

Sample Receipt Checklist

Client Name: **APEX-PORTLAND** Date/Time Received: **03-Feb-14 09:45**

Work Order: **1402040** Received by: **LOT**

Checklist completed by Salvador A. Yanez (eSignature) 03-Feb-14 (Date) Reviewed by: Sonia West (eSignature) 03-Feb-14 (Date)

Matrices: Water
Carrier name: FedEx

	Yes	No	Not Present
Shipping container/cooler in good condition?	☑	☐	☐
Custody seals intact on shipping container/cooler?	☑	☐	☐
Custody seals intact on sample bottles?	☐	☐	☑
Chain of custody present?	☑	☐	
Chain of custody signed when relinquished and received?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s): 1.8c/1.8c c/u

Cooler(s)/Kit(s): 7035

Date/Time sample(s) sent to storage: 2/3/2014 13:07

	Yes	No	No VOA vials submitted
Water - VOA vials have zero headspace?	☑	☐	☐

	Yes	No	N/A
Water - pH acceptable upon receipt?	☐	☐	☑
pH adjusted?	☐	☐	☑

pH adjusted by: _

Login Notes: Trip Blanks were received but not on COC. These samples were logged in on hold.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental

Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 2

COC ID: 97839

1402040

APEX-PORTLAND: Apex Companies

Project: Andover Release Site

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Andover Release Site	A	VOCs (8260) Quail GW Investigation List
Work Order		Project Number	E3CE-0065	B	GRO - VPH OA-1
Company Name	Apex Companies	Bill To Company	Apex Companies	C	
Send Report To	Samuel Jackson	Invoice Attn	Samuel Jackson	D	
Address	3015 SW First Avenue	Address	3015 SW First Avenue	E	
				F	
City/State/Zip	Portland, OR 97201	City/State/Zip	Portland, OR 97201	G	
Phone	(503) 924-4704	Phone	(503) 924-4704	H	
Fax		Fax		I	
e-Mail Address	sjackson@apexcos.com	e-Mail Address	sjackson@apexcos.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	HOA-1	1/29/14	12:15	GW	HCl	6	X	X									
2	2019 N. Ruger Cir		12:40														
3	2021 N. Ruger Cir		12:55														
4	2032 N. Ruger Cir		13:10														
5	2009 N. Mountain Cir		13:20														
6	1910 N. Quail Crossing St.		13:55														
7	HOA-2		13:40														
8	2028 N. Ruger Cir	1/30/14	13:00														
9	1211 W. Quail Crossing	1/31/14	9:05														
10	2005 N. Colt Ct.	1/31/14	13:25														

Sampler(s) Please Print & Sign: Jim Harris

Shipment Method: FEDEX

Required Turnaround Time: (Check Box) ☑ Std 10 WK Days ☐ 5 WK Days ☒ Other 3 day TAT ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Jim Harris	1/31/14	17:45	
Relinquished by:	Date: 2/3/14	Time: 09:45	Received by (Laboratory):
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: Andover Quail Crossing Groundwater Investigation 1Q2014

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other / EDD
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Chain of Custody Form

Page 2 of 2

COC ID: 97835

ALS Project Manager: | ALS Work Order #: 1402040

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Andover Release Site	A	VOCs (8260) Quail GW Investigation List
Work Order		Project Number	E3CE-0065	B	GRO - VPH OA-1
Company Name	Apex Companies	Bill To Company	Apex Companies	C	
Send Report To	Samuel Jackson	Invoice Attn	Samuel Jackson	D	
Address	3015 SW First Avenue	Address	3015 SW First Avenue	E	
				F	
City/State/Zip	Portland, OR 97201	City/State/Zip	Portland, OR 97201	G	
Phone	(503) 924-4704	Phone	(503) 924-4704	H	
Fax		Fax		I	
e-Mail Address	sjackson@apexcos.com	e-Mail Address	sjackson@apexcos.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	2025 N. Ruger Ct.	1/31/14	13:15	GW	HCl	6	X	X									
2	2002 N. Colt Ct.	↓	13:35	↓	↓	↓	↓	↓									
3	2007 N. Mountain Ct.		13:45														
4	1009 W Mountain		14:00														
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Jace Harris [signature]

Shipment Method: FEDEX

Required Turnaround Time: (Check Box) ☑ Std 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☒ Other 3 day TAT

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
[signature]	1/31/14	17:45	
Relinquished by:	02/3/14	09:45	Received by (Laboratory): [signature]
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory): [signature]

Notes: Andover Quail Crossing Groundwater Investigation ~~1Q2014 GW Irrigation Wells~~

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other / EDD
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
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Sonia West

From: Joni Blankfield
Sent: Monday, February 03, 2014 6:32 PM
To: Sonia West
Subject: FW: 1402040 Andover Release Site WOA

From: Samuel Jackson
Sent: Tuesday, February 04, 2014 12:30:31 AM (UTC) Coordinated Universal Time
To: Sonia West
Cc: Joni Blankfield
Subject: RE: 1402040 Andover Release Site WOA

Sonia,

The analyses look good; however, please change the highlighted sample ID's as follows:

1402040-01 HOA-1
1402040-02 2019 N Ruger Cir
1402040-03 2021 N Ruger Cir
1402040-04 2032 N Ruger Cir
1402040-05 2009 N Mountain Ct
1402040-06 1910 N Quail Crossing
1402040-07 HOA-2
1402040-08 2028 N Ruger Cir
1402040-09 1211 W Quail Crossing Ct
1402040-10 2005 N Colt Ct
1402040-11 2025 N Ruger Cir
1402040-12 2002 N Colt Ct
1402040-13 2007 N Mountain Ct
1402040-14 1009 W Mountain

Let me know if you have any questions. Thanks, Sam

APEX
apexcos.com

Samuel Jackson, P.E.
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201
O) 503-924-4704 x111 M) 503-278-9815

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From: Sonia West [mailto:Sonia.West@alsglobal.com]
Sent: Monday, February 03, 2014 3:54 PM
To: Samuel Jackson
Subject: 1402040 Andover Release Site WOA

Trip Blanks were received but not on COC. These samples were logged in on hold.

Please see the attached file that contains the sample IDs, test assignment, and costs associated with the recent samples you submitted. Please let me know if you have any changes, otherwise we will proceed as shown. Modifications to the final report, after issue, may incur additional cost.

Regards,

Sonia West

PROJECT MANAGER

ALS Life Sciences Division | Environmental

ADDRESS

10450 Stancliff Rd, Suite 210

Houston, Texas 77099-4338

(281) 530-5656

http://www.alsglobal.com

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Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTOD

Date: 1-31-14 Tim
Name:
Company:

Y SEAL
18:00

Seal Broken By: MS
Date: 2/3/14

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Date: 1-31-
Name:
Company:

CUSTODY SEAL
Time: 1800

Seal Broken By: MS
Date: 2/3/14

TRK# 0200 8037 2056 1501

SATURDAY 12:00P
PRIORITY OVERNIGHT
AHS
77099
TX-US IAH

XO SGRA

04-Feb-2014

Samuel Jackson
Apex Companies
3015 SW First Avenue
Portland, OR 97201

Tel: (503) 924-4704
Fax:

Re: E3CE-0065 Andover Release Site Work Order: **14011216**

Dear Samuel,

ALS Environmental received 20 samples on 31-Jan-2014 08:53 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 37.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Electronically approved by: Jumoke M. Lawal

Joni S. Blankfield
Project Manager

Certificate No: T104704231-13-12

ALS Environmental

Date: 04-Feb-14

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Work Order: **14011216**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
14011216-01	MW-3	Groundwater		1/28/2014 12:05	1/31/2014 08:53	☐
14011216-02	MW-9	Groundwater		1/28/2014 13:35	1/31/2014 08:53	☐
14011216-03	MW-10	Groundwater		1/28/2014 14:10	1/31/2014 08:53	☐
14011216-04	MW-12	Groundwater		1/28/2014 14:40	1/31/2014 08:53	☐
14011216-05	MW-4	Groundwater		1/28/2014 15:25	1/31/2014 08:53	☐
14011216-06	MW-16	Groundwater		1/28/2014 15:50	1/31/2014 08:53	☐
14011216-07	MW-11	Groundwater		1/29/2014 15:15	1/31/2014 08:53	☐
14011216-08	MW-2	Groundwater		1/29/2014 15:40	1/31/2014 08:53	☐
14011216-09	MW-5	Groundwater		1/30/2014 13:50	1/31/2014 08:53	☐
14011216-10	DUP-1	Groundwater		1/28/2014	1/31/2014 08:53	☐
14011216-11	MW-6	Groundwater		1/30/2014 14:30	1/31/2014 08:53	☐
14011216-12	MW-7	Groundwater		1/30/2014 14:55	1/31/2014 08:53	☐
14011216-13	MW-1	Groundwater		1/30/2014 15:20	1/31/2014 08:53	☐
14011216-14	MW-8	Groundwater		1/30/2014 15:55	1/31/2014 08:53	☐
14011216-15	MW-13	Groundwater		1/30/2014 16:20	1/31/2014 08:53	☐
14011216-16	MW-14	Groundwater		1/30/2014 16:45	1/31/2014 08:53	☐
14011216-17	DUP-2	Groundwater		1/30/2014	1/31/2014 08:53	☐
14011216-18	MW-15	Groundwater		1/28/2014 16:35	1/31/2014 08:53	☐
14011216-19	Trip Blank - 010814-44	Water		1/28/2014	1/31/2014 08:53	☑
14011216-20	Trip Blank - 010814-45	Water		1/28/2014	1/31/2014 08:53	☑

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Work Order: 14011216

Case Narrative

At the time of sample receipt, the following items were noted:

Sample ID's MW-9 and MW-10 were received with one 40 ml vial broken; however, sufficient sample volume was available to perform the requested analysis.

Two Trip Blank's were received but not listed on the chain of custody; the trip blanks were placed on hold per client request.

The chain of custody was incomplete - the analysis request boxes were not complete for all samples. All samples were logged for VOCs and GRO.

Batch R160843, Volatile Organics by Method 8260, Sample 14011100-03: MS/MSD performed on an unrelated sample.

Batch R160859, Volatile Organics by Method 8260, Sample MW-1: Benzene and Napththalene recovered above control limits in the MS and/or MSD. The associated LCS recoveries were within acceptance limits.

ALS Environmental

Date: *04-Feb-14*

Client:	Apex Companies		
Project:	E3CE-0065 Andover Release Site	**Work Order:**	14011216
Sample ID:	MW-3	**Lab ID:**	14011216-01
Collection Date:	1/28/2014 12:05 PM	**Matrix:**	GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	**2.8**		**0.050**	**mg/L**	1	2/3/2014 11:54 AM
Surr: 4-Bromofluorobenzene	*110*		*70-130*	*%REC*	1	2/3/2014 11:54 AM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	**0.038**		**0.0010**	**mg/L**	1	2/3/2014 11:41 PM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/3/2014 11:41 PM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/3/2014 11:41 PM
2-Butanone	**0.0069**		**0.0020**	**mg/L**	1	2/3/2014 11:41 PM
Benzene	**0.76**		**0.0050**	**mg/L**	5	2/4/2014 12:06 AM
Cyclohexane	**0.072**		**0.0010**	**mg/L**	1	2/3/2014 11:41 PM
Ethylbenzene	**0.070**		**0.0010**	**mg/L**	1	2/3/2014 11:41 PM
Isopropylbenzene	**0.0062**		**0.0010**	**mg/L**	1	2/3/2014 11:41 PM
m,p-Xylene	**0.0098**		**0.0020**	**mg/L**	1	2/3/2014 11:41 PM
Methylcyclohexane	**0.0061**		**0.0010**	**mg/L**	1	2/3/2014 11:41 PM
Naphthalene	**0.0081**		**0.0010**	**mg/L**	1	2/3/2014 11:41 PM
n-Butylbenzene	ND		0.0010	mg/L	1	2/3/2014 11:41 PM
n-Propylbenzene	**0.0079**		**0.0010**	**mg/L**	1	2/3/2014 11:41 PM
o-Xylene	ND		0.0010	mg/L	1	2/3/2014 11:41 PM
Toluene	**0.0081**		**0.0010**	**mg/L**	1	2/3/2014 11:41 PM
Xylenes, Total	**0.011**		**0.0030**	**mg/L**	1	2/3/2014 11:41 PM
Surr: 1,2-Dichloroethane-d4	*101*		*71-125*	*%REC*	1	2/3/2014 11:41 PM
Surr: 1,2-Dichloroethane-d4	*102*		*71-125*	*%REC*	5	2/4/2014 12:06 AM
Surr: 4-Bromofluorobenzene	*103*		*70-125*	*%REC*	1	2/3/2014 11:41 PM
Surr: 4-Bromofluorobenzene	*102*		*70-125*	*%REC*	5	2/4/2014 12:06 AM
Surr: Dibromofluoromethane	*99.0*		*74-125*	*%REC*	1	2/3/2014 11:41 PM
Surr: Dibromofluoromethane	*99.7*		*74-125*	*%REC*	5	2/4/2014 12:06 AM
Surr: Toluene-d8	*107*		*75-125*	*%REC*	1	2/3/2014 11:41 PM
Surr: Toluene-d8	*95.5*		*75-125*	*%REC*	5	2/4/2014 12:06 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-9
Collection Date: 1/28/2014 01:35 PM

Work Order: 14011216
Lab ID: 14011216-02
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	**0.058**		**0.050**	**mg/L**	1	2/3/2014 12:48 PM
Surr: 4-Bromofluorobenzene	*107*		*70-130*	*%REC*	1	2/3/2014 12:48 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **PC**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:32 PM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/3/2014 05:32 PM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:32 PM
2-Butanone	ND		0.0020	mg/L	1	2/3/2014 05:32 PM
Benzene	**0.0046**		**0.0010**	**mg/L**	1	2/3/2014 05:32 PM
Cyclohexane	**0.0015**		**0.0010**	**mg/L**	1	2/3/2014 05:32 PM
Ethylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:32 PM
Isopropylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:32 PM
m,p-Xylene	ND		0.0020	mg/L	1	2/3/2014 05:32 PM
Methylcyclohexane	ND		0.0010	mg/L	1	2/3/2014 05:32 PM
Naphthalene	**0.0033**		**0.0010**	**mg/L**	1	2/3/2014 05:32 PM
n-Butylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:32 PM
n-Propylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:32 PM
o-Xylene	ND		0.0010	mg/L	1	2/3/2014 05:32 PM
Toluene	ND		0.0010	mg/L	1	2/3/2014 05:32 PM
Xylenes, Total	ND		0.0030	mg/L	1	2/3/2014 05:32 PM
Surr: 1,2-Dichloroethane-d4	*101*		*71-125*	*%REC*	1	2/3/2014 05:32 PM
Surr: 4-Bromofluorobenzene	*98.0*		*70-125*	*%REC*	1	2/3/2014 05:32 PM
Surr: Dibromofluoromethane	*103*		*74-125*	*%REC*	1	2/3/2014 05:32 PM
Surr: Toluene-d8	*89.8*		*75-125*	*%REC*	1	2/3/2014 05:32 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-10
Collection Date: 1/28/2014 02:10 PM

Work Order: 14011216
Lab ID: 14011216-03
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	**1.1**		**0.050**	**mg/L**	1	2/3/2014 01:07 PM
Surr: 4-Bromofluorobenzene	*108*		*70-130*	*%REC*	1	2/3/2014 01:07 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	**0.12**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 12:55 AM
1,3,5-Trimethylbenzene	**0.039**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
2-Butanone	**0.0023**		**0.0020**	**mg/L**	1	2/4/2014 12:55 AM
Benzene	**0.026**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
Cyclohexane	**0.0081**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
Ethylbenzene	**0.036**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
Isopropylbenzene	**0.0049**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
m,p-Xylene	**0.073**		**0.0020**	**mg/L**	1	2/4/2014 12:55 AM
Methylcyclohexane	**0.0036**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
Naphthalene	**0.014**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
n-Butylbenzene	**0.0064**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
n-Propylbenzene	**0.015**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
o-Xylene	**0.050**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
Toluene	**0.048**		**0.0010**	**mg/L**	1	2/4/2014 12:55 AM
Xylenes, Total	**0.12**		**0.0030**	**mg/L**	1	2/4/2014 12:55 AM
Surr: 1,2-Dichloroethane-d4	*99.2*		*71-125*	*%REC*	1	2/4/2014 12:55 AM
Surr: 4-Bromofluorobenzene	*111*		*70-125*	*%REC*	1	2/4/2014 12:55 AM
Surr: Dibromofluoromethane	*99.1*		*74-125*	*%REC*	1	2/4/2014 12:55 AM
Surr: Toluene-d8	*108*		*75-125*	*%REC*	1	2/4/2014 12:55 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-12
Collection Date: 1/28/2014 02:40 PM

Work Order: 14011216
Lab ID: 14011216-04
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/3/2014 01:25 PM
Surr: 4-Bromofluorobenzene	*105*		*70-130*	*%REC*	1	2/3/2014 01:25 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **PC**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
2-Butanone	ND		0.0020	mg/L	1	2/3/2014 05:57 PM
Benzene	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
Cyclohexane	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
Ethylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
Isopropylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
m,p-Xylene	ND		0.0020	mg/L	1	2/3/2014 05:57 PM
Methylcyclohexane	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
Naphthalene	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
n-Butylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
n-Propylbenzene	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
o-Xylene	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
Toluene	ND		0.0010	mg/L	1	2/3/2014 05:57 PM
Xylenes, Total	ND		0.0030	mg/L	1	2/3/2014 05:57 PM
Surr: 1,2-Dichloroethane-d4	*103*		*71-125*	*%REC*	1	2/3/2014 05:57 PM
Surr: 4-Bromofluorobenzene	*98.8*		*70-125*	*%REC*	1	2/3/2014 05:57 PM
Surr: Dibromofluoromethane	*105*		*74-125*	*%REC*	1	2/3/2014 05:57 PM
Surr: Toluene-d8	*89.7*		*75-125*	*%REC*	1	2/3/2014 05:57 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-4
Collection Date: 1/28/2014 03:25 PM

Work Order: 14011216
Lab ID: 14011216-05
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/3/2014 02:01 PM
Surr: 4-Bromofluorobenzene	*107*		*70-130*	*%REC*	1	2/3/2014 02:01 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 01:45 AM
Benzene	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/4/2014 01:45 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
Naphthalene	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
o-Xylene	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
Toluene	ND		0.0010	mg/L	1	2/4/2014 01:45 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/4/2014 01:45 AM
Surr: 1,2-Dichloroethane-d4	*98.9*		*71-125*	*%REC*	1	2/4/2014 01:45 AM
Surr: 4-Bromofluorobenzene	*97.0*		*70-125*	*%REC*	1	2/4/2014 01:45 AM
Surr: Dibromofluoromethane	*98.4*		*74-125*	*%REC*	1	2/4/2014 01:45 AM
Surr: Toluene-d8	*99.0*		*75-125*	*%REC*	1	2/4/2014 01:45 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-16
Collection Date: 1/28/2014 03:50 PM

Work Order: 14011216
Lab ID: 14011216-06
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/3/2014 02:19 PM
Surr: 4-Bromofluorobenzene	*107*		*70-130*	*%REC*	1	2/3/2014 02:19 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 02:09 AM
Benzene	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/4/2014 02:09 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
Naphthalene	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
o-Xylene	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
Toluene	ND		0.0010	mg/L	1	2/4/2014 02:09 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/4/2014 02:09 AM
Surr: 1,2-Dichloroethane-d4	*101*		*71-125*	*%REC*	1	2/4/2014 02:09 AM
Surr: 4-Bromofluorobenzene	*95.9*		*70-125*	*%REC*	1	2/4/2014 02:09 AM
Surr: Dibromofluoromethane	*97.8*		*74-125*	*%REC*	1	2/4/2014 02:09 AM
Surr: Toluene-d8	*100*		*75-125*	*%REC*	1	2/4/2014 02:09 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-11
Collection Date: 1/29/2014 03:15 PM

Work Order: 14011216
Lab ID: 14011216-07
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/3/2014 02:37 PM
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	1	2/3/2014 02:37 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 02:34 AM
Benzene	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/4/2014 02:34 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
Naphthalene	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
o-Xylene	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
Toluene	ND		0.0010	mg/L	1	2/4/2014 02:34 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/4/2014 02:34 AM
Surr: 1,2-Dichloroethane-d4	*98.7*		*71-125*	*%REC*	1	2/4/2014 02:34 AM
Surr: 4-Bromofluorobenzene	*94.3*		*70-125*	*%REC*	1	2/4/2014 02:34 AM
Surr: Dibromofluoromethane	*96.1*		*74-125*	*%REC*	1	2/4/2014 02:34 AM
Surr: Toluene-d8	*95.5*		*75-125*	*%REC*	1	2/4/2014 02:34 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-2
Collection Date: 1/29/2014 03:40 PM

Work Order: 14011216
Lab ID: 14011216-08
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/3/2014 02:55 PM
Surr: 4-Bromofluorobenzene	*105*		*70-130*	*%REC*	1	2/3/2014 02:55 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 02:58 AM
Benzene	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/4/2014 02:58 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
Naphthalene	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
o-Xylene	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
Toluene	ND		0.0010	mg/L	1	2/4/2014 02:58 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/4/2014 02:58 AM
Surr: 1,2-Dichloroethane-d4	*102*		*71-125*	*%REC*	1	2/4/2014 02:58 AM
Surr: 4-Bromofluorobenzene	*98.8*		*70-125*	*%REC*	1	2/4/2014 02:58 AM
Surr: Dibromofluoromethane	*98.6*		*74-125*	*%REC*	1	2/4/2014 02:58 AM
Surr: Toluene-d8	*103*		*75-125*	*%REC*	1	2/4/2014 02:58 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-5
Collection Date: 1/30/2014 01:50 PM

Work Order: 14011216
Lab ID: 14011216-09
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	**0.61**		**0.050**	**mg/L**	1	2/3/2014 03:14 PM
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	1	2/3/2014 03:14 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	**0.038**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
1,2-Dichloroethane	**0.0012**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
1,3,5-Trimethylbenzene	**0.011**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 01:20 AM
Benzene	**0.050**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
Cyclohexane	**0.018**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
Ethylbenzene	**0.034**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
Isopropylbenzene	**0.0022**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
m,p-Xylene	**0.041**		**0.0020**	**mg/L**	1	2/4/2014 01:20 AM
Methylcyclohexane	**0.0017**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
Naphthalene	**0.0086**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 01:20 AM
n-Propylbenzene	**0.0046**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
o-Xylene	**0.033**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
Toluene	**0.0090**		**0.0010**	**mg/L**	1	2/4/2014 01:20 AM
Xylenes, Total	**0.075**		**0.0030**	**mg/L**	1	2/4/2014 01:20 AM
Surr: 1,2-Dichloroethane-d4	*99.5*		*71-125*	*%REC*	1	2/4/2014 01:20 AM
Surr: 4-Bromofluorobenzene	*105*		*70-125*	*%REC*	1	2/4/2014 01:20 AM
Surr: Dibromofluoromethane	*97.8*		*74-125*	*%REC*	1	2/4/2014 01:20 AM
Surr: Toluene-d8	*102*		*75-125*	*%REC*	1	2/4/2014 01:20 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: DUP-1
Collection Date: 1/28/2014

Work Order: 14011216
Lab ID: 14011216-10
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/3/2014 03:34 PM
Surr: 4-Bromofluorobenzene	*107*		*70-130*	*%REC*	1	2/3/2014 03:34 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 03:23 AM
Benzene	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/4/2014 03:23 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
Naphthalene	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
o-Xylene	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
Toluene	ND		0.0010	mg/L	1	2/4/2014 03:23 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/4/2014 03:23 AM
Surr: 1,2-Dichloroethane-d4	*99.5*		*71-125*	*%REC*	1	2/4/2014 03:23 AM
Surr: 4-Bromofluorobenzene	*103*		*70-125*	*%REC*	1	2/4/2014 03:23 AM
Surr: Dibromofluoromethane	*97.8*		*74-125*	*%REC*	1	2/4/2014 03:23 AM
Surr: Toluene-d8	*100*		*75-125*	*%REC*	1	2/4/2014 03:23 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-6
Collection Date: 1/30/2014 02:30 PM

Work Order: 14011216
Lab ID: 14011216-11
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/3/2014 03:52 PM
Surr: 4-Bromofluorobenzene	*107*		*70-130*	*%REC*	1	2/3/2014 03:52 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 03:48 AM
Benzene	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/4/2014 03:48 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
Naphthalene	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
o-Xylene	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
Toluene	ND		0.0010	mg/L	1	2/4/2014 03:48 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/4/2014 03:48 AM
Surr: 1,2-Dichloroethane-d4	*99.5*		*71-125*	*%REC*	1	2/4/2014 03:48 AM
Surr: 4-Bromofluorobenzene	*99.7*		*70-125*	*%REC*	1	2/4/2014 03:48 AM
Surr: Dibromofluoromethane	*97.8*		*74-125*	*%REC*	1	2/4/2014 03:48 AM
Surr: Toluene-d8	*102*		*75-125*	*%REC*	1	2/4/2014 03:48 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-7
Collection Date: 1/30/2014 02:55 PM

Work Order: 14011216
Lab ID: 14011216-12
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/3/2014 04:10 PM
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	1	2/3/2014 04:10 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 04:12 AM
Benzene	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/4/2014 04:12 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
Naphthalene	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
o-Xylene	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
Toluene	ND		0.0010	mg/L	1	2/4/2014 04:12 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/4/2014 04:12 AM
Surr: 1,2-Dichloroethane-d4	*98.0*		*71-125*	*%REC*	1	2/4/2014 04:12 AM
Surr: 4-Bromofluorobenzene	*101*		*70-125*	*%REC*	1	2/4/2014 04:12 AM
Surr: Dibromofluoromethane	*96.2*		*74-125*	*%REC*	1	2/4/2014 04:12 AM
Surr: Toluene-d8	*105*		*75-125*	*%REC*	1	2/4/2014 04:12 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-1
Collection Date: 1/30/2014 03:20 PM

Work Order: 14011216
Lab ID: 14011216-13
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	**44**		**0.050**	**mg/L**	1	2/3/2014 04:28 PM
Surr: 4-Bromofluorobenzene	*114*		*70-130*	*%REC*	1	2/3/2014 04:28 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	**1.0**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
1,2-Dichloroethane	ND		0.025	mg/L	25	2/3/2014 10:04 PM
1,3,5-Trimethylbenzene	**0.30**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
2-Butanone	ND		0.050	mg/L	25	2/3/2014 10:04 PM
Benzene	**3.1**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
Cyclohexane	**0.45**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
Ethylbenzene	**1.4**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
Isopropylbenzene	**0.045**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
m,p-Xylene	**3.5**		**0.050**	**mg/L**	25	2/3/2014 10:04 PM
Methylcyclohexane	**0.076**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
Naphthalene	**0.29**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
n-Butylbenzene	**0.030**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
n-Propylbenzene	**0.14**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
o-Xylene	**1.6**		**0.025**	**mg/L**	25	2/3/2014 10:04 PM
Toluene	**9.3**		**0.10**	**mg/L**	100	2/3/2014 11:17 PM
Xylenes, Total	**5.2**		**0.075**	**mg/L**	25	2/3/2014 10:04 PM
Surr: 1,2-Dichloroethane-d4	*99.6*		*71-125*	*%REC*	25	2/3/2014 10:04 PM
Surr: 1,2-Dichloroethane-d4	*100*		*71-125*	*%REC*	100	2/3/2014 11:17 PM
Surr: 4-Bromofluorobenzene	*103*		*70-125*	*%REC*	25	2/3/2014 10:04 PM
Surr: 4-Bromofluorobenzene	*102*		*70-125*	*%REC*	100	2/3/2014 11:17 PM
Surr: Dibromofluoromethane	*98.5*		*74-125*	*%REC*	25	2/3/2014 10:04 PM
Surr: Dibromofluoromethane	*98.0*		*74-125*	*%REC*	100	2/3/2014 11:17 PM
Surr: Toluene-d8	*101*		*75-125*	*%REC*	25	2/3/2014 10:04 PM
Surr: Toluene-d8	*106*		*75-125*	*%REC*	100	2/3/2014 11:17 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client:	Apex Companies		
Project:	E3CE-0065 Andover Release Site	**Work Order:**	14011216
Sample ID:	MW-8	**Lab ID:**	14011216-14
Collection Date:	1/30/2014 03:55 PM	**Matrix:**	GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	**0.16**		**0.050**	**mg/L**	1	2/3/2014 05:04 PM
Surr: 4-Bromofluorobenzene	*107*		*70-130*	*%REC*	1	2/3/2014 05:04 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	**0.0026**		**0.0010**	**mg/L**	1	2/4/2014 04:36 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 04:36 AM
1,3,5-Trimethylbenzene	**0.0010**		**0.0010**	**mg/L**	1	2/4/2014 04:36 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 04:36 AM
Benzene	**0.0030**		**0.0010**	**mg/L**	1	2/4/2014 04:36 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 04:36 AM
Ethylbenzene	**0.0049**		**0.0010**	**mg/L**	1	2/4/2014 04:36 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 04:36 AM
m,p-Xylene	**0.013**		**0.0020**	**mg/L**	1	2/4/2014 04:36 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 04:36 AM
Naphthalene	**0.0041**		**0.0010**	**mg/L**	1	2/4/2014 04:36 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 04:36 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 04:36 AM
o-Xylene	**0.0056**		**0.0010**	**mg/L**	1	2/4/2014 04:36 AM
Toluene	**0.020**		**0.0010**	**mg/L**	1	2/4/2014 04:36 AM
Xylenes, Total	**0.018**		**0.0030**	**mg/L**	1	2/4/2014 04:36 AM
Surr: 1,2-Dichloroethane-d4	*99.5*		*71-125*	*%REC*	1	2/4/2014 04:36 AM
Surr: 4-Bromofluorobenzene	*102*		*70-125*	*%REC*	1	2/4/2014 04:36 AM
Surr: Dibromofluoromethane	*99.8*		*74-125*	*%REC*	1	2/4/2014 04:36 AM
Surr: Toluene-d8	*101*		*75-125*	*%REC*	1	2/4/2014 04:36 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-13
Collection Date: 1/30/2014 04:20 PM

Work Order: 14011216
Lab ID: 14011216-15
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	**0.072**		**0.050**	**mg/L**	1	2/3/2014 05:22 PM
Surr: 4-Bromofluorobenzene	*108*		*70-130*	*%REC*	1	2/3/2014 05:22 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	**0.0014**		**0.0010**	**mg/L**	1	2/4/2014 05:01 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 05:01 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:01 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 05:01 AM
Benzene	**0.0011**		**0.0010**	**mg/L**	1	2/4/2014 05:01 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 05:01 AM
Ethylbenzene	**0.0024**		**0.0010**	**mg/L**	1	2/4/2014 05:01 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:01 AM
m,p-Xylene	**0.0063**		**0.0020**	**mg/L**	1	2/4/2014 05:01 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 05:01 AM
Naphthalene	**0.0038**		**0.0010**	**mg/L**	1	2/4/2014 05:01 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:01 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:01 AM
o-Xylene	**0.0026**		**0.0010**	**mg/L**	1	2/4/2014 05:01 AM
Toluene	**0.0083**		**0.0010**	**mg/L**	1	2/4/2014 05:01 AM
Xylenes, Total	**0.0089**		**0.0030**	**mg/L**	1	2/4/2014 05:01 AM
Surr: 1,2-Dichloroethane-d4	*99.4*		*71-125*	*%REC*	1	2/4/2014 05:01 AM
Surr: 4-Bromofluorobenzene	*94.9*		*70-125*	*%REC*	1	2/4/2014 05:01 AM
Surr: Dibromofluoromethane	*97.6*		*74-125*	*%REC*	1	2/4/2014 05:01 AM
Surr: Toluene-d8	*93.2*		*75-125*	*%REC*	1	2/4/2014 05:01 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-14
Collection Date: 1/30/2014 04:45 PM

Work Order: 14011216
Lab ID: 14011216-16
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/3/2014 05:40 PM
Surr: 4-Bromofluorobenzene	*107*		*70-130*	*%REC*	1	2/3/2014 05:40 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	**0.0011**		**0.0010**	**mg/L**	1	2/4/2014 05:25 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 05:25 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:25 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 05:25 AM
Benzene	ND		0.0010	mg/L	1	2/4/2014 05:25 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 05:25 AM
Ethylbenzene	**0.0016**		**0.0010**	**mg/L**	1	2/4/2014 05:25 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:25 AM
m,p-Xylene	**0.0043**		**0.0020**	**mg/L**	1	2/4/2014 05:25 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 05:25 AM
Naphthalene	ND		0.0010	mg/L	1	2/4/2014 05:25 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:25 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:25 AM
o-Xylene	**0.0017**		**0.0010**	**mg/L**	1	2/4/2014 05:25 AM
Toluene	**0.0059**		**0.0010**	**mg/L**	1	2/4/2014 05:25 AM
Xylenes, Total	**0.0061**		**0.0030**	**mg/L**	1	2/4/2014 05:25 AM
Surr: 1,2-Dichloroethane-d4	*102*		*71-125*	*%REC*	1	2/4/2014 05:25 AM
Surr: 4-Bromofluorobenzene	*97.3*		*70-125*	*%REC*	1	2/4/2014 05:25 AM
Surr: Dibromofluoromethane	*98.7*		*74-125*	*%REC*	1	2/4/2014 05:25 AM
Surr: Toluene-d8	*107*		*75-125*	*%REC*	1	2/4/2014 05:25 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: DUP-2
Collection Date: 1/30/2014

Work Order: 14011216
Lab ID: 14011216-17
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	**0.15**		**0.050**	**mg/L**	1	2/3/2014 05:58 PM
Surr: 4-Bromofluorobenzene	*106*		*70-130*	*%REC*	1	2/3/2014 05:58 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	**0.0031**		**0.0010**	**mg/L**	1	2/4/2014 12:31 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 12:31 AM
1,3,5-Trimethylbenzene	**0.0010**		**0.0010**	**mg/L**	1	2/4/2014 12:31 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 12:31 AM
Benzene	**0.0038**		**0.0010**	**mg/L**	1	2/4/2014 12:31 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 12:31 AM
Ethylbenzene	**0.0056**		**0.0010**	**mg/L**	1	2/4/2014 12:31 AM
Isopropylbenzene	**0.0011**		**0.0010**	**mg/L**	1	2/4/2014 12:31 AM
m,p-Xylene	**0.014**		**0.0020**	**mg/L**	1	2/4/2014 12:31 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 12:31 AM
Naphthalene	**0.0040**		**0.0010**	**mg/L**	1	2/4/2014 12:31 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 12:31 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 12:31 AM
o-Xylene	**0.0064**		**0.0010**	**mg/L**	1	2/4/2014 12:31 AM
Toluene	**0.025**		**0.0010**	**mg/L**	1	2/4/2014 12:31 AM
Xylenes, Total	**0.021**		**0.0030**	**mg/L**	1	2/4/2014 12:31 AM
Surr: 1,2-Dichloroethane-d4	*98.6*		*71-125*	*%REC*	1	2/4/2014 12:31 AM
Surr: 4-Bromofluorobenzene	*100*		*70-125*	*%REC*	1	2/4/2014 12:31 AM
Surr: Dibromofluoromethane	*98.4*		*74-125*	*%REC*	1	2/4/2014 12:31 AM
Surr: Toluene-d8	*104*		*75-125*	*%REC*	1	2/4/2014 12:31 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *04-Feb-14*

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
Sample ID: MW-15
Collection Date: 1/28/2014 04:35 PM

Work Order: 14011216
Lab ID: 14011216-18
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	ND		0.050	mg/L	1	2/3/2014 06:16 PM
Surr: 4-Bromofluorobenzene	*108*		*70-130*	*%REC*	1	2/3/2014 06:16 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **KKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
2-Butanone	ND		0.0020	mg/L	1	2/4/2014 05:50 AM
Benzene	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
Cyclohexane	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
Ethylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
Isopropylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
m,p-Xylene	ND		0.0020	mg/L	1	2/4/2014 05:50 AM
Methylcyclohexane	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
Naphthalene	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
n-Butylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
n-Propylbenzene	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
o-Xylene	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
Toluene	ND		0.0010	mg/L	1	2/4/2014 05:50 AM
Xylenes, Total	ND		0.0030	mg/L	1	2/4/2014 05:50 AM
Surr: 1,2-Dichloroethane-d4	*97.3*		*71-125*	*%REC*	1	2/4/2014 05:50 AM
Surr: 4-Bromofluorobenzene	*94.8*		*70-125*	*%REC*	1	2/4/2014 05:50 AM
Surr: Dibromofluoromethane	*96.6*		*74-125*	*%REC*	1	2/4/2014 05:50 AM
Surr: Toluene-d8	*104*		*75-125*	*%REC*	1	2/4/2014 05:50 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 14011216
Client: Apex Companies
Project: E3CE-0065 Andover Release Site

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID R160809	**Test Name:** VPH - Iowa OA-1					
14011216-01 B	MW-3	Groundwater	1/28/2014 12:05:00 PM			2/3/2014 11:54 AM
14011216-02 B	MW-9		1/28/2014 1:35:00 PM			2/3/2014 12:48 PM
14011216-03 B	MW-10		1/28/2014 2:10:00 PM			2/3/2014 01:07 PM
14011216-04 B	MW-12		1/28/2014 2:40:00 PM			2/3/2014 01:25 PM
14011216-05 B	MW-4		1/28/2014 3:25:00 PM			2/3/2014 02:01 PM
14011216-06 B	MW-16		1/28/2014 3:50:00 PM			2/3/2014 02:19 PM
14011216-07 B	MW-11		1/29/2014 3:15:00 PM			2/3/2014 02:37 PM
14011216-08 B	MW-2		1/29/2014 3:40:00 PM			2/3/2014 02:55 PM
14011216-09 B	MW-5		1/30/2014 1:50:00 PM			2/3/2014 03:14 PM
14011216-10 B	DUP-1		1/28/2014			2/3/2014 03:34 PM
14011216-11 B	MW-6		1/30/2014 2:30:00 PM			2/3/2014 03:52 PM
14011216-12 B	MW-7		1/30/2014 2:55:00 PM			2/3/2014 04:10 PM
14011216-13 B	MW-1		1/30/2014 3:20:00 PM			2/3/2014 04:28 PM
14011216-14 B	MW-8		1/30/2014 3:55:00 PM			2/3/2014 05:04 PM
14011216-15 B	MW-13		1/30/2014 4:20:00 PM			2/3/2014 05:22 PM
14011216-16 B	MW-14		1/30/2014 4:45:00 PM			2/3/2014 05:40 PM
14011216-17 B	DUP-2		1/30/2014			2/3/2014 05:58 PM
14011216-18 B	MW-15		1/28/2014 4:35:00 PM			2/3/2014 06:16 PM
Batch ID R160843	**Test Name:** Low Level Volatiles - SW8260C					
14011216-02 A	MW-9	Groundwater	1/28/2014 1:35:00 PM			2/3/2014 05:32 PM
14011216-04 A	MW-12		1/28/2014 2:40:00 PM			2/3/2014 05:57 PM

Work Order: 14011216
Client: Apex Companies
Project: E3CE-0065 Andover Release Site

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID R160859	**Test Name:** Low Level Volatiles - SW8260C					
14011216-01	MW-3	Groundwater	1/28/2014 12:05:00 PM			2/3/2014 11:41 PM
^						2/4/2014 12:06 AM
14011216-03	MW-10		1/28/2014 2:10:00 PM			2/4/2014 12:55 AM
^						
14011216-05	MW-4		1/28/2014 3:25:00 PM			2/4/2014 01:45 AM
^						
14011216-06	MW-16		1/28/2014 3:50:00 PM			2/4/2014 02:09 AM
^						
14011216-07	MW-11		1/29/2014 3:15:00 PM			2/4/2014 02:34 AM
^						
14011216-08	MW-2		1/29/2014 3:40:00 PM			2/4/2014 02:58 AM
^						
14011216-09	MW-5		1/30/2014 1:50:00 PM			2/4/2014 01:20 AM
^						
14011216-10	DUP-1		1/28/2014			2/4/2014 03:23 AM
^						
14011216-11	MW-6		1/30/2014 2:30:00 PM			2/4/2014 03:48 AM
^						
14011216-12	MW-7		1/30/2014 2:55:00 PM			2/4/2014 04:12 AM
^						
14011216-13	MW-1		1/30/2014 3:20:00 PM			2/3/2014 10:04 PM
^						2/3/2014 11:17 PM
14011216-14	MW-8		1/30/2014 3:55:00 PM			2/4/2014 04:36 AM
^						
14011216-15	MW-13		1/30/2014 4:20:00 PM			2/4/2014 05:01 AM
^						
14011216-16	MW-14		1/30/2014 4:45:00 PM			2/4/2014 05:25 AM
^						
14011216-17	DUP-2		1/30/2014			2/4/2014 12:31 AM
^						
14011216-18	MW-15		1/28/2014 4:35:00 PM			2/4/2014 05:50 AM
^						

ALS Environmental

Date: 04-Feb-14

Client: Apex Companies
Work Order: 14011216
Project: E3CE-0065 Andover Release Site

QC BATCH REPORT

Batch ID: **R160809** Instrument ID **FID-9** Method: **IA OA-1**

MBLK Sample ID: **GBLKW1-140203-R160809** Units: **mg/L** Analysis Date: **2/3/2014 11:36 AM**

Client ID: Run ID: **FID-9_140203A** SeqNo: **3520792** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	U	0.050								
Surr: 4-Bromofluorobenzene	0.1069	0.0050	*0.1*	*0*	*107*	*70-130*	*0*			

LCS Sample ID: **GLCSW1-140203-R160809** Units: **mg/L** Analysis Date: **2/3/2014 11:00 AM**

Client ID: Run ID: **FID-9_140203A** SeqNo: **3520791** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	0.9597	0.050	1	0	96	70-130				
Surr: 4-Bromofluorobenzene	0.1088	0.0050	*0.1*	*0*	*109*	*70-130*	*0*			

MS Sample ID: **14011216-01BMS** Units: **mg/L** Analysis Date: **2/3/2014 12:12 PM**

Client ID: **MW-3** Run ID: **FID-9_140203A** SeqNo: **3520794** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	3.676	0.050	1	2.78	89.6	70-130				
Surr: 4-Bromofluorobenzene	0.1105	0.0050	*0.1*	*0*	*111*	*70-130*	*0*			

MSD Sample ID: **14011216-01BMSD** Units: **mg/L** Analysis Date: **2/3/2014 12:30 PM**

Client ID: **MW-3** Run ID: **FID-9_140203A** SeqNo: **3520795** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	3.65	0.050	1	2.78	87	70-130	3.676	0.713	30	
Surr: 4-Bromofluorobenzene	0.1117	0.0050	*0.1*	*0*	*112*	*70-130*	*0.1105*	*1.06*	*30*	

The following samples were analyzed in this batch:

14011216-01B	14011216-02B	14011216-03B
14011216-04B	14011216-05B	14011216-06B
14011216-07B	14011216-08B	14011216-09B
14011216-10B	14011216-11B	14011216-12B
14011216-13B	14011216-14B	14011216-15B
14011216-16B	14011216-17B	14011216-18B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14011216
Project: E3CE-0065 Andover Release Site

QC BATCH REPORT

Batch ID: **R160843** Instrument ID **VOA6** Method: **SW8260**

MBLK Sample ID: **VBLKW-140203-R160843** Units: **µg/L** Analysis Date: **2/3/2014 12:20 PM**

Client ID: Run ID: **VOA6_140203A** SeqNo: **3521536** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	U	1.0								
1,2-Dichloroethane	U	1.0								
1,3,5-Trimethylbenzene	U	1.0								
2-Butanone	U	2.0								
Benzene	U	1.0								
Cyclohexane	U	1.0								
Ethylbenzene	U	1.0								
Isopropylbenzene	U	1.0								
m,p-Xylene	U	2.0								
Methylcyclohexane	U	1.0								
Naphthalene	U	1.0								
n-Butylbenzene	U	1.0								
n-Propylbenzene	U	1.0								
o-Xylene	U	1.0								
Toluene	U	1.0								
Xylenes, Total	U	3.0								
Surr: 1,2-Dichloroethane-d4	50.47	1.0	*50*	*0*	*101*	*71-125*	*0*			
Surr: 4-Bromofluorobenzene	49.04	1.0	*50*	*0*	*98.1*	*70-125*	*0*			
Surr: Dibromofluoromethane	52.26	1.0	*50*	*0*	*105*	*74-125*	*0*			
Surr: Toluene-d8	45.57	1.0	*50*	*0*	*91.1*	*75-125*	*0*			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14011216
Project: E3CE-0065 Andover Release Site

QC BATCH REPORT

Batch ID: **R160843** Instrument ID **VOA6** Method: **SW8260**

LCS Sample ID: **VLCSW-140203-R160843** Units: **µg/L** Analysis Date: **2/3/2014 01:57 PM**

Client ID: Run ID: **VOA6_140203A** SeqNo: **3521540** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	41.14	1.0	50	0	82.3	80-120				
1,2-Dichloroethane	47.37	1.0	50	0	94.7	79-120				
1,3,5-Trimethylbenzene	41.1	1.0	50	0	82.2	80-120				
2-Butanone	120.2	2.0	100	0	120	60-140				
Benzene	48.85	1.0	50	0	97.7	80-120				
Cyclohexane	55.13	1.0	50	0	110	75-125				
Ethylbenzene	43.97	1.0	50	0	87.9	80-120				
Isopropylbenzene	44.41	1.0	50	0	88.8	80-120				
m,p-Xylene	88.47	2.0	100	0	88.5	80-120				
Methylcyclohexane	57.11	1.0	50	0	114	79-123				
Naphthalene	53.01	1.0	50	0	106	70-130				
n-Butylbenzene	45.07	1.0	50	0	90.1	75-125				
n-Propylbenzene	41.39	1.0	50	0	82.8	75-130				
o-Xylene	44.03	1.0	50	0	88.1	80-120				
Toluene	43.54	1.0	50	0	87.1	80-121				
Xylenes, Total	132.5	3.0	150	0	88.3	80-124				
Surr: 1,2-Dichloroethane-d4	48.19	1.0	*50*	*0*	*96.4*	*71-125*		*0*		
Surr: 4-Bromofluorobenzene	51.97	1.0	*50*	*0*	*104*	*70-125*		*0*		
Surr: Dibromofluoromethane	51.13	1.0	*50*	*0*	*102*	*74-125*		*0*		
Surr: Toluene-d8	45.26	1.0	*50*	*0*	*90.5*	*75-125*		*0*		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14011216
Project: E3CE-0065 Andover Release Site

QC BATCH REPORT

Batch ID: **R160843** Instrument ID **VOA6** Method: **SW8260**

MS Sample ID: **14011100-03AMS** Units: **µg/L** Analysis Date: **2/3/2014 01:05 PM**

Client ID: Run ID: **VOA6_140203A** SeqNo: **3521538** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	36.02	1.0	50	0	72	80-120				S
1,2-Dichloroethane	46.59	1.0	50	0	93.2	79-120				
1,3,5-Trimethylbenzene	34.81	1.0	50	0	69.6	80-120				S
2-Butanone	123.6	2.0	100	0	124	60-140				
Benzene	45.82	1.0	50	0	91.6	80-120				
Cyclohexane	42.63	1.0	50	0	85.3	75-125				
Ethylbenzene	38.61	1.0	50	0	77.2	80-120				S
Isopropylbenzene	37.22	1.0	50	0	74.4	80-120				S
m,p-Xylene	78.37	2.0	100	0	78.4	80-120				S
Methylcyclohexane	29.21	1.0	50	0	58.4	79-123				S
Naphthalene	45.13	1.0	50	0	90.3	70-130				
n-Butylbenzene	36.21	1.0	50	0	72.4	75-125				S
n-Propylbenzene	34.09	1.0	50	0	68.2	75-130				S
o-Xylene	40.25	1.0	50	0	80.5	80-120				
Toluene	40.04	1.0	50	0	80.1	80-121				
Xylenes, Total	118.6	3.0	150	0	79.1	80-124				S
Surr: 1,2-Dichloroethane-d4	48.76	1.0	*50*	*0*	*97.5*	*71-125*		*0*		
Surr: 4-Bromofluorobenzene	52.63	1.0	*50*	*0*	*105*	*70-125*		*0*		
Surr: Dibromofluoromethane	52.38	1.0	*50*	*0*	*105*	*74-125*		*0*		
Surr: Toluene-d8	45.12	1.0	*50*	*0*	*90.2*	*75-125*		*0*		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14011216
Project: E3CE-0065 Andover Release Site

QC BATCH REPORT

Batch ID: **R160843** Instrument ID **VOA6** Method: **SW8260**

MSD Sample ID: **14011100-03AMSD** Units: **µg/L** Analysis Date: **2/3/2014 01:31 PM**

Client ID: Run ID: **VOA6_140203A** SeqNo: **3521539** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	38.78	1.0	50	0	77.6	80-120	36.02	7.36	20	S
1,2-Dichloroethane	47.13	1.0	50	0	94.3	79-120	46.59	1.16	20	
1,3,5-Trimethylbenzene	38.45	1.0	50	0	76.9	80-120	34.81	9.94	20	S
2-Butanone	125.5	2.0	100	0	125	60-140	123.6	1.46	20	
Benzene	46.84	1.0	50	0	93.7	80-120	45.82	2.19	20	
Cyclohexane	50.82	1.0	50	0	102	75-125	42.63	17.5	20	
Ethylbenzene	41.39	1.0	50	0	82.8	80-120	38.61	6.96	20	
Isopropylbenzene	41.35	1.0	50	0	82.7	80-120	37.22	10.5	20	
m,p-Xylene	83.17	2.0	100	0	83.2	80-120	78.37	5.94	20	
Methylcyclohexane	31.39	1.0	50	0	62.8	79-123	29.21	7.18	20	S
Naphthalene	50.59	1.0	50	0	101	70-130	45.13	11.4	20	
n-Butylbenzene	41.66	1.0	50	0	83.3	75-125	36.21	14	20	
n-Propylbenzene	38.49	1.0	50	0	77	75-130	34.09	12.1	20	
o-Xylene	42.56	1.0	50	0	85.1	80-120	40.25	5.57	20	
Toluene	41.48	1.0	50	0	83	80-121	40.04	3.53	20	
Xylenes, Total	125.7	3.0	150	0	83.8	80-124	118.6	5.81	20	
Surr: 1,2-Dichloroethane-d4	48.08	1.0	*50*	*0*	*96.2*	*71-125*	*48.76*	*1.41*	*20*	
Surr: 4-Bromofluorobenzene	52.45	1.0	*50*	*0*	*105*	*70-125*	*52.63*	*0.334*	*20*	
Surr: Dibromofluoromethane	50.67	1.0	*50*	*0*	*101*	*74-125*	*52.38*	*3.31*	*20*	
Surr: Toluene-d8	45.12	1.0	*50*	*0*	*90.2*	*75-125*	*45.12*	*0.017*	*20*	

The following samples were analyzed in this batch:

14011216-02A	14011216-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14011216
Project: E3CE-0065 Andover Release Site

QC BATCH REPORT

Batch ID: **R160859** Instrument ID **VOA4** Method: **SW8260**

MBLK Sample ID: **VBLKW-140203-R160859** Units: **µg/L** Analysis Date: **2/3/2014 09:39 PM**

Client ID: Run ID: **VOA4_140203A** SeqNo: **3521772** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	U	1.0								
1,2-Dichloroethane	U	1.0								
1,3,5-Trimethylbenzene	U	1.0								
2-Butanone	U	2.0								
Benzene	U	1.0								
Cyclohexane	U	1.0								
Ethylbenzene	U	1.0								
Isopropylbenzene	U	1.0								
m,p-Xylene	U	2.0								
Methylcyclohexane	U	1.0								
Naphthalene	U	1.0								
n-Propylbenzene	U	1.0								
o-Xylene	U	1.0								
Toluene	U	1.0								
Xylenes, Total	U	3.0								
Surr: 1,2-Dichloroethane-d4	48.81	1.0	*50*	*0*	*97.6*	*71-125*	*0*			
Surr: 4-Bromofluorobenzene	48.48	1.0	*50*	*0*	*97*	*70-125*	*0*			
Surr: Dibromofluoromethane	49.47	1.0	*50*	*0*	*98.9*	*74-125*	*0*			
Surr: Toluene-d8	50.78	1.0	*50*	*0*	*102*	*75-125*	*0*			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14011216
Project: E3CE-0065 Andover Release Site

QC BATCH REPORT

Batch ID: **R160859** Instrument ID **VOA4** Method: **SW8260**

LCS Sample ID: **VLCSW-140203-R160859** Units: **µg/L** Analysis Date: **2/3/2014 08:50 PM**

Client ID: Run ID: **VOA4_140203A** SeqNo: **3521771** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	55.46	1.0	50	0	111	80-120				
1,2-Dichloroethane	53.93	1.0	50	0	108	79-120				
1,3,5-Trimethylbenzene	51.37	1.0	50	0	103	80-120				
2-Butanone	125.7	2.0	100	0	126	60-140				
Benzene	52.22	1.0	50	0	104	80-120				
Cyclohexane	56.31	1.0	50	0	113	75-125				
Ethylbenzene	53.85	1.0	50	0	108	80-120				
Isopropylbenzene	54.93	1.0	50	0	110	80-120				
m,p-Xylene	107.3	2.0	100	0	107	80-120				
Methylcyclohexane	55.2	1.0	50	0	110	79-123				
Naphthalene	57.34	1.0	50	0	115	70-130				
n-Propylbenzene	51.9	1.0	50	0	104	75-130				
o-Xylene	55.08	1.0	50	0	110	80-120				
Toluene	51.82	1.0	50	0	104	80-121				
Xylenes, Total	162.4	3.0	150	0	108	80-124				
Surr: 1,2-Dichloroethane-d4	50.54	1.0	*50*	*0*	*101*	*71-125*		*0*		
Surr: 4-Bromofluorobenzene	51.93	1.0	*50*	*0*	*104*	*70-125*		*0*		
Surr: Dibromofluoromethane	51.89	1.0	*50*	*0*	*104*	*74-125*		*0*		
Surr: Toluene-d8	48.79	1.0	*50*	*0*	*97.6*	*75-125*		*0*		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14011216
Project: E3CE-0065 Andover Release Site

QC BATCH REPORT

Batch ID: **R160859** Instrument ID **VOA4** Method: **SW8260**

MS Sample ID: **14011216-13AMS** Units: **µg/L** Analysis Date: **2/3/2014 10:28 PM**

Client ID: **MW-1** Run ID: **VOA4_140203A** SeqNo: **3521774** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	6627	100	5000	1076	111	80-120				
1,2-Dichloroethane	5824	100	5000	88.28	115	79-120				
1,3,5-Trimethylbenzene	5890	100	5000	357.8	111	80-120				
2-Butanone	13080	200	10000	0	131	60-140				
Benzene	8836	100	5000	3220	112	80-120				
Cyclohexane	6680	100	5000	398.7	126	75-125				S
Ethylbenzene	7200	100	5000	1428	115	80-120				
Isopropylbenzene	5828	100	5000	60.93	115	80-120				
m,p-Xylene	14820	200	10000	3534	113	80-120				
Methylcyclohexane	5759	100	5000	95.44	113	79-123				
Naphthalene	7343	100	5000	492.3	137	70-130				S
n-Propylbenzene	5670	100	5000	169.7	110	75-130				
o-Xylene	7181	100	5000	1664	110	80-120				
Toluene	14600	100	5000	9302	106	80-121				
Xylenes, Total	22000	300	15000	5198	112	80-124				
Surr: 1,2-Dichloroethane-d4	5111	100	*5000*	*0*	*102*	*71-125*		*0*		
Surr: 4-Bromofluorobenzene	5127	100	*5000*	*0*	*103*	*70-125*		*0*		
Surr: Dibromofluoromethane	5129	100	*5000*	*0*	*103*	*74-125*		*0*		
Surr: Toluene-d8	5059	100	*5000*	*0*	*101*	*75-125*		*0*		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14011216
Project: E3CE-0065 Andover Release Site

QC BATCH REPORT

Batch ID: **R160859** Instrument ID **VOA4** Method: **SW8260**

MSD Sample ID: **14011216-13AMSD** Units: **µg/L** Analysis Date: **2/3/2014 10:53 PM**

Client ID: **MW-1** Run ID: **VOA4_140203A** SeqNo: **3521775** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	6297	100	5000	1076	104	80-120	6627	5.11	20	
1,2-Dichloroethane	5607	100	5000	88.28	110	79-120	5824	3.8	20	
1,3,5-Trimethylbenzene	5571	100	5000	357.8	104	80-120	5890	5.56	20	
2-Butanone	12670	200	10000	0	127	60-140	13080	3.22	20	
Benzene	8449	100	5000	3220	105	80-120	8836	4.48	20	
Cyclohexane	6260	100	5000	398.7	117	75-125	6680	6.5	20	
Ethylbenzene	6863	100	5000	1428	109	80-120	7200	4.78	20	
Isopropylbenzene	5330	100	5000	60.93	105	80-120	5828	8.93	20	
m,p-Xylene	14160	200	10000	3534	106	80-120	14820	4.51	20	
Methylcyclohexane	5642	100	5000	95.44	111	79-123	5759	2.05	20	
Naphthalene	7474	100	5000	492.3	140	70-130	7343	1.77	20	S
n-Propylbenzene	5472	100	5000	169.7	106	75-130	5670	3.55	20	
o-Xylene	7053	100	5000	1664	108	80-120	7181	1.79	20	
Toluene	14020	100	5000	9302	94.3	80-121	14600	4.11	20	
Xylenes, Total	21220	300	15000	5198	107	80-124	22000	3.61	20	
Surr: 1,2-Dichloroethane-d4	5026	100	*5000*	*0*	*101*	*71-125*	*5111*	*1.67*	*20*	
Surr: 4-Bromofluorobenzene	4942	100	*5000*	*0*	*98.8*	*70-125*	*5127*	*3.66*	*20*	
Surr: Dibromofluoromethane	5047	100	*5000*	*0*	*101*	*74-125*	*5129*	*1.61*	*20*	
Surr: Toluene-d8	4723	100	*5000*	*0*	*94.5*	*75-125*	*5059*	*6.86*	*20*	

The following samples were analyzed in this batch:

14011216-01A	14011216-03A	14011216-05A
14011216-06A	14011216-07A	14011216-08A
14011216-09A	14011216-10A	14011216-11A
14011216-12A	14011216-13A	14011216-14A
14011216-15A	14011216-16A	14011216-17A
14011216-18A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-14

Client: Apex Companies
Project: E3CE-0065 Andover Release Site
WorkOrder: **14011216**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental

Sample Receipt Checklist

Client Name: **APEX-PORTLAND** Date/Time Received: **31-Jan-14 08:53**

Work Order: **14011216** Received by: **LOT**

Checklist completed by Paresh M. Giga (eSignature) 31-Jan-14 (Date) Reviewed by: Dane J. Wacasey (eSignature) 01-Feb-14 (Date)

Matrices: Groundwater/Water
Carrier name: FedEx

	Yes	No	Not Present
Shipping container/cooler in good condition?	☑	☐	☐
Custody seals intact on shipping container/cooler?	☑	☐	☐
Custody seals intact on sample bottles?	☐	☐	☑
Chain of custody present?	☑	☐	
Chain of custody signed when relinquished and received?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s): 2.2c/2.2c C/U IR1

Cooler(s)/Kit(s): 7167

Date/Time sample(s) sent to storage: 1/31/14 17:15

	Yes	No		
Water - VOA vials have zero headspace?	☑	☐	No VOA vials submitted	☐
Water - pH acceptable upon receipt?	☐	☐	N/A	☑
pH adjusted?	☐	☐	N/A	☑

pH adjusted by: _

Login Notes: Sample - MW-9 & MW-10 - received 1 x Vial each broken. 2 x Trip Blank received not on chain - Logged in on hold. Chain incomplete - Logged in for all analysis.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental

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Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 2

COC ID: 97840

14011216

APEX-PORTLAND: Apex Companies

Project: E3CE-0065 Andover Release Site

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Andover Release Site	A	VOCs (8260) Quail GW Investigation List
Work Order		Project Number	E3CE-0065	B	GRO - VPH OA-1
Company Name	Apex Companies	Bill To Company	Apex Companies	C	
Send Report To	Samuel Jackson	Invoice Attn	Samuel Jackson	D	
Address	3015 SW First Avenue	Address	3015 SW First Avenue	E	
				F	
City/State/Zip	Portland, OR 97201	City/State/Zip	Portland, OR 97201	G	
Phone	(503) 924-4704	Phone	(503) 924-4704	H	
Fax		Fax		I	
e-Mail Address	sjackson@apexcos.com	e-Mail Address	sjackson@apexcos.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-3	1/28/14 JH	12:05	GW	HCl	6	X	X									
2	MW-9		13:35	GW	HCl	6											
3	MW-10		14:10														
4	MW-12		14:40														
5	MW-4		15:25														
6	MW-16	1/28/14	15:50														
7	MW-11	1/29/14	15:15														
8	MW-2	1/29/14	15:40														
9	MW-5	1/30/14	13:50														
10	Dup-1	1/28/14 JH															

Sampler(s) Please Print & Sign: Jace Harris Jace Harris

Shipment Method: FEDEX

Required Turnaround Time: (Check Box) ☑ Std 10 WK Days ☐ 5 WK Days ☒ Other 3day TAT ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Jace Harris	1/30/14	17:30	
Relinquished by:	Date:	Time:	Received by (Laboratory): 1/31/14 853
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: Andover Quail Crossing Groundwater Investigation 1Q2014

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☑ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other / EDD
☐ TRRP CheckList
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
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Chain of Custody Form

Page 2 of 2

COC ID: 97838

ALS Project Manager: | ALS Work Order #: 14011216

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Andover Release Site	A	VOCs (8260) Quail GW Investigation List
Work Order		Project Number	E3CE-0065	B	GRO - VPH OA-1
Company Name	Apex Companies	Bill To Company	Apex Companies	C	
Send Report To	Samuel Jackson	Invoice Attn	Samuel Jackson	D	
Address	3015 SW First Avenue	Address	3015 SW First Avenue	E	
				F	
City/State/Zip	Portland, OR 97201	City/State/Zip	Portland, OR 97201	G	
Phone	(503) 924-4704	Phone	(503) 924-4704	H	
Fax		Fax		I	
e-Mail Address	sjackson@apexcos.com	e-Mail Address	sjackson@apexcos.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-6	1/30/14	14:30	GW	HCl	6	X	X									
2	MW-7		14:55														
3	MW-1		15:20														
4	MW-8		15:55														
5	MW-13		16:20														
6	MW-14		16:45														
7	Dup-2																
8	MW-15	1/28/14	16:35														
9																	
10																	

Sampler(s) Please Print & Sign: Jace Harris

Shipment Method: FEDEX

Required Turnaround Time: (Check Box) ☑ Std 10 WK Days ☐ 5 WK Days ☒ Other 3 day TAT ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Jace Harris	1/30/14	17:30	
Relinquished by:	Date:	Time:	Received by (Laboratory): 1/31/14 853
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: Andover Quail Crossing Groundwater Investigation 1Q2014

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other / EDD
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Date: 1/
Name: —
Company:

CUSTODY SEAL

30/14 Time: 17:30
Jan Hurrs
Apx

Seal Broken By:
MB
Date:
1/31/14

TRK# 0215 8042 4829 6845

FRI – 31 JAN 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

03-Mar-2014

Samuel Jackson
Apex Companies
3015 SW First Avenue
Portland, OR 97201

Tel: (503) 924-4704
Fax:

Re: Colt Court

Work Order: **14021040**

Dear Samuel,

ALS Environmental received 2 samples on 21-Feb-2014 10:25 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 14.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Electronically approved by: Dayna.Fisher

Joni S. Blankfield
Project Manager

Certificate No: T104704231-13-12

ALS Environmental

Date: 03-Mar-14

Client: Apex Companies
Project: Colt Court
Work Order: **14021040**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
14021040-01	2020 N Ruger	Water		2/20/2014 11:55	2/21/2014 10:25	☐
14021040-02	Trip Blank- 090913-55	Trip Blank		2/20/2014	2/21/2014 10:25	☐

Client: Apex Companies
Project: Colt Court
Work Order: 14021040

Case Narrative

A Trip Blank was received; however, it was not listed on the chain of custody for analysis.

Batch R162184, Volatile Organics by Method 8260, Sample 1402878-05: MS/MSD performed on an unrelated sample.

ALS Environmental

Date: *03-Mar-14*

Client: Apex Companies
Project: Colt Court
Sample ID: 2020 N Ruger
Collection Date: 2/20/2014 11:55 AM

Work Order: 14021040
Lab ID: 14021040-01
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VPH - IOWA OA-1			**IA OA-1**			Analyst: **DNR**
VPH - Gasoline Range Organics	**0.075**		**0.050**	**mg/L**	1	2/26/2014 01:42 PM
Surr: 4-Bromofluorobenzene	*117*		*70-130*	*%REC*	1	2/26/2014 01:42 PM
LOW LEVEL VOLATILES - SW8260C			**SW8260**			Analyst: **AKP**
1,2,4-Trimethylbenzene	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
1,2-Dichloroethane	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
1,3,5-Trimethylbenzene	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
2-Butanone	ND		0.0020	mg/L	1	3/1/2014 04:47 AM
Benzene	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
Cyclohexane	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
Isopropylbenzene	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
m,p-Xylene	ND		0.0020	mg/L	1	3/1/2014 04:47 AM
Methylcyclohexane	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
Naphthalene	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
n-Butylbenzene	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
n-Propylbenzene	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
o-Xylene	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
Toluene	ND		0.0010	mg/L	1	3/1/2014 04:47 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2014 04:47 AM
Surr: 1,2-Dichloroethane-d4	*88.9*		*71-125*	*%REC*	1	3/1/2014 04:47 AM
Surr: 4-Bromofluorobenzene	*89.1*		*70-125*	*%REC*	1	3/1/2014 04:47 AM
Surr: Dibromofluoromethane	*83.1*		*74-125*	*%REC*	1	3/1/2014 04:47 AM
Surr: Toluene-d8	*90.1*		*75-125*	*%REC*	1	3/1/2014 04:47 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 14021040
Client: Apex Companies
Project: Colt Court

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID: R161934	**Test Name:** VPH - Iowa OA-1					
14021040-01B	2020 N Ruger	Water	2/20/2014 11:55:00 AM			2/26/2014 01:42 PM
Batch ID: R162184	**Test Name:** Low Level Volatiles - SW8260C					
14021040-01A	2020 N Ruger	Water	2/20/2014 11:55:00 AM			3/1/2014 04:47 AM

ALS Environmental

Date: 03-Mar-14

Client: Apex Companies
Work Order: 14021040
Project: Colt Court

QC BATCH REPORT

Batch ID: **R161934** Instrument ID **FID-9** Method: **IA OA-1**

MBLK Sample ID: **GBLKW1-140226-R161934** Units: **mg/L** Analysis Date: **2/26/2014 11:45 AM**

Client ID: Run ID: **FID-9_140226A** SeqNo: **3543863** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	ND	0.050								
Surr: 4-Bromofluorobenzene	0.1187	0.0050	*0.1*	*0*	*119*	*70-130*		*0*		

LCS Sample ID: **GLCSW1-140226-R161934** Units: **mg/L** Analysis Date: **2/26/2014 11:09 AM**

Client ID: Run ID: **FID-9_140226A** SeqNo: **3543862** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	0.8909	0.050	1	0	89.1	70-130				
Surr: 4-Bromofluorobenzene	0.1217	0.0050	*0.1*	*0*	*122*	*70-130*		*0*		

MS Sample ID: **14021040-01BMS** Units: **mg/L** Analysis Date: **2/26/2014 02:00 PM**

Client ID: **2020 N Ruger** Run ID: **FID-9_140226A** SeqNo: **3543865** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	0.9587	0.050	1	0.07494	88.4	70-130				
Surr: 4-Bromofluorobenzene	0.1184	0.0050	*0.1*	*0*	*118*	*70-130*		*0*		

MSD Sample ID: **14021040-01BMSD** Units: **mg/L** Analysis Date: **2/26/2014 02:18 PM**

Client ID: **2020 N Ruger** Run ID: **FID-9_140226A** SeqNo: **3543866** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
VPH - Gasoline Range Organics	0.9818	0.050	1	0.07494	90.7	70-130	0.9587	2.38	30	
Surr: 4-Bromofluorobenzene	0.121	0.0050	*0.1*	*0*	*121*	*70-130*	*0.1184*	*2.18*	*30*	

The following samples were analyzed in this batch: 14021040-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14021040
Project: Colt Court

QC BATCH REPORT

Batch ID: **R162184** Instrument ID **VOA4** Method: **SW8260**

MBLK Sample ID: **VBLKW-140228-R162184** Units: **µg/L** Analysis Date: **2/28/2014 10:36 PM**

Client ID: Run ID: **VOA4_140228B** SeqNo: **3549887** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
2-Butanone	ND	2.0								
Benzene	ND	1.0								
Cyclohexane	ND	1.0								
Ethylbenzene	ND	1.0								
Isopropylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
Methylcyclohexane	ND	1.0								
Naphthalene	ND	1.0								
n-Butylbenzene	ND	1.0								
n-Propylbenzene	ND	1.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 1,2-Dichloroethane-d4	44.37	1.0	*50*	*0*	*88.7*	*71-125*	*0*			
Surr: 4-Bromofluorobenzene	44.08	1.0	*50*	*0*	*88.2*	*70-125*	*0*			
Surr: Dibromofluoromethane	42.16	1.0	*50*	*0*	*84.3*	*74-125*	*0*			
Surr: Toluene-d8	44.71	1.0	*50*	*0*	*89.4*	*75-125*	*0*			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14021040
Project: Colt Court

QC BATCH REPORT

Batch ID: **R162184** Instrument ID **VOA4** Method: **SW8260**

LCS Sample ID: **VLCSW-140228-R162184** Units: **µg/L** Analysis Date: **2/28/2014 09:47 PM**

Client ID: Run ID: **VOA4_140228B** SeqNo: **3549886** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	50.21	1.0	50	0	100	80-120				
1,2-Dichloroethane	43.73	1.0	50	0	87.5	79-120				
1,3,5-Trimethylbenzene	51.25	1.0	50	0	103	80-120				
2-Butanone	114.5	2.0	100	0	114	60-140				
Benzene	48.2	1.0	50	0	96.4	80-120				
Cyclohexane	56.83	1.0	50	0	114	75-125				
Ethylbenzene	46.19	1.0	50	0	92.4	80-120				
Isopropylbenzene	48.57	1.0	50	0	97.1	80-120				
m,p-Xylene	92.94	2.0	100	0	92.9	80-120				
Methylcyclohexane	50.59	1.0	50	0	101	70-122				
Naphthalene	50.26	1.0	50	0	101	70-130				
n-Butylbenzene	55.32	1.0	50	0	111	75-125				
n-Propylbenzene	53.87	1.0	50	0	108	75-130				
o-Xylene	46.6	1.0	50	0	93.2	80-120				
Toluene	47.53	1.0	50	0	95.1	80-121				
Xylenes, Total	139.5	3.0	150	0	93	80-124				
Surr: 1,2-Dichloroethane-d4	42.45	1.0	*50*	*0*	*84.9*	*71-125*		*0*		
Surr: 4-Bromofluorobenzene	45.47	1.0	*50*	*0*	*90.9*	*70-125*		*0*		
Surr: Dibromofluoromethane	42.21	1.0	*50*	*0*	*84.4*	*74-125*		*0*		
Surr: Toluene-d8	45.11	1.0	*50*	*0*	*90.2*	*75-125*		*0*		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14021040
Project: Colt Court

QC BATCH REPORT

Batch ID: **R162184** Instrument ID **VOA4** Method: **SW8260**

MS Sample ID: **1402878-05AMS** Units: **µg/L** Analysis Date: **2/28/2014 11:50 PM**

Client ID: Run ID: **VOA4_140228B** SeqNo: **3549890** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	53.59	1.0	50	0	107	80-120				
1,2-Dichloroethane	47.9	1.0	50	0	95.8	79-120				
1,3,5-Trimethylbenzene	54.37	1.0	50	0	109	80-120				
2-Butanone	116.6	2.0	100	0	117	60-140				
Benzene	54.15	1.0	50	0	108	80-120				
Cyclohexane	63.44	1.0	50	0	127	75-125				S
Ethylbenzene	49.93	1.0	50	0	99.9	80-120				
Isopropylbenzene	52.83	1.0	50	0	106	80-120				
m,p-Xylene	101.3	2.0	100	0	101	80-120				
Methylcyclohexane	56.87	1.0	50	0	114	70-122				
Naphthalene	58.05	1.0	50	0	116	70-130				
n-Butylbenzene	55.25	1.0	50	0	111	75-125				
n-Propylbenzene	57.61	1.0	50	0	115	75-130				
o-Xylene	49.99	1.0	50	0.3594	99.3	80-120				
Toluene	51.83	1.0	50	0	104	80-121				
Xylenes, Total	151.3	3.0	150	0.3594	101	80-124				
Surr: 1,2-Dichloroethane-d4	44.21	1.0	*50*	*0*	*88.4*	*71-125*		*0*		
Surr: 4-Bromofluorobenzene	45.62	1.0	*50*	*0*	*91.2*	*70-125*		*0*		
Surr: Dibromofluoromethane	43.74	1.0	*50*	*0*	*87.5*	*74-125*		*0*		
Surr: Toluene-d8	44.94	1.0	*50*	*0*	*89.9*	*75-125*		*0*		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Apex Companies
Work Order: 14021040
Project: Colt Court

QC BATCH REPORT

Batch ID: **R162184** Instrument ID **VOA4** Method: **SW8260**

MSD Sample ID: **1402878-05AMSD** Units: **µg/L** Analysis Date: **3/1/2014 12:15 AM**

Client ID: Run ID: **VOA4_140228B** SeqNo: **3549891** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	53.61	1.0	50	0	107	80-120	53.59	0.0207	20	
1,2-Dichloroethane	46.67	1.0	50	0	93.3	79-120	47.9	2.58	20	
1,3,5-Trimethylbenzene	54.86	1.0	50	0	110	80-120	54.37	0.902	20	
2-Butanone	114.8	2.0	100	0	115	60-140	116.6	1.59	20	
Benzene	53.46	1.0	50	0	107	80-120	54.15	1.28	20	
Cyclohexane	63.28	1.0	50	0	127	75-125	63.44	0.243	20	S
Ethylbenzene	49.42	1.0	50	0	98.8	80-120	49.93	1.04	20	
Isopropylbenzene	52.64	1.0	50	0	105	80-120	52.83	0.365	20	
m,p-Xylene	99.28	2.0	100	0	99.3	80-120	101.3	2.03	20	
Methylcyclohexane	56.72	1.0	50	0	113	70-122	56.87	0.26	20	
Naphthalene	58.69	1.0	50	0	117	70-130	58.05	1.09	20	
n-Butylbenzene	56.23	1.0	50	0	112	75-125	55.25	1.76	20	
n-Propylbenzene	57.66	1.0	50	0	115	75-130	57.61	0.0786	20	
o-Xylene	49.6	1.0	50	0.3594	98.5	80-120	49.99	0.79	20	
Toluene	51.35	1.0	50	0	103	80-121	51.83	0.929	20	
Xylenes, Total	148.9	3.0	150	0.3594	99	80-124	151.3	1.62	20	
Surr: 1,2-Dichloroethane-d4	43.1	1.0	*50*	*0*	*86.2*	*71-125*	*44.21*	*2.53*	*20*	
Surr: 4-Bromofluorobenzene	44.92	1.0	*50*	*0*	*89.8*	*70-125*	*45.62*	*1.55*	*20*	
Surr: Dibromofluoromethane	43	1.0	*50*	*0*	*86*	*74-125*	*43.74*	*1.72*	*20*	
Surr: Toluene-d8	44.48	1.0	*50*	*0*	*89*	*75-125*	*44.94*	*1.04*	*20*	

The following samples were analyzed in this batch: 14021040-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 03-Mar-14

Client: Apex Companies
Project: Colt Court
WorkOrder: **14021040**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental

Sample Receipt Checklist

Client Name: **APEX-PORTLAND** Date/Time Received: **21-Feb-14 10:25**

Work Order: **14021040** Received by: **LOT**

Checklist completed by Bethany McDaniel (eSignature) 24-Feb-14 (Date) Reviewed by: Joni S. Blankfield (eSignature) 25-Feb-14 (Date)

Matrices: water
Carrier name: FedEx

	Yes	No	Not Present
Shipping container/cooler in good condition?	☑	☐	☐
Custody seals intact on shipping container/cooler?	☐	☐	☑
Custody seals intact on sample bottles?	☐	☐	☑
Chain of custody present?	☑	☐	
Chain of custody signed when relinquished and received?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s): 0.8C/0.8C c/u IR3

Cooler(s)/Kit(s): 5158

Date/Time sample(s) sent to storage:

	Yes	No	No VOA vials submitted	N/A
Water - VOA vials have zero headspace?	☑	☐	☐	
Water - pH acceptable upon receipt?	☐	☐		☑
pH adjusted?	☐	☐		☑

pH adjusted by: _

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ISOTEK, L.L.C.

4901 West Reno, Suite 200
Oklahoma City, OK 73127-6320
BUS: (405) 948-8880
FAX: (405) 948-6015

CHAIN OF CUSTODY

COMPANY NAME: APEX

PROJECT NO.: 33800/641-04 .003

PROJECT NAME: COLT COURT.

SAMPLER (Signature): [signature]

ANALYSIS REQUESTED: VOCs Quali crosswalk; GRO Quali crosswalk

P.O. #:

INVOICE #:

WATER OR SOIL	DATE	TIME	SAMPLE IDENTIFICATION	VOCs Quali crosswalk	GRO Quali crosswalk	NUMBER OF CONTAINERS	REMARKS
Water	2-20-14	11:55	2020 N. Rugge	X	X	6	
			NOTHING FOLLOWS				

14021040
APEX-PORTLAND: Apex Companies
Project: E3CE-0065 Andover Release Site

REPORT TO: SAM JACKSON

INVOICE TO: SAME.

PHONE: 503 278 9815

FAX:

E-MAIL: sjackson@apexcos.com

CELL:

TOTAL NUMBER OF CONTAINERS: 6

PRESERVATION METHOD USED: ICED / OTHER

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
[signature]	2-20-14 18:00				
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
	2/21/14 1025	[signature]			
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED BY LAB.

ORIGIN ID:TULA

SHIP DATE: 20FEB14
ACTWGT: 27.0 LB MAN
CAD: /PDS1424
DIMS: 25x15x14 IN

BILL RECIPIENT

UNITED STATES US

TO CLENT SEVICES
ALS LABORATORY GROUP
10450 STANCLIFF RD
STE 210
HOUSTON TX 77099
(281) 530-5656

INV:
PO: REF:
DEPT:

FedEx Express

TRK# 0215 8042 4828 7520

FRI - 21 FEB 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

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APEX Environmental - Tulsa, OK

Prepared by Environmental Science Corp.

Project:
Proj #:
Sample Location ID:
Analysis Reqd:
Date:
Time: 17:55

APEX Environmental - Tulsa, OK

Prepared by Environmental Science Corp.

Project:
Proj #:
Sample Location ID:
Analysis Reqd:
Date:
Time: 17:55