REMOVAL SITE EVALUATION (RSE) FOR THE
CHERRYVALE RESIDENTIAL YARDS SITE,
CHERRYVALE, MONTGOMERY COUNTY, KANSAS
KDHE I.D. C306371097

MARCH, 2001

SITE RECONNAISSANCE AND FIELD WORK BY:
Randolph L. Brown, Environmental Geologist, Project Manager and Radiation Safety Officer
Peter Haxton, Environmental Technician and Health and Safety Officer
Travis Kogl, Quality Assurance Officer
REMOVAL SITE EVALUATION (RSE) FOR THE
CHERRYVALE RESIDENTIAL YARDS SITE,
CHERRYVALE, MONTGOMERY COUNTY, KANSAS
KDHE I.D. C306371097

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT (KDHE)
BUREAU OF ENVIRONMENTAL REMEDIATION (BER)
REMEDIAL SECTION, SITE ASSESSMENT UNIT
FORBES FIELD
BUILDING 740
TOPEKA, KANSAS 66620
CHERRYVALE RESIDENTIAL YARDS SITE  
REMOVAL SITE EVALUATION (RSE)  
TABLE OF CONTENTS

SECTION 1.0: INTRODUCTION .................................................. 1  
1.1 Purpose ................................................................. 1  
1.2 Site Description ...................................................... 1  
1.3 Site History ............................................................ 1  
1.4 Previous Investigations .............................................. 3  

SECTION 2.0: SITE GEOLOGY AND SOILS .............................. 4  
2.1 Site Soils Description ............................................... 4  
2.2 Site Geology and Ground Water Pathway ......................... 4  
2.3 Site Hydrology and Surface Water Pathway ..................... 5  

SECTION 3.0: RSE FIELD ACTIVITIES ................................. 5  
3.1 Background Soil Sampling ......................................... 5  
3.2 Residential Yard Sampling ......................................... 5  

SECTION 4.0: RSE ANALYTICAL RESULTS ............................ 6  
4.1 Background Soil Sampling Sample Results ....................... 6  
4.2 Residential Yard Sampling Results ............................... 7  
4.3 Data Validation and Quality Control (QC) ....................... 8  

SECTION 5.0: TARGETS AND SITE RISKS ............................. 9  

SECTION 6.0: RSE SUMMARY AND CONCLUSIONS ................... 9  
6.1 Summary ............................................................... 9  
6.2 Removal Response Considerations ............................... 10  
6.3 Remedial Response Considerations .............................. 10  
6.4 Enforcement Considerations .................................... 11  
6.5 Conclusions .......................................................... 11  

SECTION 7.0: REFERENCES ............................................... 12  

ATTACHMENTS:  
ATTACHMENT A: SITE FIGURES AND TABLES  
Figure 1: Site Location and Background Sample Locations  
Figure 2: X-ray Fluorescence Sample Results Summary  
Figure 3: Laboratory Sample Results Summary  
Tables 1(a) and 1(b): Summary of XRF Wet and Dried Sample Results  
Tables 2(a) and 2(b): Laboratory Sample Results  
Table 3: TCLP Results  
Table 4: Comparison of Laboratory, XRF Wet and Dried Analysis  
with Linear Regression Parameters Summary  
Tables 5(a) and 5(b): XRF Quality Control Parameters Summary  
ATTACHMENT B: PHOTOGRAPHIC DOCUMENTATION  
ATTACHMENT C: LABORATORY ANALYTICAL DATA  
ATTACHMENT D: FIELD XRF ANALYTICAL SHEETS  
ATTACHMENT E: PRELIMINARY REMOVAL SITE EVALUATION/  
REMOVAL PRELIMINARY ASSESSMENT (PRE)  
FORM  
ATTACHMENT F: PORTIONS OF SANBORN MAPS  
ATTACHMENT G: RESIDENTIAL YARD SAMPLING FORMS  
ATTACHMENT H: PRE-CERCLIS CHECKLIST/INITIATION FORMS
SECTION 1.0: INTRODUCTION

1.1 Purpose

This Removal Site Evaluation (RSE) was performed under the authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and consistent with the National Oil and Hazardous Substances Contingency Plan (NCP) 40 CFR § 300. The RSE was performed by the KDHE Bureau of Environmental Remediation (BER) as part of the cooperative agreement with EPA to conduct integrated assessment activities for the federal Fiscal Year (FY) 2000. The purpose of this RSE is to evaluate residential yards for the presence of heavy metal contaminants directly adjacent to the National Zinc site and to identify potential conditions eligible for removal response and/or further removal site evaluation consistent with §§ 300.410-300.415 of the NCP in these areas.

The RSE gathered additional information to support consideration of removal response actions consistent with § 300.300-310 and § 300.410-300.415 of the NCP. The RSE investigation included a site visit and sampling of private yards directly adjacent to the National Zinc site in Cherryvale, Montgomery County, Kansas. The National Zinc site has the EPA identification number (CERCLIS) of KSD980406698.

1.2 Site Description

The RSE sampling area included the residential yards within a two-(2) block area at the southern edge of the National Zinc site. The Brownfields Targeted Assessment (BTA) did not determine the full extent of lead, cadmium and zinc contamination of surficial soils at the southern edge of the National Zinc site. The primary purpose of this RSE was thus intended therefore to conduct an initial screening of the residential yards in this area, namely Front and Martin Streets bounded by Coyle and School Streets on the east and west, respectively. The National Zinc site is located at the northwestern city limits of Cherryvale, Montgomery County, Kansas (see Figure 1) and is located along U.S. Highway 169. Cherryvale is a rural community with some light industry. The population of Cherryvale as of the last census was 2,464 persons (Reference 8). The geographic coordinates of the site are 39° 42' 30.0" North latitude and 96° 25' 00" West longitude. The site is located in Section 8 in Township 32 South, Range 17 East (Reference 1). Figure 2 illustrates the site location from aerial photographs.

1.3 Site History

The National Zinc site consists of approximately 350 acres containing the former National Zinc smelter facility on the northern edge of Cherryvale, Kansas. Historical review from Sanborn Fire Insurance maps and historical archive information available during the BTA indicates that the Edgar Zinc Company began construction of a primary lead and zinc smelter at the site in 1898. The facility initially was
constructed with 1,800 retorts and 3 furnace buildings. By 1908 the smelter facility had 4,800 retorts and 24 furnaces. The 1928 Sanborn Map (the most recent available) also indicates the facility had four (4) massive ore roasters and 24 furnaces in operation, consistent with the 1908 configuration.

The Sanborn Maps indicate the facility as operating “day and night”. This facility was recognized as the largest zinc smelter in the world until World War I. Nearly 500 employees worked at this facility at its peak, and the population of Cherryvale was nearly 8,000 during the early 1900s at the peak of the Edgar Zinc facility production. The Edgar Zinc facility was by far the largest employer and industrial facility in Cherryvale during its operational life. The location of the Frisco Railroad line at the eastern edge of the site in addition to plentiful shallow natural gas from oil and gas production in the local area provided the necessary transportation and energy resources for the operation of the Edgar Zinc facility. At least one half of the demand for primary zinc production was for galvanizing purposes. U.S. Steel Corporation may also have had some ownership interest in the Edgar Zinc Company around 1910. The facility operated as the Edgar Zinc Company until sometime after 1928, when it was reorganized as the National Zinc Company (References 6, 28, 29). Production appears to have declined through the 1930s when most active operations ceased.

Sludges and liquid wastes contaminated with heavy metals were contained in large settling ponds covering approximately 23 acres. The lagoons were used to contain runoff from an estimated 2,000 tons of slag and roasted ore. The National Zinc smelter facility permanently terminated operations on December 24, 1976. Presently, the site contains the encapsulated former lagoon, several abandoned buildings and building foundations, and the remains of the smelter operations.

Incidents of surface water contamination in the 1950s were reported to KDHE by adjacent property owners when contaminated water breached the large pond. On April 1976, the site was investigated by KDHE following complaints from farmers regarding visual surface water contamination in Drum Creek and concern over the possibility of a fish kill or cattle illness from surface water consumption. KDHE personnel also inspected the site on September 27, 1977 for possible surface water or ground water pollution associated with facility run-off and seeps. At the request of KDHE, limited response actions were initiated at the site by the National Zinc Company in October, 1977. Beginning in 1979, approximately 95 million gallons of fluid from the lagoon was treated and discharged into the adjacent Drum Creek. Ore and sludge was removed from the site; some of the remaining sludge (approximately 300 tons) was encapsulated on site. The lagoon was filled with dirt and top soil, treated with lime, and planted with grass. Five monitoring wells were installed in the western and southern edges of the large pond. Analytical results of ground water samples collected in 1982-1984 indicated high levels of cadmium and lead. A restrictive covenant limiting use or development of the property was prepared in 1983 and still governs the site.

In addition, KDHE inspected the site in May 1995 following a City of Cherryvale inquiry into possible restrictive covenant termination and redevelopment of the property. Surface water, soil, sediment, and
sludge/waste samples were obtained by KDHE personnel. Shallow ground water samples were also collected from existing monitoring wells installed around the lagoon. Laboratory analysis revealed contamination of sludge, soil and sediment samples of selected Resource Conservation and Recovery Act (RCRA) heavy metals above the non-residential Risk-Based Standards for Kansas (RSKs). Lead was detected at a maximum of 176,750 mg/kg (RSK = 1,000 mg/kg), cadmium at 2,816 mg/kg (RSK = 1,000 mg/kg), and arsenic at a maximum of 240 mg/kg (RSK = 38 mg/kg). Cadmium was detected in surface and ground water up to 0.111 mg/l, above its maximum contaminant level (MCL) of 0.005 mg/l. In July, 1996, sediment/sludge sampling indicated lead up to 1,786 mg/kg, above its non-residential RSK level of 1,000 mg/kg and cadmium in surface water up to 0.347 mg/l on-site in standing water. Preliminary Assessment (PA) and Site Inspection forms were completed by KDHE in 1981 and the site was assigned the CERCLA Identification System (CERCLIS) identification number KSD980406698. The PA/SI forms are included in Appendix L. The site is currently also in KDHE’s Enforcement/Negotiation program to gather and review information pertaining to potential responsible parties (PRPs) for the National Zinc site.

The residential areas evaluated for the RSE were not part of the Edgar Zinc works and facility itself. According to historical Sanborn maps this area contained residential areas, the Edgar Chapel, the Cherryvale Butter and Cheese Factory and a hay and feed warehouse/store. Directly across Martin street to the north from the residential area was an ore store house, pattern storage and a “chemical laboratory” most likely performing assays on ore samples, (see Attachment F) which was part of the Edgar Zinc/National Zinc facility and was owned by National Zinc. From a review of available property ownership information, National Zinc owned the land immediately north of the residential area (National Zinc “Tract 4") but did not appear to own the land now containing the residential area.

1.4 Previous Investigations

KDHE conducted extensive sampling of the National Zinc site during the Brownfields Targeted Assessment (BTA) Report. The BTA identified several data gaps in the surficial soil sampling, the largest being the area bounded by the residential properties evaluated for this RSE. The BTA Report was completed by KDHE in 1999 and approved by EPA in April, 2000. Approximately 659 in-situ X-ray fluorescence (XRF) soil analysis were conducted at the site during the 1999 BTA (this number does not include standards/calibration or other QC analyses). Of these, approximately 141 samples were submitted for laboratory analysis. Subsurface waste profile samples, surface water, sediment and ground water samples were also obtained at the site. Surface soil XRF detections ranged from non-detect through much of the northeastern and southwestern portions of the site to a maximum of 35,700 parts per million (ppm or mg/kg) lead at location N 6200 E 6700. Cadmium was not detected in excess of its 1,000 mg/kg non-residential RSK value, although it was detected above its residential RSK level of 39 mg/kg across nearly all of the areas also indicating elevated lead levels. Arsenic also exceeded its non-residential RSK value of 86 mg/kg, at a maximum concentration of 306 mg/kg.
SECTION 2.0: SITE GEOLOGY AND SOILS

2.1 Soils

The undisturbed areas of the site (primarily in the northeast half of the site) are typically underlain by the Kenoma series soils. The Kenoma soils are generally deep, moderately well drained, very slowly permeable soils on uplands, of 0 to 2 percent slopes. The surface layer (A horizon) typically consists of a dark grayish brown silt loam about 6-12 inches thick. The upper portion of the subsoil layer (B horizon) is typically 9 inches thick and consists of very dark grayish brown to grayish brown silty clay. The lower portion of the subsoil layer is typically 40 inches thick and consists of dark yellowish brown to dark brown to reddish brown silty clay. Typical depth of Kenoma soils averages 60 inches or greater. The southern edge of the site is also within the Dennis series, but the native soil profile for this series is very similar to the Kenoma series. No C horizon is recognized because of the generally deep (60 inches) thickness of these soil types.

The unified soil classification of the A horizon is CL to CL-ML to ML (18-29 % clay) with a plasticity index range of 3-18 and a liquid limit range of 24-40. The unified soil classification of the B horizon is CH (40-60 % clay) with a plasticity index range of 30-48 and a liquid limit range of 50-75. Available water content is high (0.10-0.24). Surface runoff is slow (0.2-0.06 in/hr) and shrink-swell potential is high, especially below 12 inches. Permeability generally ranges from 0.2 to 0.6 inches/hour (Reference 3).

2.2 Geology

The site is located in a broad, low-relief upland of the Osage Questas physiographic area of southeast Kansas. Bedrock of Pennsylvanian age is present at the base of the soil profile. During the installation of temporary monitoring wells during at the National Zinc BTA, bedrock was typically encountered between 14 feet (TW-1) and 3.5 feet (TW-8).

The bedrock units underlying the site are believed to be composed of sandstone and limestone of the Cherryvale Shale and Dennis Limestone Formations of the Kansas City Group. A yellowish to reddish-brown sandstone was typically encountered as the bedrock layer upon auger refusal. Ground water occurrence within the Cherryvale Shale and Dennis Formations is typically localized with very low (less than 3 gallons per minute) yields of generally poor quality. These bedrock units typically yield little to no water except in the shallow weathered zone near the upper bedrock surface. Oil field intrusion of brines in the site area from oil production dating back to the early 1900s has impacted shallow ground water quality regionally in this portion of Southeast Kansas (Reference 4).

Ground water occurrence in the site area is primarily restricted to unconsolidated alluvial deposits of the Verdigris River and Cherry Creek. The City of Cherryvale receives water from a surface intake on Big
Hill Lake located approximately five (5) miles east of Cherryvale. Significant karst terrain does not exist in the site area given the sequential shale-sandstone-limestone stratigraphy of the bedrock units. The City of Cherryvale and Montgomery County Rural Water District # 12 supplies water to private residences surrounding the site.

2.3 Site Hydrology and Surface Water Pathway

Drainage from the site is to the unnamed tributary which converges with the drainage from the National Zinc site approximately 500 feet north of Martin Street at the western end of the Cherryvale Yards site to the north of the former Cherryvale Rodeo Grounds. This unnamed tributary converges with Drum Creek approximately 3/4 mile to the west of U.S. 169 highway. The surface water pathway with regards to the National Zinc site will be discussed in greater detail in the National Zinc ESI Report.

SECTION 3.0: RSE FIELD ACTIVITIES

The Phase II RSE field activities included: (1) a site visit, (2) collection of four (4) background soil samples to determine a statistical background mean, and (3) sampling of residential yards immediately adjacent to the National Zinc site in the area of concern. KDHE’s Niton 733 X-ray fluorescence unit (XRF) was utilized to field analyze surficial soil and subsurface soil boring samples. A site-specific Quality Assurance Project Plan (QAPP) was developed and followed for the RSE activities.

3.1 Background Sampling

Background samples were obtained at four (4) locations during the RSE. These were in locations either up- or side-wind of the former National Zinc site, topographically uphill and located in similar soil types. One sample was obtained from roughly the center of the Cherryvale City Park. Another sample was obtained approximately 50 feet northeast of the intersection of Roads 5200 and 5700 (Olive Street), another at the eastern edge of the city cemetery, and one approximately 50 feet southeast of the intersection of Carson Road and Grand Avenue. Samples were obtained with clean steel trowels from 0-6" and placed directly into prepared 4-oz glass jars. Laboratory analysis alone was performed to determine a definitive level for background range and thus XRF analysis was not performed on the background samples. Background samples were submitted to the KDHE’s Division of Health and Environment Laboratory (DHEL) for RCRA metals analysis by EPA Methods 6010 and 7471 (mercury).

3.2 Residential Yard Sampling

Eleven (11) residential yards were evaluated during the RSE. Samples were obtained by removing soil from 0-6" below ground surface at each sample location with a clean steel trowel and placing the sample
in a marked 1 quart zip-lock freezer bag. Samples were analyzed in the field with KDHE's Niton Model 733 X-ray fluorescence (XRF) analyzer using the $^{109}$Cd sealed radioactive source. A split laboratory sample was also obtained and placed in a 4-oz. prepared glass laboratory jar. Since cadmium or other constituents were not detected using the sealed $^{241}$Am source with interference from elevated lead levels, use of the $^{241}$Am source was discontinued early in the RSE field work. Laboratory samples were submitted to compare low, medium and higher XRF lead detections by EPA Method 6200 with laboratory results analyzed by EPA Method 6010. Bagged samples were also analyzed by XRF after a minimum of four (4) hours drying period in KDHE's laboratory soil sample drying oven at 60-80° C. All bagged XRF samples were analyzed by analyzing three (3) discrete locations across the bag and calculating a linear average between the three separate analyses per bag. The analysis time was reduced to 30 source seconds (Ss) early in the RSE as the difference in precision and accuracy from a 60 Ss analysis was not determined to be significant. A total of 54 wet and 57 dried samples were analyzed by XRF. A total of 170 separate analyses were performed on wet samples and 180 analyses were performed on dried samples (including field duplicates).

Trowels were decontaminated after each use by soaking in a deionized water and alcanox detergent solution, triple rinsing with deionized water and then drying with disposable paper towels prior to re-use. One rinsate sample was obtained from decontamination of sampling equipment during the RSE. The rinsate sample was submitted to DHEL for RCRA metals analysis. Laboratory samples were submitted to Continental Analytical Services (CAS) laboratory in Salina, Kansas for analysis by EPA Method 6010 (except mercury) and EPA Method 7471 (mercury). Toxicity Characteristic Leachate Procedure (TCLP) was also performed on selected laboratory samples, including the maximum detections. Laboratory samples were refrigerated until XRF analysis was completed and appropriate representative laboratory confirmation samples selected. A total of 19 laboratory samples were analyzed for a confirmatory rate of 33 % for both dried and undried (wet) samples.

SECTION 4.0: ANALYTICAL RESULTS

4.1 Background Sample Results

Background sample results are included in table form in Attachment A. A three times (3X) background concentration was calculated by determining the mean concentration of all of the background samples for the constituents detected. Lead, arsenic, and cadmium appear to be the primary constituents of concern at the site. The table also lists the 3X background maximum (3XMAX) concentration by multiplying the highest concentration for each constituent amongst the four (4) background samples by a factor of three (3). The lead 3X mean concentration was calculated to be 130.1 mg/kg, and the lead 3XMAX concentration was calculated to be approximately 627 mg/kg. The cadmium 3X mean concentration was calculated to be 2.6 mg/kg, and the 3XMAX concentration was calculated to be 16.6
mg/kg. The arsenic 3X mean concentration was calculated to be 6.7 mg/kg, and the 3XMAX concentration was calculated to be 24.0 mg/kg.

4.2 Residential Yard Sample Results

Every residential yard sampled during the RSE indicated lead levels in excess of KDHE’s Risk-Based Levels for Kansas (RSKs) of 400 mg/kg for lead. A four-point (four discrete locations) background sampling strategy was utilized to determine mean background concentrations for lead, cadmium, chromium and mercury. Background sample locations are included in Figure 3.

XRF sample results are included in Figure 2, and laboratory sample results are included in Figure 3. The following residences indicated lead above 400 mg/kg in residential yard samples: 511 and 619 Martin, 509, 513, 520, 524, 610, 617, 618, 620, and 621 Front Street. 11 residential yards sampled during the RSE were identified with lead contamination in excess of the KDHE residential RSK level of 400 mg/kg. The maximum laboratory detection for lead was 3,680 mg/kg at 618 Front # 2. The maximum XRF detection for lead (dried) was 2,760 at 618 Front # 1 (laboratory value of 3,190 mg/kg). The 3XMAX lead concentration of 627 mg/kg was also exceeded in at least one sample in each of these yards. Samples obtained along the south side of Front Street also indicate that residential areas to the south of Front Street may also have lead levels in excess of 400 mg/kg. The full extent of impacted yards to the source of the site was not identified during this RSE. A Phase II RSE is recommended to further assess residential yards south to West First Street between Catherine and Coyle Streets to better define the area of impacted yards.

Cadmium was detected above its residential RSK of 39 mg/kg at 619 Martin # 5 (180 mg/kg), 618 Front #1 (41 mg/kg), 618 Front #2 (121 mg/kg) and in the alley south of Martin (Martin Alley #2) at 40.8 mg/kg. These cadmium levels are also in excess of the 3X MAX concentration of 16.2 mg/kg. The 3XMAX concentration for arsenic was calculated to be 24 mg/kg. Four (4) samples indicated levels above 3XMAX, 618 Front #1 (31.3 mg/kg), 618 Front #2 (33.7 mg/kg), 618 Front # 1 (26.8 mg/kg) and Martin Alley # 2 (31.4 mg/kg). Mercury was detected above its 3XMAX level of 0.3 mg/kg in several samples but was not detected at or above its residential RSK level of 2 mg/kg. The data collected for the RSE indicates that elevated levels of cadmium and arsenic are only present above residential RSKs and 3XMAX concentrations coincident with lead levels identified in excess of 1,000 mg/kg.

Toxicity Characteristic Leachate Procedure (TCLP) was performed on eight (8) samples for lead by EPA Method 1311. The maximum value detected was 4.97 mg/l on sample 610 Front #1, which is below the 5.0 mg/l TCLP threshold for lead established in § 261.24 of RCRA. This was also the only sample in excess of 3.0 mg/l TCLP lead in all of the TCLP samples. The soil would not likely be a RCRA characteristic hazardous waste (D008) when bulked and a composite sample obtained.
4.3 Data Validation and Quality Control (QC) Sample Results

A linear regression was calculated for the XRF vs. laboratory lead data obtained at the Cherryvale Residential Yards site. Both wet and dried samples were compared with the laboratory results. A coefficient of correlation of $r^2 = 0.971$ was calculated for wet samples and a value of $r^2 = 0.924$ was calculated for dried samples. According to EPA Method 6200, a coefficient of correlation of $r^2 = 0.9$ or higher can be considered quantitative definitive level data. A coefficient of correlation of $r^2 = 0.7$ to $r^2 = 0.9$ can be considered quantitative screening level data. The coefficient of correlation for lead calculated for the Cherryvale Residential Yards site indicates that the XRF data obtained from the XRF analysis of bagged surficial soil samples (both in-field and later dried) during the RSE can be considered as approaching definitive level data since the coefficient of correlation is above 0.9.

A total of 13 field duplicates (5 wet and 8 dried) were analyzed with the Niton XRF unit during the RSE. The average relative standard deviation (RSD) was calculated to be 2.59% for all field duplicate analyses during the RSE. The average RSD for all duplicate field analyses was well within the EPA Method 6200 20% RSD acceptable value. The maximum RSD calculated was only 5.0%. The percent difference (PD) between the National Institute of Standards and Testing (NIST) certified lead standards used during the RSE Niton XRF analyzed value indicated a maximum PD of 14.29% and an average PD of 9.29%. The acceptable PD proposed by EPA Method 6200 is also 20%, and therefore all of the PD values measured as well as the average PD value during the RSE are within EPA Method 6200 acceptance criteria. A total of 22 NIST standards were also analyzed during the RSE. Since the inferential statistics for RSD and PD are within acceptance criteria for EPA Method 6200, all XRF data obtained during the Cherryvale Residential Yards RSE is accepted at 100% completeness (Reference 12). No significant instrument or sampling QC problems were therefore identified during the RSE.

Laboratory data was validated consistent with KDHE’s Quality Management Plan (QMP) by a member of the Site Assessment Unit of KDHE/BER who had no direct involvement with the acquisition of data for this project. Laboratory data was determined to be acceptable at 100% completeness. A rinsate sample was collected during decontamination of steel trowels and submitted to the Division of Health and Environment Laboratories (DHEL) for analysis as an in-field QC sample. Lead, cadmium, and arsenic were not detected in the rinsate sample. Therefore no serious impact from cross-contamination of sampling equipment or compromise of QC parameters was identified from the RSE data.

SECTION 5.0: TARGETS AND IDENTIFIED SITE RISKS

The following residences indicated lead above 400 mg/kg in residential yard samples: 511 and 619 Martin, 509, 513, 520, 524, 610, 617, 618, 620, and 621 Front Street. 11 residential yards sampled during the RSE were identified with lead contamination in excess of the KDHE residential RSK level of
400 mg/kg. Using the 1990 census value of 2.42 persons per occupied household/housing unit, a value of 27 persons is calculated in excess of KDHE's residential RSK level for lead. Cadmium and arsenic were also detected above respective residential RSKs, but only in samples with coincident lead levels of 1,000+ mg/kg. Several of the residences were observed to have children either living at the residence or visiting daily. The full extent of impacted yards to the source of the site was not identified during this RSE. A Phase II RSE is recommended to further assess residential yards south to West First Street between Catherine and Coyle Streets to better define the area of impacted yards. Since the site is a residential area, access is not limited to impacted yard areas.

SECTION 6.0: RSE SUMMARY AND CONCLUSIONS

6.1 Summary

The RSE field activities included: (1) a site visit; (2) collection of background samples, and (3) sampling of residential yards adjacent to the National Zinc site. KDHE's Niton 733 X-ray fluorescence unit (XRF) was utilized to field analyze surficial soil samples. Multiple heavy metals, especially lead, arsenic and cadmium were identified to be present in residential yards in excess of background and KDHE residential RSK levels.

In addition, eleven (11) residences indicated areas of impacted surficial soil in residential yards above KDHE's residential RSK level of 400 mg/kg. Based on information gathered during the RSE, eligible conditions exist for further removal response consistent with §§ 300.410-300.415 of the NCP. The specific conditions identified at the site consistent with § 300.415(b)(2) are:

*Actual or potential exposure from oil releases or hazardous substances* exists at the site from elevated levels of primarily lead and cadmium from abandoned smelter operations. Private residential yards adjacent to the smelter works have been identified to be impacted with lead above residential RSKs (§ 300.415(b)(2)(i));

*Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released* is present since continued release of metals to surface water, soil and sediment will occur unless wastes are stabilized or covered; (§ 300.415(b)(2)(v));

*No KDHE or other State mechanism is in place* to address the wastes present at the site or impacted residential yards (§ 300.415(b)(2)(vii)); and

*Other factors* include the easy access to the site with no access or security limitations to the smelter site or areas of impacted residential yards (§ 300.415(b)(2)(viii)). Approximately 2,500 persons live within one mile of the site.
The site thus appears to qualify for further removal response actions at the site consistent with § 300.415 of the NCP considering the above factors from the NCP. Furthermore, the site may also qualify for further remedial response actions consistent with § 300.420-300.425 of the NCP (see Section 6.3 below). Initial response options and recommendations are discussed below.

**6.2 Removal Response Considerations**

Removal response at the site should address impacted residential yards and areas of elevated lead levels along publically accessible areas of Front and Martin Streets. Potential response actions to impacted private yards include excavation or covering in those areas identified through this KDHE RSE Report. Maximum levels of lead detected at the site did not fail TCLP threshold criteria, and any removed soils should not need to be handled as potential RCRA characteristic hazardous waste (D008). High-volume (high-vol) air monitoring for heavy metal particulates should also be conducted before, during and after any response actions to assure transmission of heavy metals does not occur to nearby residents.

Additional sampling is also appropriate to evaluate additional residential yards potentially impacted by heavy metal contamination. Deeper soil sampling across the site may also assist in computing soil removal volumes if physical removal is contemplated, however deeper sampling will be of limited use if clean topsoil will be brought in to cover impacted areas instead (a common approach to addressing larger areas of impacted residential yards).

**6.3 Remedial Response Considerations**

The Expanded Site Inspection (ESI) for the National Zinc site is also underway, and data from this RSE will be used to support ESI findings and conclusions consistent with § 300.420-300.425 of the NCP especially with regards to the soil pathway. The National Zinc site will be re-evaluated by the Hazard Ranking System (HRS) at the conclusion of the ESI to determine its eligibility for inclusion on the National Priorities List (NPL).

Response actions to residential yards should be consistent with the overall remedial actions for the National Zinc site. If the site is determined not to be eligible for NPL listing, the identified impacted residential yards should be addressed through further time-critical removal response consistent with the NCP. A more comprehensive target search and evaluation beyond the scope of this RSE will be conducted during the ESI to fully evaluate potential and actual target populations and environmental conditions impacted by releases or a threat of release of hazardous substances from the site. Eligibility of the site for inclusion on the National Priorities List (NPL) consistent with § 300.425 of the NCP may greatly influence the priority of future site-wide response actions.
6.4 Enforcement Considerations

An initial search of potentially responsible parties (PRPs) has been completed by EPA Region VII. No viable PRPs have been identified to date. EPA may elect to continue PRP search activities after completion of the ESI/HRS/NPL listing and/or removal response activities.

6.5 Conclusions

Contamination in residential yards identified in this RSE appears to present a significant threat to human health and the environment from actual or potential releases or threat of release of hazardous substances, especially lead, cadmium and arsenic, to residents in the area of the site. Releases of heavy metals have been attributed to the National Zinc site located directly adjacent to the north of the residential area targeted for this RSE. Removal response actions at these private yards are recommended to be the first priority for removal response actions at the site.

Further removal site evaluation consistent with § 300.415 of the NCP is recommended to further evaluate residential yards south of the area identified in this RSE. KDHE is currently in the planning stages of the Phase II RSE to evaluate yards south to First Street between Catherine and Coyle Streets.

The site may also qualify for further remedial site assessment consistent with § 300.420 of the NCP. The results of this RSE and previous data will be used by KDHE to update and re-evaluate the Hazard Ranking System II (HRS II) Pre-Score and in completing the ESI to determine if the entire National Zinc site is a candidate for listing on the National Priorities List (NPL) consistent with § 300.420-300.425 of the NCP. Given the size and nature of the site, response actions site-wide may be more appropriately addressed through listing the site on the NPL if a cooperative PRP is not identified to conduct response actions under KDHE or EPA oversight.
SECTION 7.0: REFERENCES


5. KDHE Interviews with Mr. Roy Riedner, City Manager of Cherryvale, May-December, 1999.


11. Kansas Department of Transportation State and County Maps and Aerial Photographs.


16. U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry:


ATTACHMENT A

FIGURES AND TABLES
FIGURE 1
SITE AREA MAP
WITH SOIL BACKGROUND
SAMPLE LOCATIONS
Cherryvale Residential Yards Site
Removal Site Evaluation
Cherryvale, Kansas
March 2001
Approximate Scale: 1 inch = 1400 feet
Explanation:
- XRF Sample Location
- Screening concentration < 400 mg/kg
- Screening concentration 400 - 1000 mg/kg
- Screening concentration >1000 mg/kg

FIGURE 2
X-Ray Fluorescence
Soil Screening Locations
Cherryvale Residential Yards Site
Removal Site Evaluation
Cherryvale, Kansas
March, 2001
Explanation:
- Soil Sample Location
- Concentrations below Kansas RSK-Based Standards for residential soils
- Concentrations greater than Kansas RSK-Based Standards for residential soils
- All analytical results given in milligrams per kilogram (mg/kg).
- Concentrations in red are greater than Kansas RSK-Based Standards for residential soils.
- Constituents in red are also elevated above the three times (3X) background concentration.

FIGURE 3
Soil Sample Analytical Results
Cherryvale Residential Yards Removal Site Evaluation
Cherryvale, Kansas
March, 2001

Approximate scale: 1 inch = 150 feet
<table>
<thead>
<tr>
<th>Sample I.D.:</th>
<th>Run Time (Ss):</th>
<th>Source:</th>
<th>Lead (Wet) (mg/kg):</th>
<th>Comments/Three Point Average Concentration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>509 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>723 ± 61</td>
<td></td>
</tr>
<tr>
<td>509 Front #1</td>
<td>32</td>
<td>Cd-109</td>
<td>413 ± 37</td>
<td></td>
</tr>
<tr>
<td>509 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>506 ± 51</td>
<td>Ave.=547.3</td>
</tr>
<tr>
<td>509 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>542 ± 57</td>
<td></td>
</tr>
<tr>
<td>509 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>752 ± 75</td>
<td></td>
</tr>
<tr>
<td>509 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>595 ± 60</td>
<td>Ave.=629.7</td>
</tr>
<tr>
<td>509 Front #5</td>
<td>31</td>
<td>Cd-109</td>
<td>295 ± 45</td>
<td></td>
</tr>
<tr>
<td>509 Front #5</td>
<td>31</td>
<td>Cd-109</td>
<td>257 ± 42</td>
<td></td>
</tr>
<tr>
<td>509 Front #5</td>
<td>35</td>
<td>Cd-109</td>
<td>349 ± 49</td>
<td>Ave.=300.3</td>
</tr>
<tr>
<td>513 Front #1</td>
<td>63</td>
<td>Cd-109</td>
<td>485 ± 65</td>
<td></td>
</tr>
<tr>
<td>513 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>472 ± 49</td>
<td></td>
</tr>
<tr>
<td>513 Front #1</td>
<td>39</td>
<td>Cd-109</td>
<td>426 ± 53</td>
<td>Ave.=461.0</td>
</tr>
<tr>
<td>513 Front #2</td>
<td>32</td>
<td>Cd-109</td>
<td>75.1 ± 29</td>
<td></td>
</tr>
<tr>
<td>513 Front #2</td>
<td>35</td>
<td>Cd-109</td>
<td>113 ± 30</td>
<td></td>
</tr>
<tr>
<td>513 Front #2</td>
<td>32</td>
<td>Cd-109</td>
<td>51 ± 25</td>
<td>Ave.=79.7</td>
</tr>
<tr>
<td>513 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>839 ± 62</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>513 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>520 ± 49</td>
<td></td>
</tr>
<tr>
<td>513 Front #3</td>
<td>38</td>
<td>Cd-109</td>
<td>513 ± 50</td>
<td>Ave.=624.0</td>
</tr>
<tr>
<td>513 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>247 ± 45</td>
<td></td>
</tr>
<tr>
<td>513 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>276 ± 45</td>
<td></td>
</tr>
<tr>
<td>513 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>254 ± 40</td>
<td>Ave.=259.0</td>
</tr>
<tr>
<td>513 Front #5</td>
<td>31</td>
<td>Cd-109</td>
<td>271 ± 44</td>
<td></td>
</tr>
<tr>
<td>513 Front #5</td>
<td>31</td>
<td>Cd-109</td>
<td>327 ± 46</td>
<td></td>
</tr>
<tr>
<td>513 Front #5</td>
<td>45</td>
<td>Cd-109</td>
<td>324 ± 37</td>
<td>Ave.=307.3</td>
</tr>
<tr>
<td>520 Front #1</td>
<td>41</td>
<td>Cd-109</td>
<td>647 ± 52</td>
<td></td>
</tr>
<tr>
<td>520 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>611 ± 61</td>
<td></td>
</tr>
<tr>
<td>Sample I.D.:</td>
<td>Run Time (Ss):</td>
<td>Source:</td>
<td>Lead (Wet) (mg/kg):</td>
<td>Comments/Three Point Average Concentration:</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td>---------</td>
<td>---------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>520 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>456 ± 56</td>
<td>Ave. = 571.3</td>
</tr>
<tr>
<td>520 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>492 ± 55</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>520 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>460 ± 54</td>
<td></td>
</tr>
<tr>
<td>520 Front #3</td>
<td>41</td>
<td>Cd-109</td>
<td>630 ± 52</td>
<td>Ave. = 527.3</td>
</tr>
<tr>
<td>520 Front #5</td>
<td>34</td>
<td>Cd-109</td>
<td>859 ± 75</td>
<td></td>
</tr>
<tr>
<td>520 Front #5</td>
<td>34</td>
<td>Cd-109</td>
<td>259 ± 36</td>
<td></td>
</tr>
<tr>
<td>520 Front #5</td>
<td>37</td>
<td>Cd-109</td>
<td>1090 ± 74</td>
<td></td>
</tr>
<tr>
<td>524 Front #5</td>
<td>34</td>
<td>Cd-109</td>
<td>994 ± 75</td>
<td>Ave. = 800.5 (Duplicate)</td>
</tr>
<tr>
<td>524 Martin #1</td>
<td>49</td>
<td>Cd-109</td>
<td>176 ± 28</td>
<td>(Actual address 524 Front)</td>
</tr>
<tr>
<td>524 Martin #1</td>
<td>31</td>
<td>Cd-109</td>
<td>180 ± 38</td>
<td></td>
</tr>
<tr>
<td>524 Martin #1</td>
<td>31</td>
<td>Cd-109</td>
<td>146 ± 43</td>
<td>Ave. = 167.3</td>
</tr>
<tr>
<td>524 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>1090 ± 85</td>
<td></td>
</tr>
<tr>
<td>524 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>506 ± 48</td>
<td></td>
</tr>
<tr>
<td>524 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>470 ± 45</td>
<td>Ave. = 688.7</td>
</tr>
<tr>
<td>524 Front #3</td>
<td>37</td>
<td>Cd-109</td>
<td>723 ± 56</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>524 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>409 ± 45</td>
<td></td>
</tr>
<tr>
<td>524 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>1000 ± 80</td>
<td>Ave. = 710.7</td>
</tr>
<tr>
<td>524 Front #4</td>
<td>34</td>
<td>Cd-109</td>
<td>666 ± 94</td>
<td></td>
</tr>
<tr>
<td>524 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>966 ± 69</td>
<td></td>
</tr>
<tr>
<td>524 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>618 ± 50</td>
<td>Ave. = 750.0</td>
</tr>
<tr>
<td>536 Martin</td>
<td>31</td>
<td>Cd-109</td>
<td>134 ± 31</td>
<td>(Actual address 536 Front)</td>
</tr>
<tr>
<td>536 Martin</td>
<td>31</td>
<td>Cd-109</td>
<td>161 ± 37</td>
<td></td>
</tr>
<tr>
<td>536 Martin</td>
<td>31</td>
<td>Cd-109</td>
<td>144 ± 34</td>
<td>Ave. = 146.3</td>
</tr>
<tr>
<td>610 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>804 ± 71</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>610 Front #1</td>
<td>37</td>
<td>Cd-109</td>
<td>818 ± 68</td>
<td></td>
</tr>
<tr>
<td>610 Front #1</td>
<td>33</td>
<td>Cd-109</td>
<td>913 ± 74</td>
<td>Ave. = 845.0</td>
</tr>
<tr>
<td>610 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>488 ± 61</td>
<td></td>
</tr>
<tr>
<td>610 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>319 ± 35</td>
<td></td>
</tr>
<tr>
<td>Sample I.D.:</td>
<td>Run Time (Ss):</td>
<td>Source:</td>
<td>Lead (Wet) (mg/kg):</td>
<td>Comments/Three Point Average Concentration:</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------</td>
<td>---------</td>
<td>---------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>610 Front #2</td>
<td>35</td>
<td>Cd-109</td>
<td>317 ± 34</td>
<td>Ave. = 374.7</td>
</tr>
<tr>
<td>617 Front #1</td>
<td>37</td>
<td>Cd-109</td>
<td>1150 ± 65</td>
<td></td>
</tr>
<tr>
<td>617 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>1280 ± 84</td>
<td></td>
</tr>
<tr>
<td>617 Front #1</td>
<td>33</td>
<td>Cd-109</td>
<td>1330 ± 76</td>
<td>Ave. = 1,253.3</td>
</tr>
<tr>
<td>617 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>724 ± 54</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>617 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>837 ± 60</td>
<td></td>
</tr>
<tr>
<td>617 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>861 ± 73</td>
<td>Ave. = 807.3</td>
</tr>
<tr>
<td>617 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>523 ± 55</td>
<td></td>
</tr>
<tr>
<td>617 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>637 ± 67</td>
<td></td>
</tr>
<tr>
<td>617 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>740 ± 81</td>
<td>Ave. = 633.3</td>
</tr>
<tr>
<td>617 Front #4</td>
<td>38</td>
<td>Cd-109</td>
<td>495 ± 51</td>
<td></td>
</tr>
<tr>
<td>617 Front #4</td>
<td>35</td>
<td>Cd-109</td>
<td>512 ± 52</td>
<td></td>
</tr>
<tr>
<td>617 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>766 ± 66</td>
<td>Ave. = 591.0</td>
</tr>
<tr>
<td>617 Front #5</td>
<td>37</td>
<td>Cd-109</td>
<td>1530 ± 90</td>
<td></td>
</tr>
<tr>
<td>617 Front #5</td>
<td>34</td>
<td>Cd-109</td>
<td>2000 ± 100</td>
<td>Ave. = 1,465.6</td>
</tr>
<tr>
<td>617 Front #5</td>
<td>31</td>
<td>Cd-109</td>
<td>867 ± 76</td>
<td></td>
</tr>
<tr>
<td>617 Front #6</td>
<td>31</td>
<td>Cd-109</td>
<td>928 ± 60</td>
<td></td>
</tr>
<tr>
<td>617 Front #6</td>
<td>31</td>
<td>Cd-109</td>
<td>812 ± 66</td>
<td></td>
</tr>
<tr>
<td>617 Front #6</td>
<td>34</td>
<td>Cd-109</td>
<td>971 ± 68</td>
<td></td>
</tr>
<tr>
<td>617 Front #6</td>
<td>31</td>
<td>Cd-109</td>
<td>800 ± 65</td>
<td>Ave. = 877.8</td>
</tr>
<tr>
<td>618 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>2050 ± 100</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>618 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>1240 ± 74</td>
<td></td>
</tr>
<tr>
<td>618 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>2460 ± 110</td>
<td>Ave. = 1,916.7</td>
</tr>
<tr>
<td>618 Front #2</td>
<td>33</td>
<td>Cd-109</td>
<td>1780 ± 94</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>618 Front #2</td>
<td>33</td>
<td>Cd-109</td>
<td>1790 ± 96</td>
<td></td>
</tr>
<tr>
<td>618 Front #2</td>
<td>33</td>
<td>Cd-109</td>
<td>1850 ± 97</td>
<td>Ave. = 1,806.7</td>
</tr>
<tr>
<td>618 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>77 ± 27</td>
<td></td>
</tr>
<tr>
<td>Sample I.D.</td>
<td>Run Time (Ss)</td>
<td>Source</td>
<td>Lead (Wet) (mg/kg):</td>
<td>Comments/Three Point Average Concentration:</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------</td>
<td>---------</td>
<td>---------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>618 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>618 ± 25</td>
<td></td>
</tr>
<tr>
<td>618 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>1150 ± 82</td>
<td></td>
</tr>
<tr>
<td>618 Front #3</td>
<td>38</td>
<td>Cd-109</td>
<td>1100 ± 73</td>
<td></td>
</tr>
<tr>
<td>618 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>104 ± 26</td>
<td>Ave. = 502.5</td>
</tr>
<tr>
<td>621 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>435 ± 47</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>621 Front #1</td>
<td>41</td>
<td>Cd-109</td>
<td>416 ± 40</td>
<td></td>
</tr>
<tr>
<td>621 Front #2</td>
<td>42</td>
<td>Cd-109</td>
<td>365 ± 41</td>
<td>Ave. = 405.3</td>
</tr>
<tr>
<td>621 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>49.3 ± 21</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>621 Front #2</td>
<td>35</td>
<td>Cd-109</td>
<td>142 ± 31</td>
<td></td>
</tr>
<tr>
<td>621 Front #2</td>
<td>35</td>
<td>Cd-109</td>
<td>124 ± 29</td>
<td>Ave. = 105.1</td>
</tr>
<tr>
<td>619 Martin #4</td>
<td>31</td>
<td>Cd-109</td>
<td>593 ± 57</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>619 Martin #4</td>
<td>31</td>
<td>Cd-109</td>
<td>593 ± 54</td>
<td></td>
</tr>
<tr>
<td>619 Martin #4</td>
<td>37</td>
<td>Cd-109</td>
<td>718 ± 55</td>
<td>Ave. = 634.7</td>
</tr>
<tr>
<td>619 Martin #5</td>
<td>41</td>
<td>Cd-109</td>
<td>834 ± 79</td>
<td></td>
</tr>
<tr>
<td>619 Martin #5</td>
<td>31</td>
<td>Cd-109</td>
<td>1300 ± 74</td>
<td></td>
</tr>
<tr>
<td>619 Martin #5</td>
<td>31</td>
<td>Cd-109</td>
<td>877 ± 88</td>
<td>Ave. = 1,003.7</td>
</tr>
<tr>
<td>620 Martin</td>
<td>31</td>
<td>Cd-109</td>
<td>50.9 ± 19</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>620 Martin</td>
<td>31</td>
<td>Cd-109</td>
<td>86.4 ± 27</td>
<td></td>
</tr>
<tr>
<td>620 Martin</td>
<td>31</td>
<td>Cd-109</td>
<td>113 ± 30</td>
<td>Ave. = 83.4</td>
</tr>
<tr>
<td>Page #1</td>
<td>62</td>
<td>Cd-109</td>
<td>333 ± 30</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>Page #1</td>
<td>61</td>
<td>Cd-109</td>
<td>485 ± 37</td>
<td></td>
</tr>
<tr>
<td>Page #1</td>
<td>61</td>
<td>Cd-109</td>
<td>543 ± 38</td>
<td>Ave. = 453.7</td>
</tr>
<tr>
<td>Page #2</td>
<td>61</td>
<td>Cd-109</td>
<td>397 ± 31</td>
<td></td>
</tr>
<tr>
<td>Page #2</td>
<td>61</td>
<td>Cd-109</td>
<td>496 ± 39</td>
<td></td>
</tr>
<tr>
<td>Page #2</td>
<td></td>
<td>Cd-109</td>
<td>420 ± 42</td>
<td>Ave. = 437.7</td>
</tr>
<tr>
<td>Page #3</td>
<td>62</td>
<td>Cd-109</td>
<td>450 ± 38</td>
<td></td>
</tr>
<tr>
<td>Page #3</td>
<td>62</td>
<td>Cd-109</td>
<td>615 ± 45</td>
<td></td>
</tr>
<tr>
<td>Page #3</td>
<td>62</td>
<td>Cd-109</td>
<td>388 ± 38</td>
<td>Ave. = 484.3</td>
</tr>
<tr>
<td>Sample I.D.:</td>
<td>Run Time (Ss):</td>
<td>Source:</td>
<td>Lead (Wet) (mg/kg):</td>
<td>Comments/Three Point Average Concentration:</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td>--------</td>
<td>---------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Page #4</td>
<td>62</td>
<td>Cd-109</td>
<td>474 ± 38</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>Page #4</td>
<td>62</td>
<td>Cd-109</td>
<td>463 ± 36</td>
<td></td>
</tr>
<tr>
<td>Page #4</td>
<td>62</td>
<td>Cd-109</td>
<td>412 ± 35</td>
<td>Ave. = 449.7</td>
</tr>
<tr>
<td>Page #5</td>
<td>62</td>
<td>Cd-109</td>
<td>415 ± 36</td>
<td></td>
</tr>
<tr>
<td>Page #5</td>
<td>62</td>
<td>Cd-109</td>
<td>548 ± 42</td>
<td></td>
</tr>
<tr>
<td>Page #5</td>
<td>62</td>
<td>Cd-109</td>
<td>606 ± 45</td>
<td>Ave. = 523.0</td>
</tr>
<tr>
<td>Page #6</td>
<td>34</td>
<td>Cd-109</td>
<td>497 ± 49</td>
<td></td>
</tr>
<tr>
<td>Page #6</td>
<td>34</td>
<td>Cd-109</td>
<td>586 ± 53</td>
<td></td>
</tr>
<tr>
<td>Page #6</td>
<td>34</td>
<td>Cd-109</td>
<td>654 ± 57</td>
<td>Ave. = 579.0</td>
</tr>
<tr>
<td>Page #7</td>
<td>31</td>
<td>Cd-109</td>
<td>275 ± 35</td>
<td></td>
</tr>
<tr>
<td>Page #7</td>
<td>31</td>
<td>Cd-109</td>
<td>434 ± 46</td>
<td></td>
</tr>
<tr>
<td>Page #7</td>
<td>31</td>
<td>Cd-109</td>
<td>328 ± 38</td>
<td>Ave. = 345.7</td>
</tr>
<tr>
<td>Martin Alley #1</td>
<td>31</td>
<td>Cd-109</td>
<td>360 ± 47</td>
<td></td>
</tr>
<tr>
<td>Martin Alley #1</td>
<td>31</td>
<td>Cd-109</td>
<td>640 ± 64</td>
<td></td>
</tr>
<tr>
<td>Martin Alley #1</td>
<td>32</td>
<td>Cd-109</td>
<td>542 ± 66</td>
<td>Ave. = 514.0</td>
</tr>
<tr>
<td>Martin Alley #2</td>
<td>31</td>
<td>Cd-109</td>
<td>1070 ± 97</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>Martin Alley #2</td>
<td>31</td>
<td>Cd-109</td>
<td>1070 ± 100</td>
<td></td>
</tr>
<tr>
<td>Martin Alley #2</td>
<td>31</td>
<td>Cd-109</td>
<td>1040 ± 89</td>
<td>(Duplicate)</td>
</tr>
<tr>
<td>Martin Alley #2</td>
<td>31</td>
<td>Cd-109</td>
<td>1330 ± 96</td>
<td>Ave. = 1,127.5</td>
</tr>
<tr>
<td>Martin Alley #3</td>
<td>30</td>
<td>Cd-109</td>
<td>1430 ± 99</td>
<td></td>
</tr>
<tr>
<td>Martin Alley #3</td>
<td>33</td>
<td>Cd-109</td>
<td>1630 ± 100</td>
<td></td>
</tr>
<tr>
<td>Martin Alley #3</td>
<td>33</td>
<td>Cd-109</td>
<td>1520 ± 96</td>
<td>Ave. = 1,526.7</td>
</tr>
<tr>
<td>School S. Alley</td>
<td>32</td>
<td>Cd-109</td>
<td>361 ± 56</td>
<td></td>
</tr>
<tr>
<td>School S. Alley</td>
<td>32</td>
<td>Cd-109</td>
<td>300 ± 43</td>
<td></td>
</tr>
<tr>
<td>School S. Alley</td>
<td>32</td>
<td>Cd-109</td>
<td>334 ± 47</td>
<td>Ave. = 331.7</td>
</tr>
<tr>
<td>Coyle #1</td>
<td>31</td>
<td>Cd-109</td>
<td>310 ± 47</td>
<td></td>
</tr>
<tr>
<td>Coyle #1</td>
<td>31</td>
<td>Cd-109</td>
<td>254 ± 42</td>
<td></td>
</tr>
<tr>
<td>Sample I.D.:</td>
<td>Run Time (Ss):</td>
<td>Source:</td>
<td>Lead (Wet) (mg/kg):</td>
<td>Comments/Three Point Average Concentration:</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td>---------</td>
<td>---------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Coyle #1</td>
<td>31</td>
<td>Cd-109</td>
<td>249 ± 41</td>
<td></td>
</tr>
<tr>
<td>Coyle #1</td>
<td>34</td>
<td>Cd-109</td>
<td>233 ± 37</td>
<td>Ave.= 261.5 (Duplicate)</td>
</tr>
<tr>
<td>Coyle #2</td>
<td>31</td>
<td>Cd-109</td>
<td>360 ± 55</td>
<td></td>
</tr>
<tr>
<td>Coyle #2</td>
<td>35</td>
<td>Cd-109</td>
<td>310 ± 49</td>
<td></td>
</tr>
<tr>
<td>Coyle #2</td>
<td>89</td>
<td>Cd-109</td>
<td>318 ± 33</td>
<td>Ave.= 329.3</td>
</tr>
<tr>
<td>Coyle #3</td>
<td>31</td>
<td>Cd-109</td>
<td>160 ± 37</td>
<td></td>
</tr>
<tr>
<td>Coyle #3</td>
<td>32</td>
<td>Cd-109</td>
<td>104 ± 33</td>
<td></td>
</tr>
<tr>
<td>Coyle #3</td>
<td>32</td>
<td>Cd-109</td>
<td>179 ± 42</td>
<td>Ave.= 147.7</td>
</tr>
<tr>
<td>W Martin #1</td>
<td>34</td>
<td>Cd-109</td>
<td>405 ± 46</td>
<td></td>
</tr>
<tr>
<td>W Martin #1</td>
<td>35</td>
<td>Cd-109</td>
<td>505 ± 56</td>
<td></td>
</tr>
<tr>
<td>W Martin #1</td>
<td>34</td>
<td>Cd-109</td>
<td>284 ± 47</td>
<td>Ave.= 398</td>
</tr>
<tr>
<td>W. Martin #2</td>
<td>31</td>
<td>Cd-109</td>
<td>430 ± 50</td>
<td></td>
</tr>
<tr>
<td>W. Martin #2</td>
<td>31</td>
<td>Cd-109</td>
<td>468 ± 49</td>
<td>(Duplicate)</td>
</tr>
<tr>
<td>W. Martin #2</td>
<td>31</td>
<td>Cd-109</td>
<td>585 ± 69</td>
<td></td>
</tr>
<tr>
<td>W. Martin #2</td>
<td>31</td>
<td>Cd-109</td>
<td>573 ± 64</td>
<td>Ave.= 514.0</td>
</tr>
<tr>
<td>W Martin #3</td>
<td>31</td>
<td>Cd-109</td>
<td>705 ± 67</td>
<td></td>
</tr>
<tr>
<td>W Martin #3</td>
<td>34</td>
<td>Cd-109</td>
<td>473 ± 56</td>
<td></td>
</tr>
<tr>
<td>W Martin #3</td>
<td>31</td>
<td>Cd-109</td>
<td>823 ± 72</td>
<td>Ave.= 667.0</td>
</tr>
<tr>
<td>Martin #1</td>
<td>31</td>
<td>Cd-109</td>
<td>702 ± 75</td>
<td></td>
</tr>
<tr>
<td>Martin #1</td>
<td>34</td>
<td>Cd-109</td>
<td>563 ± 61</td>
<td></td>
</tr>
<tr>
<td>Martin #1</td>
<td>33</td>
<td>Cd-109</td>
<td>1070 ± 88</td>
<td>Ave.= 778.3</td>
</tr>
<tr>
<td>Martin #2</td>
<td>33</td>
<td>Cd-109</td>
<td>1010 ± 84</td>
<td></td>
</tr>
<tr>
<td>Martin #2</td>
<td>33</td>
<td>Cd-109</td>
<td>1280 ± 41</td>
<td></td>
</tr>
<tr>
<td>Martin #2</td>
<td>35</td>
<td>Cd-109</td>
<td>944 ± 81</td>
<td>Ave.= 1,078.0</td>
</tr>
<tr>
<td>Martin RROW W School #1</td>
<td>31</td>
<td>Cd-109</td>
<td>107 ± 31</td>
<td></td>
</tr>
<tr>
<td>Martin RROW W School #1</td>
<td>31</td>
<td>Cd-109</td>
<td>88.1 ± 30</td>
<td></td>
</tr>
<tr>
<td>Martin RROW W School #1</td>
<td>31</td>
<td>Cd-109</td>
<td>87.2 ± 28</td>
<td>Ave.= 94.1</td>
</tr>
<tr>
<td>Martin RROW West School</td>
<td>32</td>
<td>Cd-109</td>
<td>179 ± 45</td>
<td></td>
</tr>
</tbody>
</table>
Table 1(a)(continued)

<table>
<thead>
<tr>
<th>Sample I.D.:</th>
<th>Run Time (Ss):</th>
<th>Source:</th>
<th>Lead (Wet) (mg/kg):</th>
<th>Comments/Three Point Average Concentration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin RROW West School</td>
<td>34</td>
<td>Cd-109</td>
<td>191 ± 37</td>
<td></td>
</tr>
<tr>
<td>Martin RROW West School</td>
<td>31</td>
<td>Cd-109</td>
<td>189 ± 37</td>
<td>Ave. = 189.3</td>
</tr>
<tr>
<td>Martin RROW West School</td>
<td>31</td>
<td>Cd-109</td>
<td>198 ± 40</td>
<td>(Duplicate)</td>
</tr>
<tr>
<td>Front RROW East School #3</td>
<td>31</td>
<td>Cd-109</td>
<td>144 ± 38</td>
<td></td>
</tr>
<tr>
<td>Front RROW East School #3</td>
<td>31</td>
<td>Cd-109</td>
<td>88.8 ± 24</td>
<td></td>
</tr>
<tr>
<td>Front RROW East School #3</td>
<td>31</td>
<td>Cd-109</td>
<td>110 ± 33</td>
<td>Ave. = 114.3</td>
</tr>
</tbody>
</table>

Notes: All analyses conducted February and March, 2001. Results in milligrams per kilogram (mg/kg). Results in **bold** indicate levels greater than the KDHE RSK residential lead soil standard of 400 mg/kg. All analyses conducted according to EPA Method 6200 on wet samples (not oven-dried) with imprecision indicated as ± in mg/kg. Samples collected 0-6" depth. Average concentration calculated with simple three (3)-point average.
<table>
<thead>
<tr>
<th>Sample I.D.:</th>
<th>Run Time (Ss):</th>
<th>Source:</th>
<th>Lead (mg/kg):</th>
<th>Comments/Three Point Average Concentration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>509 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>752 ± 84</td>
<td></td>
</tr>
<tr>
<td>509 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>842 ± 81</td>
<td></td>
</tr>
<tr>
<td>509 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>986 ± 91</td>
<td><em>Ave.</em> = 860.0</td>
</tr>
<tr>
<td>509 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>1,040 ± 91</td>
<td></td>
</tr>
<tr>
<td>509 Front #2</td>
<td>33</td>
<td>Cd-109</td>
<td>1,400 ± 100</td>
<td></td>
</tr>
<tr>
<td>509 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>1,180 ± 110</td>
<td><em>Ave.</em> = 1,206.7</td>
</tr>
<tr>
<td>509 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>298 ± 46</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>509 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>237 ± 44</td>
<td></td>
</tr>
<tr>
<td>509 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>254 ± 47</td>
<td><em>Ave.</em> = 263.0</td>
</tr>
<tr>
<td>509 Front #4</td>
<td>34</td>
<td>Cd-109</td>
<td>1,430 ± 110</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>509 Front #4</td>
<td>44</td>
<td>Cd-109</td>
<td>1,260 ± 83</td>
<td></td>
</tr>
<tr>
<td>509 Front #4</td>
<td>34</td>
<td>Cd-109</td>
<td>1,540 ± 110</td>
<td><em>Ave.</em> = 1,410.0</td>
</tr>
<tr>
<td>509 Front #5</td>
<td>31</td>
<td>Cd-109</td>
<td>456 ± 61</td>
<td></td>
</tr>
<tr>
<td>509 Front #5</td>
<td>31</td>
<td>Cd-109</td>
<td>354 ± 54</td>
<td></td>
</tr>
<tr>
<td>509 Front #5</td>
<td>31</td>
<td>Cd-109</td>
<td>358 ± 59</td>
<td><em>Ave.</em> = 389.3</td>
</tr>
<tr>
<td>513 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>365 ± 54</td>
<td></td>
</tr>
<tr>
<td>513 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>1,040 ± 85</td>
<td></td>
</tr>
<tr>
<td>513 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>682 ± 72</td>
<td><em>Ave.</em> = 695.7</td>
</tr>
<tr>
<td>513 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>57 ± 30</td>
<td></td>
</tr>
<tr>
<td>513 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>98.2 ± 33</td>
<td></td>
</tr>
<tr>
<td>513 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>114 ± 41</td>
<td><em>Ave.</em> = 89.7</td>
</tr>
<tr>
<td>513 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>880 ± 87</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>513 Front #3</td>
<td>37</td>
<td>Cd-109</td>
<td>859 ± 71</td>
<td></td>
</tr>
<tr>
<td>513 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>759 ± 82</td>
<td><em>Ave.</em> = 832.7</td>
</tr>
<tr>
<td>513 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>196 ± 34</td>
<td></td>
</tr>
<tr>
<td>Sample I.D.:</td>
<td>Run Time (Ss):</td>
<td>Source:</td>
<td>Lead (mg/kg):</td>
<td>Comments/ Average Concentration:</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------</td>
<td>---------</td>
<td>---------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>513 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>297 ± 54</td>
<td></td>
</tr>
<tr>
<td>513 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>334 ± 57</td>
<td>Ave.= 275.7</td>
</tr>
<tr>
<td>513 Front #5</td>
<td>34</td>
<td>Cd-109</td>
<td>414 ± 59</td>
<td></td>
</tr>
<tr>
<td>513 Front #5</td>
<td>35</td>
<td>Cd-109</td>
<td>375 ± 61</td>
<td></td>
</tr>
<tr>
<td>513 Front #5</td>
<td>35</td>
<td>Cd-109</td>
<td>422 ± 58</td>
<td>Ave.= 403.7</td>
</tr>
<tr>
<td>520 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>722 ± 77</td>
<td>Ave.= 706.0</td>
</tr>
<tr>
<td>520 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>685 ± 73</td>
<td>Ave.= 858.0</td>
</tr>
<tr>
<td>520 Front #2</td>
<td>44</td>
<td>Cd-109</td>
<td>669 ± 66</td>
<td></td>
</tr>
<tr>
<td>520 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>357 ± 63</td>
<td>Ave.= 415.0</td>
</tr>
<tr>
<td>520 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>930 ± 63</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>520 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>914 ± 84</td>
<td></td>
</tr>
<tr>
<td>520 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>1,050 ± 87</td>
<td>Ave.= 996.0</td>
</tr>
<tr>
<td>520 Front #3</td>
<td>41</td>
<td>Cd-109</td>
<td>1,090 ± 82</td>
<td>(Duplicate)</td>
</tr>
<tr>
<td>520 Front #5</td>
<td>34</td>
<td>Cd-109</td>
<td>1,180 ± 100</td>
<td></td>
</tr>
<tr>
<td>520 Front #5</td>
<td>35</td>
<td>Cd-109</td>
<td>850 ± 100</td>
<td></td>
</tr>
<tr>
<td>520 Front #5</td>
<td>34</td>
<td>Cd-109</td>
<td>544 ± 77</td>
<td>Ave.= 1,017.0</td>
</tr>
<tr>
<td>524 Martin #1</td>
<td>31</td>
<td>Cd-109</td>
<td>282 ± 55</td>
<td>(Actual address 524 Front)</td>
</tr>
<tr>
<td>524 Martin #1</td>
<td>34</td>
<td>Cd-109</td>
<td>213 ± 55</td>
<td></td>
</tr>
<tr>
<td>524 Martin #1</td>
<td>34</td>
<td>Cd-109</td>
<td>204 ± 45</td>
<td>Ave.= 233</td>
</tr>
<tr>
<td>524 Front #2</td>
<td>35</td>
<td>Cd-109</td>
<td>723 ± 98</td>
<td></td>
</tr>
<tr>
<td>524 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>968 ± 85</td>
<td></td>
</tr>
<tr>
<td>524 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>1,360 ± 110</td>
<td>Ave.= 1,044.7</td>
</tr>
<tr>
<td>524 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>1,120 ± 91</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>524 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>894 ± 80</td>
<td></td>
</tr>
<tr>
<td>524 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>1,000 ± 93</td>
<td>Ave.= 1,004.7</td>
</tr>
<tr>
<td>524 Front #4</td>
<td>34</td>
<td>Cd-109</td>
<td>1,190 ± 94</td>
<td></td>
</tr>
<tr>
<td>Sample I.D.:</td>
<td>Run Time (Ss):</td>
<td>Source:</td>
<td>Lead (mg/kg):</td>
<td>Comments/Average Concentration:</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------</td>
<td>------------</td>
<td>---------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>524 Front #4</td>
<td>34</td>
<td>Cd-109</td>
<td>1,210 ± 90</td>
<td></td>
</tr>
<tr>
<td>524 Front #4</td>
<td>34</td>
<td>Cd-109</td>
<td>1,300 ± 110</td>
<td>Ave. = 1,233.3</td>
</tr>
<tr>
<td>536 Martin</td>
<td>35</td>
<td>Cd-109</td>
<td>142 ± 39</td>
<td>(Actual address 536 Front)</td>
</tr>
<tr>
<td>536 Martin</td>
<td>35</td>
<td>Cd-109</td>
<td>183 ± 43</td>
<td></td>
</tr>
<tr>
<td>536 Martin</td>
<td>35</td>
<td>Cd-109</td>
<td>155 ± 41</td>
<td>Ave. = 160.0</td>
</tr>
<tr>
<td>610 Front #1</td>
<td>33</td>
<td>Cd-109</td>
<td>1,080 ± 110</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>610 Front #1</td>
<td>33</td>
<td>Cd-109</td>
<td>1,440 ± 110</td>
<td></td>
</tr>
<tr>
<td>610 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>1,270 ± 120</td>
<td>Ave. = 1,263.3</td>
</tr>
<tr>
<td>610 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>773 ± 77</td>
<td></td>
</tr>
<tr>
<td>610 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>817 ± 78</td>
<td></td>
</tr>
<tr>
<td>610 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>1,030 ± 99</td>
<td>Ave. = 873.3</td>
</tr>
<tr>
<td>617 Front #1</td>
<td>33</td>
<td>Cd-109</td>
<td>2,700 ± 180</td>
<td></td>
</tr>
<tr>
<td>617 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>1,890 ± 120</td>
<td>Ave. = 1,986.7</td>
</tr>
<tr>
<td>617 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>2,840 ± 160</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>617 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>1,640 ± 110</td>
<td></td>
</tr>
<tr>
<td>617 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>1,520 ± 110</td>
<td></td>
</tr>
<tr>
<td>617 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>1,460 ± 110</td>
<td>Ave. = 2,486.7</td>
</tr>
<tr>
<td>617 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>940 ± 86</td>
<td></td>
</tr>
<tr>
<td>617 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>1,050 ± 93</td>
<td>Ave. = 1,030.0</td>
</tr>
<tr>
<td>617 Front #3</td>
<td>34</td>
<td>Cd-109</td>
<td>1,100 ± 93</td>
<td></td>
</tr>
<tr>
<td>617 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>212 ± 44</td>
<td></td>
</tr>
<tr>
<td>617 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>646 ± 84</td>
<td></td>
</tr>
<tr>
<td>617 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>653 ± 72</td>
<td></td>
</tr>
<tr>
<td>617 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>735 ± 79</td>
<td>Ave. = 585.2 (Duplicate)</td>
</tr>
<tr>
<td>617 Front #4</td>
<td>31</td>
<td>Cd-109</td>
<td>680 ± 75</td>
<td></td>
</tr>
<tr>
<td>617 Front #5</td>
<td>34</td>
<td>Cd-109</td>
<td>1,690 ± 110</td>
<td></td>
</tr>
<tr>
<td>617 Front #5</td>
<td>31</td>
<td>Cd-109</td>
<td>1,400 ± 110</td>
<td>Ave. = 1,395.0</td>
</tr>
<tr>
<td>Sample I.D.:</td>
<td>Run Time (Ss):</td>
<td>Source:</td>
<td>Lead (mg/kg):</td>
<td>Comments/Average Concentration:</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td>---------</td>
<td>---------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>617 Front #5</td>
<td>34</td>
<td>Cd-109</td>
<td>1,320 ± 110</td>
<td>(Duplicate)</td>
</tr>
<tr>
<td>617 Front #6</td>
<td>34</td>
<td>Cd-109</td>
<td>1,650 ± 110</td>
<td></td>
</tr>
<tr>
<td>617 Front #6</td>
<td>31</td>
<td>Cd-109</td>
<td>1,290 ± 100</td>
<td></td>
</tr>
<tr>
<td>617 Front #6</td>
<td>31</td>
<td>Cd-109</td>
<td>1,450 ± 120</td>
<td>Ave.= 1,463.3</td>
</tr>
<tr>
<td>618 Front #1</td>
<td>33</td>
<td>Cd-109</td>
<td>3,670 ± 170</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>618 Front #1</td>
<td>33</td>
<td>Cd-109</td>
<td>1,830 ± 96</td>
<td></td>
</tr>
<tr>
<td>618 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>2,690 ± 160</td>
<td>Ave.= 2,760.0</td>
</tr>
<tr>
<td>618 Front #2</td>
<td>33</td>
<td>Cd-109</td>
<td>2,190 ± 130</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>618 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>2,200 ± 190</td>
<td></td>
</tr>
<tr>
<td>618 Front #2</td>
<td>34</td>
<td>Cd-109</td>
<td>2,440 ± 150</td>
<td>Ave.= 2,276.7</td>
</tr>
<tr>
<td>618 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>123 ± 35</td>
<td></td>
</tr>
<tr>
<td>618 Front #3</td>
<td>36</td>
<td>Cd-109</td>
<td>183 ± 40</td>
<td></td>
</tr>
<tr>
<td>618 Front #3</td>
<td>31</td>
<td>Cd-109</td>
<td>127 ± 38</td>
<td>Ave.= 144.3</td>
</tr>
<tr>
<td>621 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>646 ± 74</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>621 Front #1</td>
<td>31</td>
<td>Cd-109</td>
<td>587 ± 73</td>
<td></td>
</tr>
<tr>
<td>621 Front #1</td>
<td>34</td>
<td>Cd-109</td>
<td>678 ± 62</td>
<td>Ave.= 637.0</td>
</tr>
<tr>
<td>621 Front #2</td>
<td>31</td>
<td>Cd-109</td>
<td>96.1 ± 34</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>621 Front #2</td>
<td>32</td>
<td>Cd-109</td>
<td>128 ± 37</td>
<td></td>
</tr>
<tr>
<td>621 Front #2</td>
<td>37</td>
<td>Cd-109</td>
<td>187 ± 38</td>
<td>Ave.= 137.0</td>
</tr>
<tr>
<td>619 Martin #4</td>
<td>38</td>
<td>Cd-109</td>
<td>670 ± 57</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>619 Martin #4</td>
<td>34</td>
<td>Cd-109</td>
<td>712 ± 65</td>
<td></td>
</tr>
<tr>
<td>619 Martin #4</td>
<td>34</td>
<td>Cd-109</td>
<td>736 ± 65</td>
<td>Ave.= 706.0</td>
</tr>
<tr>
<td>619 Martin #5</td>
<td>34</td>
<td>Cd-109</td>
<td>1,240 ± 86</td>
<td></td>
</tr>
<tr>
<td>619 Martin #5</td>
<td>34</td>
<td>Cd-109</td>
<td>1,350 ± 94</td>
<td></td>
</tr>
<tr>
<td>619 Martin #5</td>
<td>34</td>
<td>Cd-109</td>
<td>1,230 ± 90</td>
<td>Ave.= 1,273.3</td>
</tr>
<tr>
<td>620 Martin</td>
<td>34</td>
<td>Cd-109</td>
<td>188 ± 43</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>620 Martin</td>
<td>35</td>
<td>Cd-109</td>
<td>97.2 ± 38</td>
<td></td>
</tr>
<tr>
<td>620 Martin</td>
<td>34</td>
<td>Cd-109</td>
<td>128 ± 38</td>
<td>Ave.= 137.7</td>
</tr>
<tr>
<td>Sample I.D.:</td>
<td>Run Time (Ss):</td>
<td>Source:</td>
<td>Lead (mg/kg):</td>
<td>Comments/Average Concentration:</td>
</tr>
<tr>
<td>------------</td>
<td>----------------</td>
<td>---------</td>
<td>---------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Page #1</td>
<td>34</td>
<td>Cd-109</td>
<td>610 ± 63</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>Page #1</td>
<td>31</td>
<td>Cd-109</td>
<td>484 ± 65</td>
<td></td>
</tr>
<tr>
<td>Page #1</td>
<td>34</td>
<td>Cd-109</td>
<td>602 ± 67</td>
<td></td>
</tr>
<tr>
<td>Page #2</td>
<td>35</td>
<td>Cd-109</td>
<td>316 ± 50</td>
<td></td>
</tr>
<tr>
<td>Page #2</td>
<td>31</td>
<td>Cd-109</td>
<td>562 ± 73</td>
<td></td>
</tr>
<tr>
<td>Page #2</td>
<td>31</td>
<td>Cd-109</td>
<td>479 ± 67</td>
<td>Ave.= 452.3</td>
</tr>
<tr>
<td>Page #3</td>
<td>34</td>
<td>Cd-109</td>
<td>714 ± 70</td>
<td></td>
</tr>
<tr>
<td>Page #3</td>
<td>30</td>
<td>Cd-109</td>
<td>461 ± 56</td>
<td>Ave.= 508.3</td>
</tr>
<tr>
<td>Page #3</td>
<td>34</td>
<td>Cd-109</td>
<td>442 ± 49</td>
<td>Ave.= 508.3</td>
</tr>
<tr>
<td>Page #3</td>
<td>40</td>
<td>Cd-109</td>
<td>416 ± 42</td>
<td>(Duplicate)</td>
</tr>
<tr>
<td>Page #4</td>
<td>34</td>
<td>Cd-109</td>
<td>460 ± 53</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>Page #4</td>
<td>31</td>
<td>Cd-109</td>
<td>523 ± 64</td>
<td></td>
</tr>
<tr>
<td>Page #4</td>
<td>35</td>
<td>Cd-109</td>
<td>482 ± 54</td>
<td>Ave.= 488.3</td>
</tr>
<tr>
<td>Page #5</td>
<td>34</td>
<td>Cd-109</td>
<td>556 ± 56</td>
<td></td>
</tr>
<tr>
<td>Page #5</td>
<td>31</td>
<td>Cd-109</td>
<td>493 ± 54</td>
<td>Ave.= 580.8</td>
</tr>
<tr>
<td>Page #5</td>
<td>31</td>
<td>Cd-109</td>
<td>656 ± 68</td>
<td>Ave.= 580.8</td>
</tr>
<tr>
<td>Page #5</td>
<td>34</td>
<td>Cd-109</td>
<td>618 ± 62</td>
<td>(Duplicate)</td>
</tr>
<tr>
<td>Page #6</td>
<td>34</td>
<td>Cd-109</td>
<td>620 ± 59</td>
<td></td>
</tr>
<tr>
<td>Page #6</td>
<td>34</td>
<td>Cd-109</td>
<td>576 ± 59</td>
<td></td>
</tr>
<tr>
<td>Page #6</td>
<td>37</td>
<td>Cd-109</td>
<td>737 ± 65</td>
<td>Ave.= 647.7</td>
</tr>
<tr>
<td>Page #7</td>
<td>34</td>
<td>Cd-109</td>
<td>800 ± 78</td>
<td></td>
</tr>
<tr>
<td>Page #7</td>
<td>34</td>
<td>Cd-109</td>
<td>864 ± 80</td>
<td></td>
</tr>
<tr>
<td>Page #7</td>
<td>34</td>
<td>Cd-109</td>
<td>740 ± 74</td>
<td>Ave.= 790.3</td>
</tr>
<tr>
<td>Page #7</td>
<td>34</td>
<td>Cd-109</td>
<td>757 ± 71</td>
<td>(Duplicate)</td>
</tr>
<tr>
<td>Martin Alley #1</td>
<td>35</td>
<td>Cd-109</td>
<td>725 ± 84</td>
<td></td>
</tr>
<tr>
<td>Martin Alley #1</td>
<td>34</td>
<td>Cd-109</td>
<td>764 ± 74</td>
<td></td>
</tr>
<tr>
<td>Martin Alley #1</td>
<td>35</td>
<td>Cd-109</td>
<td>676 ± 95</td>
<td>Ave.= 725.0</td>
</tr>
<tr>
<td>Martin Alley #2</td>
<td>34</td>
<td>Cd-109</td>
<td>1,480 ± 110</td>
<td>Lab Sample</td>
</tr>
</tbody>
</table>
### Table 1(b) (continued)

<table>
<thead>
<tr>
<th>Sample I.D.:</th>
<th>Run Time (Ss):</th>
<th>Source:</th>
<th>Lead (mg/kg):</th>
<th>Comments/Average Concentration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin Alley #2</td>
<td>33</td>
<td>Cd-109</td>
<td>2,270 ± 140</td>
<td></td>
</tr>
<tr>
<td>Martin Alley #2</td>
<td>35</td>
<td>Cd-109</td>
<td>1,190 ± 130</td>
<td>Ave. = 1,646.7</td>
</tr>
<tr>
<td>Martin Alley #3</td>
<td>37</td>
<td>Cd-109</td>
<td>1,590 ± 110</td>
<td></td>
</tr>
<tr>
<td>Martin Alley #3</td>
<td>33</td>
<td>Cd-109</td>
<td>1,720 ± 120</td>
<td>Ave. = 1,653.3</td>
</tr>
<tr>
<td>School S. Alley</td>
<td>32</td>
<td>Cd-109</td>
<td>577 ± 82</td>
<td></td>
</tr>
<tr>
<td>School S. Alley</td>
<td>35</td>
<td>Cd-109</td>
<td>383 ± 70</td>
<td></td>
</tr>
<tr>
<td>School S. Alley</td>
<td>35</td>
<td>Cd-109</td>
<td>396 ± 72</td>
<td>Ave. = 452.0</td>
</tr>
<tr>
<td>Coyle #1</td>
<td>38</td>
<td>Cd-109</td>
<td>415 ± 54</td>
<td></td>
</tr>
<tr>
<td>Coyle #1</td>
<td>34</td>
<td>Cd-109</td>
<td>454 ± 61</td>
<td></td>
</tr>
<tr>
<td>Coyle #1</td>
<td>38</td>
<td>Cd-109</td>
<td>362 ± 53</td>
<td>Ave. = 410.3</td>
</tr>
<tr>
<td>Coyle #2</td>
<td>31</td>
<td>Cd-109</td>
<td>350 ± 73</td>
<td></td>
</tr>
<tr>
<td>Coyle #2</td>
<td>40</td>
<td>Cd-109</td>
<td>431 ± 61</td>
<td></td>
</tr>
<tr>
<td>Coyle #2</td>
<td>34</td>
<td>Cd-109</td>
<td>332 ± 66</td>
<td>Ave. = 371.0</td>
</tr>
<tr>
<td>Coyle #3</td>
<td>31</td>
<td>Cd-109</td>
<td>169 ± 41</td>
<td></td>
</tr>
<tr>
<td>Coyle #3</td>
<td>42</td>
<td>Cd-109</td>
<td>212 ± 39</td>
<td></td>
</tr>
<tr>
<td>Coyle #3</td>
<td>31</td>
<td>Cd-109</td>
<td>139 ± 38</td>
<td>Ave. = 172.3</td>
</tr>
<tr>
<td>W Martin #1</td>
<td>34</td>
<td>Cd-109</td>
<td>431 ± 53</td>
<td></td>
</tr>
<tr>
<td>W Martin #1</td>
<td>35</td>
<td>Cd-109</td>
<td>275 ± 46</td>
<td></td>
</tr>
<tr>
<td>W Martin #1</td>
<td>34</td>
<td>Cd-109</td>
<td>524 ± 53</td>
<td>Ave. = 410.0</td>
</tr>
<tr>
<td>W Martin #2</td>
<td>35</td>
<td>Cd-109</td>
<td>410 ± 61</td>
<td></td>
</tr>
<tr>
<td>W. Martin #2</td>
<td>35</td>
<td>Cd-109</td>
<td>386 ± 68</td>
<td></td>
</tr>
<tr>
<td>W. Martin #2</td>
<td>34</td>
<td>Cd-109</td>
<td>493 ± 30</td>
<td>Ave. = 587.7</td>
</tr>
<tr>
<td>W. Martin #2</td>
<td>34</td>
<td>Cd-109</td>
<td>474 ± 40</td>
<td>(Duplicate)</td>
</tr>
<tr>
<td>W Martin #3</td>
<td>34</td>
<td>Cd-109</td>
<td>816 ± 140</td>
<td>Ave. = 876.0</td>
</tr>
<tr>
<td>W Martin #3</td>
<td>30</td>
<td>Cd-109</td>
<td>843 ± 88</td>
<td></td>
</tr>
<tr>
<td>W Martin #3</td>
<td>34</td>
<td>Cd-109</td>
<td>969 ± 87</td>
<td></td>
</tr>
<tr>
<td>Martin #1</td>
<td>33</td>
<td>Cd-109</td>
<td>887 ± 84</td>
<td></td>
</tr>
<tr>
<td>Sample I.D.:</td>
<td>Run Time (Ss):</td>
<td>Source:</td>
<td>Lead (mg/kg):</td>
<td>Comments/Average Concentration:</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td>---------</td>
<td>---------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Martin #1</td>
<td>33</td>
<td>Cd-109</td>
<td>986 ± 99</td>
<td></td>
</tr>
<tr>
<td>Martin #1</td>
<td>34</td>
<td>Cd-109</td>
<td>795 ± 81</td>
<td><em>Ave.= 889.3</em></td>
</tr>
<tr>
<td>Martin #2</td>
<td>33</td>
<td>Cd-109</td>
<td>938 ± 94</td>
<td></td>
</tr>
<tr>
<td>Martin #2</td>
<td>35</td>
<td>Cd-109</td>
<td>1,370 ± 120</td>
<td><em>Ave.= 1,036.0</em></td>
</tr>
<tr>
<td>Martin RROW W School #1</td>
<td>34</td>
<td>Cd-109</td>
<td>105 ± 36</td>
<td></td>
</tr>
<tr>
<td>Martin RROW W School #1</td>
<td>31</td>
<td>Cd-109</td>
<td>153 ± 51</td>
<td></td>
</tr>
<tr>
<td>Martin RROW W School #1</td>
<td>38</td>
<td>Cd-109</td>
<td>62.1 ± 34</td>
<td><em>Ave.= 106.7</em></td>
</tr>
<tr>
<td>Martin RROW West School</td>
<td>34</td>
<td>Cd-109</td>
<td>268 ± 57</td>
<td></td>
</tr>
<tr>
<td>Martin RROW West School</td>
<td>34</td>
<td>Cd-109</td>
<td>303 ± 55</td>
<td></td>
</tr>
<tr>
<td>Martin RROW West School</td>
<td>34</td>
<td>Cd-109</td>
<td>247 ± 47</td>
<td><em>Ave.= 363.7</em></td>
</tr>
<tr>
<td>Martin RROW West School</td>
<td>41</td>
<td>Cd-109</td>
<td>273 ± 44</td>
<td><em>(Duplicate)</em></td>
</tr>
<tr>
<td>Front RROW East School #3</td>
<td>35</td>
<td>Cd-109</td>
<td>94 ± 35</td>
<td></td>
</tr>
<tr>
<td>Front RROW East School #3</td>
<td>34</td>
<td>Cd-109</td>
<td>204 ± 41</td>
<td><em>Ave.= 138.3</em></td>
</tr>
</tbody>
</table>

Notes: All analyses conducted February and March, 2001. Results in milligrams per kilogram (mg/kg). Results in **bold** indicate levels greater than the KDHE RSK residential lead soil standard of 400 mg/kg. All analyses conducted according to EPA Method 6200 on wet samples (not oven-dried) with imprecision indicated as ± in mg/kg. Samples collected 0-6" depth. Average concentration calculated with simple three (3)-point average.
## Table 2(a)
Laboratory Results for Background Soil Samples

<table>
<thead>
<tr>
<th>Sample I.D.:</th>
<th>Lead (mg/kg):</th>
<th>Arsenic (mg/kg):</th>
<th>Cadmium (mg/kg):</th>
<th>Chromium (mg/kg):</th>
<th>Mercury (mg/kg):</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB-1</td>
<td>209.03</td>
<td>6.36</td>
<td>5.4</td>
<td>13.08</td>
<td>0.0426</td>
</tr>
<tr>
<td>SB-2</td>
<td>38.3</td>
<td>8.0</td>
<td>0.6</td>
<td>19.4</td>
<td>ND(0.1)</td>
</tr>
<tr>
<td>SB-3</td>
<td>15.7</td>
<td>5.7</td>
<td>0.6</td>
<td>13.5</td>
<td>ND(0.1)</td>
</tr>
<tr>
<td>SB-4</td>
<td>28.1</td>
<td>6.8</td>
<td>0.3</td>
<td>17.7</td>
<td>ND(0.1)</td>
</tr>
<tr>
<td><strong>3X Max. Value (3XMAX)</strong></td>
<td><strong>627.1</strong></td>
<td><strong>24.0</strong></td>
<td><strong>16.2</strong></td>
<td><strong>58.2</strong></td>
<td><strong>0.3</strong></td>
</tr>
<tr>
<td><strong>3X Mean</strong></td>
<td><strong>130.1</strong></td>
<td><strong>20.0</strong></td>
<td><strong>2.6</strong></td>
<td><strong>47.1</strong></td>
<td><strong>0.1</strong></td>
</tr>
</tbody>
</table>

Note: All samples obtained 03/01. Red indicates levels in excess of residential RSK levels. Magenta indicates results in excess of 3XMAX background concentration but not in excess of RSK levels. The **bold red** levels indicate constituent levels in excess of residential RSKs and 3XMAX concentration.

Analysis conducted by EPA Method 6010 (except mercury) and EPA Method 7471 (mercury) by Division of Health and Environment Laboratories (DHEL), Topeka, Kansas; Heritage Environmental Services, Indianapolis, Indiana; and Pace Analytical Services, Lenexa, Kansas. ND: Not Detected.
Table 2(b)

Laboratory Results for Confirmatory Samples

<table>
<thead>
<tr>
<th>Sample I.D.</th>
<th>Lead (mg/kg)</th>
<th>Arsenic (mg/kg)</th>
<th>Cadmium (mg/kg)</th>
<th>Chromium (mg/kg)</th>
<th>Mercury (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>620 Martin</td>
<td>142</td>
<td>13.1</td>
<td>3.0</td>
<td>25.1</td>
<td>ND(0.1)</td>
</tr>
<tr>
<td>Page #1</td>
<td>562.0</td>
<td>21.1</td>
<td>18.8</td>
<td>17.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Page #4</td>
<td>489.0</td>
<td>14.5</td>
<td>17.7</td>
<td>16.3</td>
<td>0.3</td>
</tr>
<tr>
<td>520 Front #3</td>
<td>805.0</td>
<td>18.5</td>
<td>25.0</td>
<td>18.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Martin Alley #2</td>
<td>2,090.0</td>
<td>31.4</td>
<td>40.8</td>
<td>21.1</td>
<td>-</td>
</tr>
<tr>
<td>619 Martin #4</td>
<td>843.0</td>
<td>11.8</td>
<td>25.8</td>
<td>14.1</td>
<td>-</td>
</tr>
<tr>
<td>619 Martin #5</td>
<td>1,750.0</td>
<td>16.0</td>
<td>180.0</td>
<td>31.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Front RROW #3</td>
<td>65.0</td>
<td>7.4</td>
<td>1.6</td>
<td>22.9</td>
<td>ND(0.1)</td>
</tr>
<tr>
<td>524 Front #4</td>
<td>1,450.0</td>
<td>15.2</td>
<td>26.2</td>
<td>17.5</td>
<td>0.4</td>
</tr>
<tr>
<td>618 Front #2</td>
<td>3,680.0</td>
<td>33.7</td>
<td>55.8</td>
<td>19.3</td>
<td>0.8</td>
</tr>
<tr>
<td>617 Front #2</td>
<td>1,660.0</td>
<td>21.8</td>
<td>32.8</td>
<td>15.9</td>
<td>0.8</td>
</tr>
<tr>
<td>621 Front #2</td>
<td>152</td>
<td>6.6</td>
<td>5.4</td>
<td>21.7</td>
<td>ND(0.1)</td>
</tr>
<tr>
<td>618 Front #1</td>
<td>3,190.0</td>
<td>31.3</td>
<td>41.0</td>
<td>18.1</td>
<td>0.7</td>
</tr>
<tr>
<td>513 Front #3</td>
<td>1,110.0</td>
<td>12.4</td>
<td>28.4</td>
<td>17.0</td>
<td>0.5</td>
</tr>
<tr>
<td>509 Front #4</td>
<td>1,710.0</td>
<td>17.9</td>
<td>32.3</td>
<td>29.0</td>
<td>0.6</td>
</tr>
<tr>
<td>513 Front #2</td>
<td>85.0</td>
<td>6.4</td>
<td>3.4</td>
<td>17.4</td>
<td>ND(0.1)</td>
</tr>
<tr>
<td>509 Front #3</td>
<td>227.0</td>
<td>7.6</td>
<td>5.9</td>
<td>19.9</td>
<td>0.1</td>
</tr>
<tr>
<td>610 Front #1</td>
<td>1,540.0</td>
<td>26.8</td>
<td>121.0</td>
<td>15.3</td>
<td>1.0</td>
</tr>
<tr>
<td>621 Front #1</td>
<td>764.0</td>
<td>12.1</td>
<td>23.3</td>
<td>16.6</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Note: All samples obtained 03/01. Red indicates levels in excess of residential RSK levels. Magenta indicates results in excess of 3XMAX background concentration but not in excess of RSK levels. The bold red levels indicate constituent levels in excess of residential RSKs and 3XMAX concentration. Analysis conducted by EPA Method 6010 (except mercury) and EPA Method 7471 (mercury) by Division of Health and Environment Laboratories (DHEL), Topeka, Kansas; Heritage Environmental Services, Indianapolis, Indiana; and Pace Analytical Services, Lenexa, Kansas. ND: Not Detected.
Table 3
Summary of Toxicity Characteristic Leachate Procedure (TCLP)
Laboratory Results for Soil Samples

<table>
<thead>
<tr>
<th>Sample I.D.</th>
<th>Total Lead (mg/kg)</th>
<th>TCLP Lead (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page # 4</td>
<td>489</td>
<td>0.14</td>
</tr>
<tr>
<td>Martin Alley #2</td>
<td>2,090</td>
<td>1.92</td>
</tr>
<tr>
<td>619 Martin #4</td>
<td>843</td>
<td>0.36</td>
</tr>
<tr>
<td>619 Martin #5</td>
<td>1,750</td>
<td>0.69</td>
</tr>
<tr>
<td>618 Front #2</td>
<td>3,680</td>
<td>2.21</td>
</tr>
<tr>
<td>618 Front #1</td>
<td>3,190</td>
<td>2.12</td>
</tr>
<tr>
<td>513 Front #3</td>
<td>1,110</td>
<td>0.34</td>
</tr>
<tr>
<td>610 Front #1</td>
<td>1,540</td>
<td>4.97</td>
</tr>
</tbody>
</table>

Note: All samples obtained 08-09/00. Violet indicates waste profile Toxicity Characteristic Leachate Procedure (TCLP) results in excess of criteria established in § 261.24 of the Resource Conservation and Recovery Act (RCRA). Analysis conducted by EPA Method 6010 (except mercury), EPA Method 7471 (mercury) and EPA Method 1311 (TCLP) by Heritage Environmental Services, Indianapolis, Indiana. ND: Not Detected
Table 4
Comparison of XRF and Laboratory Data

<table>
<thead>
<tr>
<th>Sample ID:</th>
<th>Lead by XRF Analysis wet (undried) samples (mg/kg):</th>
<th>Lead by XRF Analysis dried samples (mg/kg):</th>
<th>Lead by EPA Method 6010 (mg/kg):</th>
</tr>
</thead>
<tbody>
<tr>
<td>620 Martin</td>
<td>83.4</td>
<td>137.7</td>
<td>142</td>
</tr>
<tr>
<td>Page 1</td>
<td>453.7</td>
<td>565.3</td>
<td>562</td>
</tr>
<tr>
<td>Page 4</td>
<td>449.7</td>
<td>488.3</td>
<td>489</td>
</tr>
<tr>
<td>520 Front #3</td>
<td>527.3</td>
<td>996.0</td>
<td>805</td>
</tr>
<tr>
<td>Martin Alley #2</td>
<td>1,127.5</td>
<td>1,646.7</td>
<td>2,090</td>
</tr>
<tr>
<td>619 Martin #4</td>
<td>634.7</td>
<td>706.0</td>
<td>843</td>
</tr>
<tr>
<td>619 Martin #5</td>
<td>1,003.7</td>
<td>1,273.3</td>
<td>1,750</td>
</tr>
<tr>
<td>Front RROW #3</td>
<td>114.3</td>
<td>138.3</td>
<td>65.0</td>
</tr>
<tr>
<td>524 Front #4</td>
<td>750.0</td>
<td>1,233.3</td>
<td>1,450</td>
</tr>
<tr>
<td>618 Front #2</td>
<td>1,803.7</td>
<td>2,276.7</td>
<td>3,680</td>
</tr>
<tr>
<td>617 Front #2</td>
<td>807.3</td>
<td>2,486.7</td>
<td>1,660</td>
</tr>
<tr>
<td>621 Front #2</td>
<td>105.1</td>
<td>137.0</td>
<td>152</td>
</tr>
<tr>
<td>618 Front #1</td>
<td>1,916.7</td>
<td>2,760.0</td>
<td>3,190</td>
</tr>
<tr>
<td>513 Front #3</td>
<td>624.0</td>
<td>832.7</td>
<td>1,110</td>
</tr>
<tr>
<td>509 Front #4</td>
<td>NA</td>
<td>1,410.0</td>
<td>1,710</td>
</tr>
<tr>
<td>513 Front #2</td>
<td>79.7</td>
<td>89.7</td>
<td>85.0</td>
</tr>
<tr>
<td>509 Front #3</td>
<td>NA</td>
<td>263.0</td>
<td>227</td>
</tr>
<tr>
<td>610 Front #1</td>
<td>845.0</td>
<td>1,263.3</td>
<td>1,540</td>
</tr>
<tr>
<td>621 Front #1</td>
<td>405.3</td>
<td>637.0</td>
<td>764</td>
</tr>
</tbody>
</table>

Wet Sample (Undried) Lead Linear Regression Parameters:

\[ r^2 = 0.971 \]

Degrees of Freedom = 16  
Number of Observations = 18

Constant = 87.746  
Standard Error of Y Estimate = 94.733  
Slope (X Coefficient) = 0.507

Dried Sample Lead Linear Regression Parameters:

\[ r^2 = 0.924 \]

Degrees of Freedom = 17  
Number of Observations = 19

Constant = 142.203  
Standard Error of Y Estimate = 217.063  
Slope (X Coefficient) = 0.718
Table 5(a)
XRF Quality Control (QC) Parameters Summary/NIST Standards

<table>
<thead>
<tr>
<th>NIST Standard</th>
<th>Date</th>
<th>XRF Lead (mg/kg)</th>
<th>NIST Standard Value</th>
<th>Percent Difference (%PD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>3/05/01</td>
<td>5,090</td>
<td>5,532</td>
<td>7.99</td>
</tr>
<tr>
<td>High</td>
<td>3/05/01</td>
<td>5,010</td>
<td>5,532</td>
<td>9.44</td>
</tr>
<tr>
<td>High</td>
<td>3/06/01</td>
<td>5,030</td>
<td>5,532</td>
<td>9.07</td>
</tr>
<tr>
<td>High</td>
<td>3/06/01</td>
<td>5,020</td>
<td>5,532</td>
<td>9.26</td>
</tr>
<tr>
<td>High</td>
<td>3/06/01</td>
<td>4,860</td>
<td>5,532</td>
<td>12.15</td>
</tr>
<tr>
<td>High</td>
<td>3/06/01</td>
<td>5,050</td>
<td>5,532</td>
<td>8.71</td>
</tr>
<tr>
<td>High</td>
<td>3/27/01</td>
<td>5,010</td>
<td>5,532</td>
<td>9.44</td>
</tr>
<tr>
<td>High</td>
<td>3/27/01</td>
<td>5,040</td>
<td>5,532</td>
<td>8.89</td>
</tr>
<tr>
<td>High</td>
<td>3/27/01</td>
<td>5,140</td>
<td>5,532</td>
<td>7.09</td>
</tr>
<tr>
<td>High</td>
<td>3/15/01</td>
<td>5,190</td>
<td>5,532</td>
<td>6.18</td>
</tr>
<tr>
<td>High</td>
<td>3/15/01</td>
<td>5,120</td>
<td>5,532</td>
<td>7.45</td>
</tr>
<tr>
<td>High</td>
<td>3/15/01</td>
<td>5,180</td>
<td>5,532</td>
<td>6.36</td>
</tr>
<tr>
<td>Medium</td>
<td>3/06/01</td>
<td>1,050</td>
<td>1,162</td>
<td>9.64</td>
</tr>
<tr>
<td>Medium</td>
<td>3/06/01</td>
<td>1,020</td>
<td>1,162</td>
<td>12.22</td>
</tr>
<tr>
<td>Medium</td>
<td>3/06/01</td>
<td>1,020</td>
<td>1,162</td>
<td>12.22</td>
</tr>
<tr>
<td>Medium</td>
<td>3/06/01</td>
<td>1,000</td>
<td>1,162</td>
<td>13.94</td>
</tr>
<tr>
<td>Medium</td>
<td>3/07/01</td>
<td>1,050</td>
<td>1,162</td>
<td>9.64</td>
</tr>
<tr>
<td>Medium</td>
<td>3/07/01</td>
<td>1,020</td>
<td>1,162</td>
<td>12.22</td>
</tr>
<tr>
<td>Medium</td>
<td>3/16/01</td>
<td>1,030</td>
<td>1,162</td>
<td>11.36</td>
</tr>
<tr>
<td>Medium</td>
<td>3/16/01</td>
<td>1,020</td>
<td>1,162</td>
<td>12.22</td>
</tr>
<tr>
<td>Medium</td>
<td>3/08/01</td>
<td>1,060</td>
<td>1,162</td>
<td>8.78</td>
</tr>
<tr>
<td>Medium</td>
<td>3/08/01</td>
<td>996</td>
<td>1,162</td>
<td>14.29</td>
</tr>
</tbody>
</table>

Average PD = % 9.29

Notes: All samples collected 03/01 by KDHE/BER/Site Assessment Unit. XRF: X-Ray Fluorescence. Analytical methods referenced to EPA Method SW-846, Methods for Analysis of Solid Waste. Percent difference for standards calculated by \((C_o - C_k) / C_k \times 100\) where \(C_k\) = certified National Institute of Standards and Testing (NIST) lead concentration value of medium standard, 1,162 ± 31 mg/kg; concentration of high standard, 5,532 mg/kg ± 100 mg/kg; \(C_o\) = measured in-field XRF lead concentration of standard. RSD calculated by \(RSD = (SD/\text{Mean Concentration}) \times 100\) where SD = standard deviation of the concentration for the analyte and Mean Concentration = mean concentration for the analyte.
Table 5(b): Relative Standard Deviation Results for XRF Field Duplicate Values

<table>
<thead>
<tr>
<th>Sample ID:</th>
<th>First Value: (mg/kg):</th>
<th>Second Value: (mg/kg):</th>
<th>Standard Deviation:</th>
<th>Relative Standard Deviation (RSD):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Undried Samples:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>520 Front #5</td>
<td>1,090</td>
<td>994</td>
<td>48</td>
<td>4.61</td>
</tr>
<tr>
<td>Martin Alley #2</td>
<td>1,070</td>
<td>1,040</td>
<td>15</td>
<td>1.42</td>
</tr>
<tr>
<td>Coyle #1</td>
<td>249</td>
<td>233</td>
<td>8</td>
<td>3.32</td>
</tr>
<tr>
<td>W. Martin #2</td>
<td>430</td>
<td>468</td>
<td>19</td>
<td>4.23</td>
</tr>
<tr>
<td>Martin RROW W. School</td>
<td>489</td>
<td>498</td>
<td>1.5</td>
<td>0.31</td>
</tr>
<tr>
<td><strong>Medium Standard</strong></td>
<td>1,020</td>
<td>1,020</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>High Standard</strong></td>
<td>5,030</td>
<td>5,020</td>
<td>5</td>
<td>0.10</td>
</tr>
<tr>
<td><strong>Dried Samples:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>520 Front #3</td>
<td>1050</td>
<td>1090</td>
<td>20</td>
<td>1.87</td>
</tr>
<tr>
<td>617 Front #4</td>
<td>735</td>
<td>680</td>
<td>27.5</td>
<td>3.89</td>
</tr>
<tr>
<td>617 Front #5</td>
<td>1400</td>
<td>1320</td>
<td>40</td>
<td>2.94</td>
</tr>
<tr>
<td>Page #3</td>
<td>442</td>
<td>416</td>
<td>13</td>
<td>3.03</td>
</tr>
<tr>
<td>Page #5</td>
<td>656</td>
<td>618</td>
<td>19</td>
<td>2.98</td>
</tr>
<tr>
<td>Page #7</td>
<td>740</td>
<td>757</td>
<td>8.5</td>
<td>1.14</td>
</tr>
<tr>
<td>W. Martin #2</td>
<td>493</td>
<td>474</td>
<td>9.5</td>
<td>1.96</td>
</tr>
<tr>
<td>Martin RROW W. School</td>
<td>247</td>
<td>273</td>
<td>13</td>
<td>5.0</td>
</tr>
</tbody>
</table>

**Average RSD = 2.59**

Notes: All samples collected 03/01 by KDHE/BER/Site Assessment Unit. XRF: X-Ray Fluorescence. Data Source: KDHE, 2001. Analytical methods referenced to EPA Method SW-846, Methods for Analysis of Solid Waste. Percent difference for standards calculated by \(\left(\frac{C_k - C_x}{C_k}\right) \times 100\) where \(C_k\) = certified National Institute of Standards and Testing (NIST) lead concentration value of medium standard, 1,162 ± 31 mg/kg; concentration of high standard, 5532 mg/kg ± 100 mg/kg; \(C_x\) = measured in-field XRF lead concentration of standard. RSD calculated by \(\text{RSD} = \frac{SD}{\text{Mean Concentration}} \times 100\) where SD = standard deviation of the concentration for the analyte and Mean Concentration = mean concentration for the analyte.

No QC parameters (% PD or RSD) were exceeded consistent with EPA Method 6200 criteria (% PD > 20 or average RSD > 20).
ATTACHMENT B

PHOTOGRAPHIC DOCUMENTATION
Photo #1 - Cherryvale Residential Yards RSE Site

Date: 3/01
View: Southwest
Photographer: Randolph L. Brown
Comments: Overview of the residential area. The intersection of Martin and Coyle Streets is in the foreground.

Photo #2 - Cherryvale Residential Yards RSE Site

Date: 3/01
View: East
Photographer: Randolph L. Brown
Comments: Photo shows the residence at 511 Martin.
Photo #3 - Cherryvale Residential Yards RSE Site

Date: 3/01
View: East
Photographer: Randolph L. Brown
Comments: 619 Martin residence in the foreground, other residences in background.

Photo #4 - Cherryvale Residential Yards RSE Site

Date: 3/01
View: East
Photographer: Randolph L. Brown
Comments: Looking east on Front Street. 621 and 617 Front Street residences to the right.
Photo #5 - Cherryvale Residential Yards RSE Site

Date: 3/01
View: East
Photographer: Randolph L. Brown
Comments: Residence in foreground is vacant. 620, 618 and 610 Front Street in background.

Photo #6 - Cherryvale Residential Yards RSE Site

Date: 3/01
View: East
Photographer: Randolph L. Brown
Comments: 536, 524 and 520 Front Street residences.
Date: 3/01
View: East
Photographer: Randolph L. Brown
Comments: 513 and 509 Front Street residences.
ATTACHMENT C

ANALYTICAL DATA
## INORGANIC CHEMISTRY

**Report To:** Bureau of Env. Remediation  
Forbes Field, Bldg. 740  
Attn: Randy Brown  
Topeka KS 66620

**Collection Location:** C306300026 Nat. Zinc SB-1

**Collector:** Randy Brown-BER  
**Date/Time Collected:** 02/19/01 14:15

**Sample Comments:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Analytical Result</th>
<th>Units</th>
<th>Analysis Date</th>
<th>Analytical Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum (Total)</td>
<td>11840.71</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Antimony (Total)</td>
<td>&lt; 5.00</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Arsenic (Total)</td>
<td>6.36</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Barium (Total)</td>
<td>127.33</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Beryllium (Total)</td>
<td>0.47</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Boro (Total)</td>
<td>&lt; 1.00</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Cadmium (Total)</td>
<td>5.40</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Calcium (Total)</td>
<td>3332.98</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Chromium (Total)</td>
<td>13.98</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Cobalt (Total)</td>
<td>4.21</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Copper (Total)</td>
<td>31.70</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Iron (Total)</td>
<td>11767.78</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Lead (Total)</td>
<td>205.03</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Magnesium (Total)</td>
<td>1228.63</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Manganese (Total)</td>
<td>397.90</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6010</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.0446</td>
<td>mg/Kg</td>
<td>02/27/01</td>
<td>EPA 245.2</td>
</tr>
<tr>
<td>Molybdenum (Total)</td>
<td>&lt; 2.00</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6210</td>
</tr>
<tr>
<td>Nickel (Total)</td>
<td>6.58</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6210</td>
</tr>
<tr>
<td>Potassium (Total)</td>
<td>1933.64</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6210</td>
</tr>
<tr>
<td>Selenium (Total)</td>
<td>&lt; 5.00</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6210</td>
</tr>
<tr>
<td>Silica (Total)</td>
<td>137.93</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6210</td>
</tr>
<tr>
<td>Silver (Total)</td>
<td>&lt; 1.00</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6210</td>
</tr>
<tr>
<td>Sodium (Total)</td>
<td>133.89</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6210</td>
</tr>
<tr>
<td>Tellurium (Total)</td>
<td>&lt; 5.00</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6210</td>
</tr>
<tr>
<td>Vanadium (Total)</td>
<td>23.18</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6210</td>
</tr>
<tr>
<td>Zinc (Total)</td>
<td>675.78</td>
<td>mg/Kg</td>
<td>02/28/01</td>
<td>EPA 6210</td>
</tr>
</tbody>
</table>

**Reporting Analyst:** REH  
**Date Reported:** 03/05/01

** Copies To:** File

---

**Received**  
MAR 06 2001

**BUREAU OF ENVIRONMENTAL REMEDIATION**
Dear Mr. Brown:

This laboratory report consisting of 11 pages contains the analytical results for the following samples:

<table>
<thead>
<tr>
<th>CAS LAB ID #</th>
<th>SAMPLE DESCRIPTION</th>
<th>SAMPLE TYPE</th>
<th>DATE SAMPLED</th>
</tr>
</thead>
<tbody>
<tr>
<td>01031195</td>
<td>620 Martin</td>
<td>Solid</td>
<td>03/05/2001</td>
</tr>
<tr>
<td>01031196</td>
<td>Page 1</td>
<td>Solid</td>
<td>03/05/2001</td>
</tr>
<tr>
<td>01031197</td>
<td>Page 4</td>
<td>Solid</td>
<td>03/05/2001</td>
</tr>
<tr>
<td>01031198</td>
<td>520 Front #3</td>
<td>Solid</td>
<td>03/05/2001</td>
</tr>
<tr>
<td>01031199</td>
<td>Martin Alley #2</td>
<td>Solid</td>
<td>03/05/2001</td>
</tr>
<tr>
<td>01031200</td>
<td>SB-4</td>
<td>Solid</td>
<td>03/13/2001</td>
</tr>
<tr>
<td>01031201</td>
<td>SB-2</td>
<td>Solid</td>
<td>03/13/2001</td>
</tr>
<tr>
<td>01031202</td>
<td>SB-3</td>
<td>Solid</td>
<td>03/13/2001</td>
</tr>
<tr>
<td>01031203</td>
<td>614 Martin #4</td>
<td>Solid</td>
<td>03/05/2001</td>
</tr>
<tr>
<td>01031204</td>
<td>619 Martin #5</td>
<td>Solid</td>
<td>03/05/2001</td>
</tr>
<tr>
<td>01031205</td>
<td>Front Row #3</td>
<td>Solid</td>
<td>03/05/2001</td>
</tr>
<tr>
<td>01031206</td>
<td>524 Front #4</td>
<td>Solid</td>
<td>03/05/2001</td>
</tr>
</tbody>
</table>

The footnotes contained in the attached laboratory reports are summarized below for your reference.

<table>
<thead>
<tr>
<th>CAS LAB ID #</th>
<th>TEST NAME</th>
<th>SAMPLE CONC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>01031202</td>
<td>Cadmium, Total</td>
<td>ND(0.6) M</td>
</tr>
</tbody>
</table>

M - Reporting limit higher than normal due to matrix interferences.
03/29/2001

Thank you for choosing Continental for this project. If you have any questions, please contact me at (800)-535-3076.

CONTINENTAL ANALYTICAL SERVICES, INC.

Gregory J. Groene
Project Manager
<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>13.1</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>220.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>3.0</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>25.1</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>142.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>ND(0.1)</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4425/331</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>1.5</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-1</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>SKR</td>
<td>3050B</td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td>03/28/2001</td>
<td>010328-1</td>
<td>AMB</td>
<td>7471A</td>
</tr>
</tbody>
</table>

-Continued-
Client: Kansas Dept. of Health & Environment  
Lab Number: 01031196  
Sample Description: Page 1

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>0.14</td>
<td>mg/L</td>
<td>03/23/2001</td>
<td>4866/8</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>14.5</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>180.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>17.7</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>16.3</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>489.</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4425/331</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>0.3</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>1.4</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
</tbody>
</table>

**Concentration of Lab Number: 01031196**

Lab Number: 01031197  
Sample Description: Page 4

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, TCLP</td>
<td>0.14</td>
<td>mg/L</td>
<td>03/23/2001</td>
<td>4866/8</td>
</tr>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>14.5</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>180.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>17.7</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>16.3</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>489.</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4425/331</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.3</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>1.4</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>1.3</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
</tbody>
</table>

**Continued**

---

**RECEIVED**

MAR 30 2001

BUREAU OF ENVIRONMENTAL REMEDIATION

Continental Analytical Services, Inc.
### Analysis of Clients: Kansas Dept. of Health & Environment

#### Lab Number: 01031197

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>TCLP Prep</td>
<td>03/20/2001</td>
<td>010320-1</td>
<td>KNH</td>
<td>1311</td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td></td>
<td></td>
<td>SKR</td>
<td>3050B</td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td></td>
<td></td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>ICP Metals TCLP Preparation Analyst/Method</td>
<td></td>
<td></td>
<td>SKR</td>
<td>3010A</td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031197

#### Lab Number: 01033198

Sample Description: 520 Front #3

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>18.5</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>200.0</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>25.0</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>18.6</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>805.0</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.4</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4425/331</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>1.5</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>1.5</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
</tbody>
</table>

### Conclusion of Lab Number: 01033198

-Continued-
Client: Kansas Dept. of Health & Environment

Lab Number: 01031199
Sample Description: Martin Alley #2
Date Sampled: 03/05/2001
Time Sampled: 1430

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, TCLP</td>
<td>1.92</td>
<td>mg/L</td>
<td>03/23/2001</td>
<td>4866/8</td>
</tr>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>31.4</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>190.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>40.8</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>21.1</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>2090.</td>
<td>mg/kg</td>
<td>03/22/2001</td>
<td>4866/6</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>2.4</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>4.2</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, TCLP</td>
<td>03/23/2001</td>
<td>010323-1</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>TCLP Prep</td>
<td>03/20/2001</td>
<td>010320-1</td>
<td>KNH</td>
<td>1311</td>
</tr>
<tr>
<td>ICP Metals Total Preparation</td>
<td></td>
<td></td>
<td>SKR</td>
<td>3050B</td>
</tr>
<tr>
<td>ICP Metals TCLP Preparation</td>
<td></td>
<td></td>
<td>SKR</td>
<td>3010A</td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031199

Lab Number: 01031200
Sample Description: SB-4
Date Sampled: 03/13/2001
Time Sampled: 1145

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>6.8</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>110.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>ND (0.3)</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>17.7</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>28.1</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>ND (0.1)</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>ND (1.0)</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>ND (1.0)</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
</tbody>
</table>

-Continued-
Client: Kansas Dept. of Health & Environment  
Lab Number: 01031200

--- ANALYSIS ---

### Analysis of Samples

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Analyzed</th>
<th>Concentration</th>
<th>Units</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/21/2001</td>
<td>8.0</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/21/2001</td>
<td>180.</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/21/2001</td>
<td>0.6</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/21/2001</td>
<td>19.4</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/21/2001</td>
<td>38.3</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/29/2001</td>
<td>ND(0.1)</td>
<td>mg/kg</td>
<td>AMB 7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/21/2001</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/21/2001</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
</tbody>
</table>

### Analysis of Samples (Continued)

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Analyzed</th>
<th>Concentration</th>
<th>Units</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/19/2001</td>
<td>8.0</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/19/2001</td>
<td>180.</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/19/2001</td>
<td>0.6</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/19/2001</td>
<td>19.4</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/19/2001</td>
<td>38.3</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>ND(0.1)</td>
<td>mg/kg</td>
<td>AMB 7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/19/2001</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/19/2001</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG 6010B</td>
<td></td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td>03/29/2001</td>
<td>010328-1</td>
<td>AMB 7471A</td>
<td></td>
</tr>
</tbody>
</table>

--- CONCLUSION ---

Conclusion of Lab Number: 01031200

Lab Number: 01031201  
Sample Description: SB-2  
Date Sampled: 03/13/2001  
Time Sampled: 1130  

--- ANALYSIS ---

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Analyzed</th>
<th>Concentration</th>
<th>Units</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/21/2001</td>
<td>8.0</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/21/2001</td>
<td>180.</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/21/2001</td>
<td>0.6</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/21/2001</td>
<td>19.4</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/21/2001</td>
<td>38.3</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/29/2001</td>
<td>ND(0.1)</td>
<td>mg/kg</td>
<td>AMB 7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/21/2001</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/21/2001</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>MAG 6010B</td>
</tr>
</tbody>
</table>

--- CONCLUSION ---

Conclusion of Lab Number: 01031201

RECEIVED
MAR 30 2001
BUREAU OF ENVIRONMENTAL REMEDIATION

Continental Analytical Services, Inc.
**CONTINENTAL ANALYTICAL SERVICES, INC.**

**LABORATORY REPORT**

**Client:** Kansas Dept. of Health & Environment

Lab Number: 01031202

**Sample Description:** SB-3

**Date Sampled:** 03/13/2001

**Time Sampled:** 1135

### Analysis Concentration Units

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>5.7</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>100.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>ND(0.6) M</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>13.5</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>15.7</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>ND(0.1)</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4425/331</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
</tbody>
</table>

### Analysis Prepared QC Batch Analyst Method(s)

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4 MAG</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/19/2001</td>
<td>010319-4 MAG</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/19/2001</td>
<td>010319-4 MAG</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/19/2001</td>
<td>010319-4 MAG</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4 MAG</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-1 AMB</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4 MAG</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/19/2001</td>
<td>010319-4 MAG</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>ICP Metals Total Preparation</td>
<td></td>
<td></td>
<td>SKR</td>
<td>3050B</td>
</tr>
<tr>
<td>Analyst/Method</td>
<td></td>
<td></td>
<td>AMB</td>
<td>7471A</td>
</tr>
</tbody>
</table>

M - Reporting limit higher than normal due to matrix interferences.

---

**Conclusion of Lab Number: 01031202**

Lab Number: 01031203

**Sample Description:** 614 Martin #4

**Date Sampled:** 03/05/2001

**Time Sampled:** 1650

### Analysis Concentration Units

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, TCLP</td>
<td>0.36</td>
<td>mg/L</td>
<td>03/23/2001</td>
<td>4866/8</td>
</tr>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>11.8</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>120.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>25.8</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>14.1</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>843.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>1.0</td>
<td>mg/kg</td>
<td>03/22/2001</td>
<td>4866/6</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
</tbody>
</table>

---

**RECEIVED**

MAR 3 2001

BUREAU OF ENVIRONMENTAL REGULATION

[Continental Analytical Services, Inc.]
## Analysis

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, TCLP</td>
<td>0.69</td>
<td>mg/L</td>
<td>03/23/2001</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>16.0</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>180.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>31.8</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>16.2</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>1750.</td>
<td>mg/kg</td>
<td>03/22/2001</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.7</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>2.0</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>1.3</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>TCLP Prep</td>
<td></td>
<td></td>
<td>03/20/2001</td>
<td>KNH</td>
<td>1311</td>
</tr>
</tbody>
</table>

**Conclusion of Lab Number: 01031203**
<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>TCLP Prep</td>
<td>03/20/2001</td>
<td>010320-1</td>
<td>KMH</td>
<td>1311</td>
</tr>
<tr>
<td>ICP Metals Total Preparation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyst/Method</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercury Total Preparation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyst/Method</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031204

Lab Number: 01031205
Sample Description: Front Rrow #3
Date Sampled: 03/05/2001
Time Sampled: 1700

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>7.4</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>160.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>1.6</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>22.9</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>65.0</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/4</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>ND(0.1)</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4425/331</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
</tbody>
</table>

Analysis
Date Prepared | QC Batch       | Analyst | Method(s) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-1</td>
<td>AMB</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td>SKR</td>
<td>3050B</td>
<td></td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td>AMB</td>
<td>7471A</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031205

RECEIVED
MAR 30 2001
BUREAU OF ENVIRONMENTAL REMEDIATION
Continental Analytical Services, Inc.
Client: Kansas Dept. of Health & Environment

Lab Number: 01031206  
Date Sampled: 03/05/2001

Sample Description: 524 Front #4  
Time Sampled: 1340

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>15.2</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>180.</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>26.2</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>17.5</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>1450.</td>
<td>mg/kg</td>
<td>03/22/2001</td>
<td>4866/6</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.4</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4425/331</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>1.4</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>1.9</td>
<td>mg/kg</td>
<td>03/21/2001</td>
<td>4866/5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-1</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/19/2001</td>
<td>010319-4</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>ICP Metals Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation Analyst/Method</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SKR</td>
<td>3050B</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AMB</td>
<td>7471A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031206

Laboratory analyses were performed on samples utilizing procedures published in Title 40 of the Code of Federal Regulations, Parts 136 or 141, or in EPA Publication, SW-846, 3rd edition, September, 1986 and the latest promulgated update. ND(), where noted, indicates none detected with the reporting limit in parentheses. Samples will be retained for thirty days unless otherwise notified.

CONTINENTAL ANALYTICAL SERVICES, INC.

Clifford D. Baker  
Technical Manager

RECEIVED
MAR 30 2001  
BUREAU OF ENVIRONMENTAL REGULATION
**COOLER / SAMPLE RECEIPT FORM**

**File No:** 59162  
**Order No:** 109509

**Client Name:** KDHE

**Sample ID:** 50000C

**Date/Time cooler arrived:** 3/16/01 11:40  
**By:** CPE

**Unpacked By:** CPE  
**Entered into LIMS by:** CPE  
**Date:** 3/16/01

**Cooler Identification:** CAS Cooler #:

**Cooler Size:**
- Small / Medium / Large / NA

**Delivered By:** UPS/FedEx/AirBrm/Pry Exp/Field S/Mail/Walk-In/Other

**Custody Seal:**
- Present (Intact or Broken)  
- Absent  
**Seal No:**  
**Seal Name:**  
**Seal Date:**  
**Seal matches Chain of Custody:** Yes / No / NA

**Type of Packing Material:** Blue Ice/Ice/Bubble/FOm/Paper/Peanuts/Vermiculite / NA

**Cooler Temperature (°C):**
- Temp. By: Temp. Blank  
- Poured  
- Surface  
- G P M

**Thermo. ID No:**  
**Thermo. Correction Factor (°C):**

**Sample Receipt Discrepancies:**
- [ ] No  
- [ ] Yes (See detail below)

- [ ] Chain of Custody not present  
- [ ] Broken or Leaking Containers:  
- [ ] Information obtained from:
- Purchase Order/Letter received with samples  
- [ ] Sample listed on Chain of Custody, not received:
- [ ] Sample description on container label different from Chain of Custody:
- [ ] Container label absent  
- [ ] Sample excluded from Chain of Custody:  
- [ ] Air bubbles in VOA vials:

- [ ] Chain of Custody incomplete:
  - [ ] Chain of Custody missing time sampled  
  - [ ] Time sampled obtained from container label  
  - [ ] Chain of Custody missing data sampled  
  - [ ] Date sampled obtained from container label

**Detailed Description/Comments:**

**Did Project Manager contact client regarding cooler/sample receipt conditions:** Yes / No  
**Who was contacted:**  
**Remarks:**

**Reviewed by Project Manager:** mam  
**Date:** 3/16/01  
**Continental Analytical Services, Inc.**
## Chain-of-Custody Record

### Continental Analytical Services, Inc.
1804 Glendale • Salina, KS 67401
(785) 827-1273 • (800) 535-3076
FAX (785) 823-7830

### PROJECT # PROJECT NAME
Cherryvale Yards

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>C-COMP</th>
<th>G-GRAB</th>
<th>FIELD FILTERED</th>
<th>SAMPLE IDENTIFICATION</th>
<th>FOR CONTAINERS</th>
<th>RELINQUISHED BY (SIGNATURE):</th>
<th>RELINQUISHED BY (PRINTED):</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/16/01</td>
<td>1600</td>
<td>6</td>
<td></td>
<td></td>
<td>670 Martin 0-6&quot;</td>
<td>1 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03/16/01</td>
<td>1130</td>
<td>6</td>
<td></td>
<td></td>
<td>Page 1 0-6&quot;</td>
<td>1 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03/16/01</td>
<td>1145</td>
<td>6</td>
<td></td>
<td></td>
<td>Page 4 0-6&quot;</td>
<td>1 X X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03/16/01</td>
<td>1500</td>
<td>6</td>
<td></td>
<td></td>
<td>SB-3 0-6&quot;</td>
<td>1 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03/16/01</td>
<td>1930</td>
<td>6</td>
<td></td>
<td></td>
<td>SB-4 0-6&quot;</td>
<td>1 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03/16/01</td>
<td>1445</td>
<td>6</td>
<td></td>
<td></td>
<td>SB-2 0-6&quot;</td>
<td>1 X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03/16/01</td>
<td>1130</td>
<td>6</td>
<td></td>
<td></td>
<td>SB-3 0-6&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03/16/01</td>
<td>1135</td>
<td>6</td>
<td></td>
<td></td>
<td>SB-4 0-6&quot;</td>
<td>1 X X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03/16/01</td>
<td>1250</td>
<td>6</td>
<td></td>
<td></td>
<td>619 Martin 0-4&quot;</td>
<td>1 X X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### REMARKS
REQUESTED TURNAROUND, PRESERVATIVE, ETC.
Neal req. 3/16 09 03/16/01

### RECEIVED AT LABORATORY BY (SIGNATURE): RECEIVED AT LABORATORY BY (PRINTED):
John Cooper

### REPORT TO:
Cheryl Rupert

### INVOICE TO:
Attention:
Address:
Phone:
FAX #:

### SHIPPED VIA:
Airbill #:
Seal #:
Seal Date:

### CAS 13-90-09-1.0K

Consolidated Printing - Salina, Kansas
White — Laboratory Copy
Yellow — Client Copy
# Chain-of-Custody Record

**Continental Analytical Services, Inc.**
1804 Glendale • Salina, KS 67401
(785) 827-1273 • (800) 535-3076
FAX (785) 823-7830

**PROJECT #**
**PROJECT NAME**

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>C-G-GRAB</th>
<th>FIELD FILTERED</th>
<th>FILTERED</th>
<th>SAMPLE IDENTIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/14/01</td>
<td>17:00</td>
<td>6</td>
<td></td>
<td></td>
<td>Front #3 0-6'</td>
</tr>
<tr>
<td>03/14/01</td>
<td>13:40</td>
<td>0</td>
<td></td>
<td></td>
<td>S2H Front #4 0-6'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results by 03/27/01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RELINQUISHED BY (SIGNATURE):</th>
<th>RELINQUISHED BY (PRINTED):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ralph Boren</td>
<td>Ralph Boren</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RECEIVED AT LABORATORY BY (SIGNATURE/PRINTED):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rupert</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REPORT TO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention:</td>
</tr>
<tr>
<td>Address:</td>
</tr>
<tr>
<td>Phone #:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(REQUESTED TURNAROUND, PRESERVATIVE, ETC.)</td>
</tr>
</tbody>
</table>

| 03/16/01 | 09:30 |
| 03/16/01 | 11:40 |
| 03/19/01 | 07:31 |

<table>
<thead>
<tr>
<th>RECEIVED BY (SIGNATURE):</th>
<th>RECEIVED BY (PRINTED):</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Corgan</td>
<td>John Corgan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SHIPPED VIA:</th>
<th>Seal #:</th>
<th>Seal Date:</th>
</tr>
</thead>
</table>

**INVOICE TO:**

<table>
<thead>
<tr>
<th>Attention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone #:</td>
</tr>
</tbody>
</table>

**CONSORTIUM PRINTING - SALINA, KANSAS**
White — Laboratory Copy Yellow — Client Copy

CAS 13-96-09.1 OK
Dear Mr. Brown:

This laboratory report consisting of 9 pages contains the analytical results for the following samples:

<table>
<thead>
<tr>
<th>CAS LAB ID #</th>
<th>SAMPLE DESCRIPTION</th>
<th>SAMPLE TYPE</th>
<th>DATE SAMPLED</th>
</tr>
</thead>
<tbody>
<tr>
<td>01031970</td>
<td>618 Front #2</td>
<td>Solid</td>
<td>03/15/2001</td>
</tr>
<tr>
<td>01031971</td>
<td>617 Front #2</td>
<td>Solid</td>
<td>03/15/2001</td>
</tr>
<tr>
<td>01031972</td>
<td>621 Front #2</td>
<td>Solid</td>
<td>03/15/2001</td>
</tr>
<tr>
<td>01031973</td>
<td>618 Front #1</td>
<td>Solid</td>
<td>03/15/2001</td>
</tr>
<tr>
<td>01031974</td>
<td>513 Front #3</td>
<td>Solid</td>
<td>03/15/2001</td>
</tr>
<tr>
<td>01031975</td>
<td>509 Front #4</td>
<td>Solid</td>
<td>03/15/2001</td>
</tr>
<tr>
<td>01031976</td>
<td>513 Front #2</td>
<td>Solid</td>
<td>03/15/2001</td>
</tr>
<tr>
<td>01031977</td>
<td>509 Front #3</td>
<td>Solid</td>
<td>03/15/2001</td>
</tr>
<tr>
<td>01031978</td>
<td>610 Front #1</td>
<td>Solid</td>
<td>03/15/2001</td>
</tr>
<tr>
<td>01031979</td>
<td>621 Front #1</td>
<td>Solid</td>
<td>03/15/2001</td>
</tr>
</tbody>
</table>

Thank you for choosing Continental for this project. If you have any questions, please contact me at (800)-535-3076.

CONTINENTAL ANALYTICAL SERVICES, INC.

Gregory J. Groene
Project Manager
### Analysis Results

#### Lab Number: 01031970
- **Sample Description:** 618 Front #2
- **Date Sampled:** 03/15/2001
- **Time Sampled:** 1430

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, TCLP</td>
<td>2.21</td>
<td>mg/L</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>33.7</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>240.0</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>55.8</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>19.3</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>3680.0</td>
<td>mg/kg</td>
<td>04/01/2001</td>
<td>4866/14</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.8</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4425/331</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>3.5</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>4.4</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
</tbody>
</table>

#### Analysis Details

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, TCLP</td>
<td>03/29/2001</td>
<td>010329-5</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-1</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>TCLP Prep</td>
<td>03/28/2001</td>
<td>010328-1</td>
<td>KNH</td>
<td>1311</td>
</tr>
</tbody>
</table>

**Conclusion of Lab Number: 01031970**

### Analysis Results

#### Lab Number: 01031971
- **Sample Description:** 617 Front #2
- **Date Sampled:** 03/15/2001
- **Time Sampled:** 1150

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>21.8</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>250.0</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>32.8</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>15.9</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
</tbody>
</table>

**Continued...**
Client: Kansas Dept. of Health & Environment
Lab Number: 01031971
Sample Description: 617 Front #2

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, Total (ICP)</td>
<td>1660.</td>
<td>mg/kg</td>
<td>04/01/2001</td>
<td>4866/14</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.8</td>
<td>mg/kg</td>
<td>03/31/2001</td>
<td>4425/332</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>2.2</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>3.4</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-2</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td></td>
<td></td>
<td>SKR</td>
<td>3050B</td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td></td>
<td></td>
<td>AMB</td>
<td>7471A</td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031971

Lab Number: 01031972
Sample Description: 621 Front #2

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>6.6</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>160.</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>5.4</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>21.7</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>152</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>ND(0.1)</td>
<td>mg/kg</td>
<td>03/31/2001</td>
<td>4425/332</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
</tbody>
</table>

-Continued-
Client: Kansas Dept. of Health & Environment
Lab Number: 01031972

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-2</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>SKR</td>
<td>3050B</td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td>03/28/2001</td>
<td>010328-2</td>
<td>AMB</td>
<td>7471A</td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031972

Lab Number: 01031973
Sample Description: 618 Front #1

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, TCLP</td>
<td>2.12</td>
<td>mg/L</td>
<td>03/30/2001</td>
<td>010329-5</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>31.3</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>010329-2</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>190.</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>010329-2</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>41.0</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>010329-2</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>18.1</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>010329-2</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>3190.</td>
<td>mg/kg</td>
<td>04/01/2001</td>
<td>010329-2</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.7</td>
<td>mg/kg</td>
<td>03/31/2001</td>
<td>010329-2</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>4.1</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>010329-2</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>3.7</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>010329-2</td>
<td>MAG</td>
<td>6010B</td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031973

Analysis
<table>
<thead>
<tr>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/29/2001</td>
<td>010329-5</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010329-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010329-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010329-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-2</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-2</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-1</td>
<td>KNH</td>
<td>1311</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
</tbody>
</table>

---Continued---
### Analysis

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, TCLP</td>
<td>0.34</td>
<td>mg/L</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>12.4</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>200.</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>28.4</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>17.0</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>1110.</td>
<td>mg/kg</td>
<td>04/01/2001</td>
<td>4866/14</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.5</td>
<td>mg/kg</td>
<td>03/31/2001</td>
<td>4425/332</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>2.1</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>1.6</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>TCLP Prep</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICP Metals TCLP Preparation Analyst/Method</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion of Lab Number: 01031974**

### Analysis

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>17.9</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>480.</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>32.3</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>29.0</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>1710.</td>
<td>mg/kg</td>
<td>04/01/2001</td>
<td>4866/14</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.6</td>
<td>mg/kg</td>
<td>03/31/2001</td>
<td>4425/332</td>
</tr>
</tbody>
</table>

**Conclusion of Lab Number: 01031975**

---

**Continental Analytical Services, Inc.**

**LABORATORY REPORT**

Client: Kansas Dept. of Health & Environment

Lab Number: 01031974
Sample Description: 513 Front #3
Date Sampled: 03/15/2001
Time Sampled: 1145

---

**Continental Analytical Services, Inc.**

**BUREAU OF ENVIRONMENTAL REMEDIATION**

**RECEIVED**

**APR 03 2001**
Client: Kansas Dept. of Health & Environment  
Lab Number: 01031975  
Sample Description: 509 Front #4

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selenium, Total (ICP)</td>
<td>2.8</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>2.2</td>
<td>mg/kg</td>
<td>03/29/2001</td>
<td>4866/13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-2</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>SKR</td>
<td>3050B</td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>AMB</td>
<td>7471A</td>
</tr>
</tbody>
</table>

**Conclusion of Lab Number: 01031975**

Lab Number: 01031976  
Sample Description: 513 Front #2  
Date Sampled: 03/15/2001  
Time Sampled: 1400

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>6.4</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>110.</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>3.4</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>17.4</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>85.0</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>ND(0.1)</td>
<td>mg/kg</td>
<td>03/31/2001</td>
<td>4425/332</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-2</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
</tbody>
</table>

---Continued---

**RECEIVED**

APR 03 2001  
BUREAU OF ENVIRONMENTAL REMEDIATION  
Continental Analytical Services, Inc.
Client: Kansas Dept. of Health & Environment  
Lab Number: 01031976

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td>SKR 3050B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td>AMB 7471A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031976

Lab Number: 01031977  
Sample Description: 509 Front #3  
Date Sampled: 03/15/2001  
Time Sampled: 1330

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>7.6</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>150.</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>5.9</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>19.9</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>227.</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.1</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>1.3</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
</tbody>
</table>

Analysis

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td>SKR 3050B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td>AMB 7471A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031977

Lab Number: 01031978  
Sample Description: 610 Front #1  
Date Sampled: 03/15/2001  
Time Sampled: 1410

Analysis

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Continued-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Client: Kansas Dept. of Health & Environment
Lab Number: 01031978
Sample Description: 610 Front #1

## Analysis

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead, TCLP</td>
<td>4.97</td>
<td>mg/L</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>26.8</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>160.</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>121.</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>15.3</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>1540.</td>
<td>mg/kg</td>
<td>04/01/2001</td>
<td>4866/14</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>1.0</td>
<td>mg/kg</td>
<td>03/31/2001</td>
<td>4425/332</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>4.1</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>2.3</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
</tbody>
</table>

## Analysis

<table>
<thead>
<tr>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/29/2001</td>
<td>010329-6</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-2</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/28/2001</td>
<td>010328-2</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>04/01/2001</td>
<td>010329-6</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>03/31/2001</td>
<td>010328-3</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>03/31/2001</td>
<td>010328-3</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>03/31/2001</td>
<td>010328-3</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>03/31/2001</td>
<td>010328-3</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>03/31/2001</td>
<td>010328-3</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>03/31/2001</td>
<td>010328-3</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>03/31/2001</td>
<td>010328-3</td>
<td>AMB</td>
<td>7471A</td>
</tr>
</tbody>
</table>

## Conclusion of Lab Number: 01031978

Lab Number: 01031979
Sample Description: 621 Front #1

## Analysis

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Concentration</th>
<th>Units</th>
<th>Date Analyzed</th>
<th>Book/Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic, Total (ICP)</td>
<td>12.1</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Barium, Total</td>
<td>150.</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>23.3</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>16.6</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>764.</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>0.2</td>
<td>mg/kg</td>
<td>03/31/2001</td>
<td>4425/332</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>1.4</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>ND(1.0)</td>
<td>mg/kg</td>
<td>03/30/2001</td>
<td>4866/13</td>
</tr>
</tbody>
</table>

## Analysis

<table>
<thead>
<tr>
<th>Date Prepared</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
</tbody>
</table>

-Continued-
Client: Kansas Dept. of Health & Environment  
Lab Number: 01031979

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Date</th>
<th>QC Batch</th>
<th>Analyst</th>
<th>Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Lead, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Mercury, Total Soil</td>
<td>03/28/2001</td>
<td>010328-2</td>
<td>AMB</td>
<td>7471A</td>
</tr>
<tr>
<td>Selenium, Total (ICP)</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>Silver, Total</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>MAG</td>
<td>6010B</td>
</tr>
<tr>
<td>ICP Metals Total Preparation Analyst/Method</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>SKR</td>
<td>3050B</td>
</tr>
<tr>
<td>Mercury Total Preparation Analyst/Method</td>
<td>03/28/2001</td>
<td>010328-3</td>
<td>AMB</td>
<td>7471A</td>
</tr>
</tbody>
</table>

Conclusion of Lab Number: 01031979  

Laboratory analyses were performed on samples utilizing procedures published in Title 40 of the Code of Federal Regulations, Parts 136 or 141, or in EPA Publication, SW-846, 3rd edition, September, 1986 and the latest promulgated update. ND(), where noted, indicates none detected with the reporting limit in parentheses. Samples will be retained for thirty days unless otherwise notified.

Clifford J. Baker  
Technical Manager
COOLER / SAMPLE RECEIPT FORM

Client Name: KDHE
Sample ID: See COC

Date/Time cooler arrived: 3/27/01 14:20 By: mam
Unpacked By: mam Entered into LIMS by: ccr Date: 3/27/01

File No.: 5962
Order No.: 59714

Cooler Identification: CAS Cooler #: (Client’s Cooler/Box/Letter/Hand Delivered
Other:)

Cooler Size: Small / Medium / Large / NA

Delivered By: UPS/FedX/Air Brn/Fay Exp/Field S/Mail/Walk-In/Other

Air Bill Number: 

Custody Seal: Present (Intact or Broken) Absent Seal No: 

Seal Name: Seal Date: Seal matches Chain of Custody: Yes / No / NA

Type of Packing Material: Blue Ice / Ice / Bubble / Foam / Paper / Peanuts / Vermiculite / NA

Cooler Temperature (°C): 1 2 3 4 5 6 7 8 9 10 11 12

(Temperature includes correction factor.)


Thermo. ID No.: 154 Thermo. Correction Factor (°C): 1

Sample Receipt Discrepancies: X No □ Yes (See detail below)

☐ Chain of Custody not present
☐ Information obtained from:
  Purchase Order/Letter received with samples

☐ Broken or Leaking Containers:

☐ Container label absent

☐ Chain of Custody incomplete

☐ Chain of Custody missing time sampled
☐ Time sampled obtained from container label

☐ Chain of Custody missing date sampled
☐ Date sampled obtained from container label

☐ Sample excluded from Chain of Custody:

☐ Broken or Leaking Containers:

☐ Sample included in Chain of Custody, not received:

☐ Sample description on container label different from
  Chain of Custody:

☐ Sample description on container label different from
  Chain of Custody:

Detailed Description/Comments: 

Did Project Manager contact client regarding cooler/sample receipt conditions: Yes / No

Who was contacted: Remarks:

Reviewed by Project Manager: mam Date: 3/27/01 Continental
Analytical Services, Inc.
<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>C-COMP</th>
<th>G-GRAB</th>
<th>FILTERED</th>
<th>YN</th>
<th>SAMPLE IDENTIFICATION</th>
<th># OF CONTAINERS</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/01</td>
<td>14:50</td>
<td>618 Front #1</td>
<td>0-0</td>
<td>x</td>
<td>x</td>
<td>618 Front #1</td>
<td>1</td>
<td>Analysis needs to be run by 3/30/01</td>
</tr>
<tr>
<td>03/15</td>
<td>11:50</td>
<td>617 Front #2</td>
<td>0-0</td>
<td>x</td>
<td>x</td>
<td>617 Front #2</td>
<td>1</td>
<td>Case Except 2LP on 621 Front #1</td>
</tr>
<tr>
<td>03/15</td>
<td>13:00</td>
<td>618 Front #1</td>
<td>0-0</td>
<td>x</td>
<td>x</td>
<td>618 Front #1</td>
<td>1</td>
<td>Hold for 2LP!</td>
</tr>
<tr>
<td>03/15</td>
<td>11:50</td>
<td>613 Front #3</td>
<td>0-0</td>
<td>x</td>
<td>x</td>
<td>613 Front #3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>03/15</td>
<td>13:00</td>
<td>609 Front #4</td>
<td>0-0</td>
<td>x</td>
<td>x</td>
<td>609 Front #4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>03/15</td>
<td>14:00</td>
<td>613 Front #2</td>
<td>0-0</td>
<td>x</td>
<td>x</td>
<td>613 Front #2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>03/15</td>
<td>13:30</td>
<td>605 Front #3</td>
<td>0-0</td>
<td>x</td>
<td>x</td>
<td>605 Front #3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>03/15</td>
<td>14:50</td>
<td>610 Front #1</td>
<td>0-0</td>
<td>x</td>
<td>x</td>
<td>610 Front #1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

REMARKS (REQUESTED TURNAROUND, PRESERVATIVE, ETC.)
- Analysis needs to be run by 3/30/01
- Case Except 2LP on 621 Front #1
- Hold for 2LP!
### INORGANIC CHEMISTRY

**Report To:** Bureau of Env. Remediation  
**Forbes Field, Bldg. 740**  
**Attn:** Randy Brown  
**Topeka KS 66620**

**Collection Location:** C306371097 Cherryvale Rinsate

**Collector:** Randy Brown-BER  
**Matrix:** Water  
**Collect Depth:**

**Date/Time Collected:** 03/06/01 14:30  
**Date/Time Received:** 03/08/01 11:22

**Sample Comments:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Analytical Result</th>
<th>Units</th>
<th>Analysis Date</th>
<th>Analytical Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>0.258</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Antimony</td>
<td>&lt; 0.050</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Arsenic</td>
<td>&lt; 0.050</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Barium</td>
<td>&lt; 0.005</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Beryllium</td>
<td>&lt; 0.001</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Bismuth</td>
<td>&lt; 0.010</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Cadmium</td>
<td>&lt; 0.005</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Calcium</td>
<td>4.65</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Chromium</td>
<td>&lt; 0.010</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Cobalt</td>
<td>&lt; 0.010</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Copper</td>
<td>&lt; 0.010</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Iron</td>
<td>0.234</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Lead</td>
<td>&lt; 0.050</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Magnesium</td>
<td>0.13</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Manganese</td>
<td>0.019</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Mercury</td>
<td>&lt; 0.0065</td>
<td>mg/L</td>
<td>03/09/01</td>
<td>EPA 245.2</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>&lt; 0.020</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Nickel</td>
<td>&lt; 0.005</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Potassium</td>
<td>0.12</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Silicon</td>
<td>0.250</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Silver</td>
<td>&lt; 0.010</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Sodium</td>
<td>0.16</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Tellurium</td>
<td>&lt; 0.050</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Vanadium</td>
<td>&lt; 0.005</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
<tr>
<td>Zinc</td>
<td>0.391</td>
<td>mg/L</td>
<td>03/14/01</td>
<td>EPA 200.7</td>
</tr>
</tbody>
</table>

**Reporting Analyst:** REH  
**Date Reported:** 03/16/01

**Copies To:** File

---

**Environmental Laboratories**

Inorganic Chemistry (785) 296-1657  
Organic Chemistry (785) 296-1647  
Radiochemistry (785) 296-1629  
Env. Microbiology (785) 296-0971

**Health Laboratories**

Diagnostic Micro. (785) 296-1636  
Neonatal Screening (785) 296-1651  
Serology (785) 296-1653  
Virology (785) 296-1645
ATTACHMENT D

FIELD X-RAY FLUORESCENCE (XRF)
ANALYTICAL FIELD SHEETS
## KDHE/Bureau of Environmental Remediation
### Site Assessment Program
Nitron 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets

**Date:** 03/01/2001  **Site Name:** Cherryvale  **Operator Name:** R. Brown

**System Check, Warm-Up and Internal Calibration Notes:**

On 16/00 Res 394 eV SSTok.

**Method 6200 Utilized?** Y 

**In-situ readings?** Y 

If N, briefly explain sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.: 

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #</th>
<th>Source</th>
<th>Run Time (sec.)</th>
<th>Lead (mg/kg)</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cal</td>
<td>538</td>
<td></td>
<td></td>
<td></td>
<td>Cal</td>
</tr>
<tr>
<td>High Std</td>
<td>539</td>
<td>Cd-104</td>
<td>62</td>
<td>569±160</td>
<td>Cd &lt; 73.0</td>
</tr>
<tr>
<td>Page 1</td>
<td>541</td>
<td>Am-241</td>
<td>62</td>
<td></td>
<td>Cd &lt; 57.0 Samples 6i130</td>
</tr>
<tr>
<td>Page 1</td>
<td>542</td>
<td>Cd-104</td>
<td>62</td>
<td>333±30</td>
<td></td>
</tr>
<tr>
<td>Page 1</td>
<td>543</td>
<td>Cd-104</td>
<td>61</td>
<td>485±37</td>
<td></td>
</tr>
<tr>
<td>Page 1</td>
<td>544</td>
<td>Am-241</td>
<td>63</td>
<td></td>
<td>Cu &lt; 47.0</td>
</tr>
<tr>
<td>Page 1</td>
<td>545</td>
<td>Am-241</td>
<td>62</td>
<td></td>
<td>Cu &lt; 49.0</td>
</tr>
<tr>
<td>Page 1</td>
<td>546</td>
<td>Cd-104</td>
<td>61</td>
<td>543±32</td>
<td></td>
</tr>
<tr>
<td>Page 2</td>
<td>547</td>
<td>Cd-104</td>
<td>61</td>
<td>397±31</td>
<td>Cd &lt; 53.0</td>
</tr>
<tr>
<td>Page 2</td>
<td>548</td>
<td>Am-241</td>
<td>63</td>
<td></td>
<td>Cu &lt; 53.0</td>
</tr>
<tr>
<td>Page 2</td>
<td>549</td>
<td>Am-241</td>
<td>62</td>
<td></td>
<td>Cd &lt; 49.0</td>
</tr>
<tr>
<td>Page 2</td>
<td>550</td>
<td>Cd-104</td>
<td>61</td>
<td>496±39</td>
<td></td>
</tr>
<tr>
<td>Page 2</td>
<td>551</td>
<td>Cd-104</td>
<td>61</td>
<td>420±42</td>
<td></td>
</tr>
<tr>
<td>Page 2</td>
<td>552</td>
<td>Am-241</td>
<td></td>
<td></td>
<td>Ca &lt; 51.0 Na-241 Appal</td>
</tr>
<tr>
<td>Page 3</td>
<td>553</td>
<td>Cd-104</td>
<td>62</td>
<td>450±38</td>
<td></td>
</tr>
<tr>
<td>Page 3</td>
<td>554</td>
<td>Cd-104</td>
<td>62</td>
<td>615±45</td>
<td></td>
</tr>
<tr>
<td>Page 3</td>
<td>555</td>
<td>Cd-104</td>
<td>62</td>
<td>388±38</td>
<td></td>
</tr>
</tbody>
</table>
Date: 03/05/01  Site Name:  Chequawaka Yard  Operator Name:  R. Brand

System Check, Warm-Up and Internal Calibration Notes:

Method 6200 Utilized? Y  N  In-situ readings? Y  N

If N, briefly explain sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.:

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source:</th>
<th>Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page 4</td>
<td>556</td>
<td>Run 4-64</td>
<td>62</td>
<td>474±38</td>
<td>Samples observed at 2x64</td>
</tr>
<tr>
<td>Page 4</td>
<td>557</td>
<td>Run 4-64</td>
<td>62</td>
<td>463±36</td>
<td></td>
</tr>
<tr>
<td>Page 4</td>
<td>558</td>
<td>Run 4-64</td>
<td>62</td>
<td>412±35</td>
<td></td>
</tr>
<tr>
<td>Page 4</td>
<td>559</td>
<td>Run 4-64</td>
<td>62</td>
<td>415±36</td>
<td></td>
</tr>
<tr>
<td>Page 5</td>
<td>560</td>
<td>Run 4-64</td>
<td>62</td>
<td>548±42</td>
<td></td>
</tr>
<tr>
<td>Page 5</td>
<td>561</td>
<td>Run 4-64</td>
<td>62</td>
<td>606±45</td>
<td></td>
</tr>
<tr>
<td>High 5</td>
<td>562</td>
<td>Run 4-64</td>
<td>65</td>
<td>561±150</td>
<td></td>
</tr>
</tbody>
</table>
KDHE/Bureau of Environmental Remediation  
Site Assessment Program  
Niton 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets

Date: 03/06/01  
Site Name: Cherryvale Residential Yards  
Operator Name: P. Brown

System Check, Warm-Up and Internal Calibration Notes:

Method 6200 Utilized? Y  
In-situ readings? Y  
If N, briefly explain sample preparation, homogenization, sample drying, time/temperature, analysis notes, etc.  

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #</th>
<th>Source</th>
<th>Run Time (sec.)</th>
<th>Lead (mg/kg)</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-316-564</td>
<td>564</td>
<td>Cd-AG</td>
<td>6.2</td>
<td>10.6 ± 1.2</td>
<td></td>
</tr>
<tr>
<td>100-316-565</td>
<td>565</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.5 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-566</td>
<td>566</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-567</td>
<td>567</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-568</td>
<td>568</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-569</td>
<td>569</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-570</td>
<td>570</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-571</td>
<td>571</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-572</td>
<td>572</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-573</td>
<td>573</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-574</td>
<td>574</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-575</td>
<td>575</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-576</td>
<td>576</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-577</td>
<td>577</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-578</td>
<td>578</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-579</td>
<td>579</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-580</td>
<td>580</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-581</td>
<td>581</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
<tr>
<td>100-316-582</td>
<td>582</td>
<td>Cd-AG</td>
<td>3.1</td>
<td>9.6 ± 1.6</td>
<td></td>
</tr>
</tbody>
</table>

Page of 1
KDHE/Bureau of Environmental Remediation  
Site Assessment Program  
Niton 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets

Date: 03/10/01  Site Name: Cherryvale Residential Yards Site  Operator Name: Brun

System Check, Warm-Up and Internal Calibration Notes:

Method 6200 Utilized? Y N  In-situ readings? Y N  Bagged samples

If N, briefly explain sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.:

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #</th>
<th>Source</th>
<th>Run Time (sec.)</th>
<th>Lead (mg/kg)</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.</td>
</tr>
</tbody>
</table>

Page 1 of 1
<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #</th>
<th>Source</th>
<th>Run Time (sec.)</th>
<th>Lead (mg/kg)</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front #2</td>
<td>582</td>
<td>C-104</td>
<td>34</td>
<td>181 ± 37</td>
<td></td>
</tr>
<tr>
<td>Front #2</td>
<td>583</td>
<td>C-104</td>
<td>31</td>
<td>194 ± 37</td>
<td></td>
</tr>
<tr>
<td>Front #2</td>
<td>584</td>
<td>C-104</td>
<td>31</td>
<td>196 ± 40</td>
<td></td>
</tr>
<tr>
<td>Front #3</td>
<td>585</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S34 Front</td>
<td>586</td>
<td>C-104</td>
<td>31</td>
<td>161 ± 37</td>
<td></td>
</tr>
<tr>
<td>S34 Front</td>
<td>587</td>
<td>C-104</td>
<td>31</td>
<td>144 ± 34</td>
<td></td>
</tr>
<tr>
<td>S34 Front</td>
<td>588</td>
<td>C-104</td>
<td>44</td>
<td>176 ± 38</td>
<td></td>
</tr>
<tr>
<td>S34 Front</td>
<td>589</td>
<td>C-104</td>
<td>31</td>
<td>180 ± 39</td>
<td></td>
</tr>
<tr>
<td>S34 Front</td>
<td>590</td>
<td>C-104</td>
<td>31</td>
<td>186 ± 33</td>
<td></td>
</tr>
<tr>
<td>Front #3</td>
<td>591</td>
<td>C-104</td>
<td>31</td>
<td>194 ± 33</td>
<td></td>
</tr>
<tr>
<td>Front #3</td>
<td>592</td>
<td>C-104</td>
<td>31</td>
<td>188 ± 33</td>
<td></td>
</tr>
<tr>
<td>Front #3</td>
<td>593</td>
<td>C-104</td>
<td>31</td>
<td>186 ± 33</td>
<td></td>
</tr>
<tr>
<td>Trench 5</td>
<td>594</td>
<td>C-104</td>
<td>62</td>
<td>1850 ± 61</td>
<td></td>
</tr>
<tr>
<td>Trench 5</td>
<td>595</td>
<td>C-104</td>
<td>62</td>
<td>1620 ± 61</td>
<td>Field 12 ppm</td>
</tr>
<tr>
<td>Trench 5</td>
<td>596</td>
<td>C-104</td>
<td>31</td>
<td>1620 ± 56</td>
<td>Field 12 ppm</td>
</tr>
</tbody>
</table>

Comments: Off 12 ppm
KDHE/Bureau of Environmental Remediation  
Site Assessment Program  
Niton 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets

Date: 03/06/19  
Site Name: Cherryvale Residential Yards Site  
Operator Name: [Signature]

System Check, Warm-Up and Internal Calibration Notes:

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source:</th>
<th>Run Time (sec):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>524 Frnt #4</td>
<td>617</td>
<td>Cd-104</td>
<td>3.1</td>
<td>5.06 ± 48</td>
<td>C-6.11 Sample Ap</td>
</tr>
<tr>
<td>524 Frnt #2</td>
<td>618</td>
<td>Cd-104</td>
<td>3.0</td>
<td>4.7 ± 48</td>
<td></td>
</tr>
<tr>
<td>524 Frnt #3</td>
<td>619</td>
<td>Cd-104</td>
<td>3.7</td>
<td>7.34 ± 56</td>
<td></td>
</tr>
<tr>
<td>524 Frnt #3</td>
<td>620</td>
<td>Cd-104</td>
<td>3.1</td>
<td>4.89 ± 45</td>
<td></td>
</tr>
<tr>
<td>524 Frnt #3</td>
<td>621</td>
<td>Cd-104</td>
<td>3.1</td>
<td>100 ± 80</td>
<td></td>
</tr>
<tr>
<td>520 Frnt #1</td>
<td>622</td>
<td>Cd-104</td>
<td>4.1</td>
<td>647 ± 52</td>
<td></td>
</tr>
<tr>
<td>520 Frnt #1</td>
<td>623</td>
<td>Cd-104</td>
<td>3.1</td>
<td>611 ± 61</td>
<td></td>
</tr>
<tr>
<td>520 Frnt #1</td>
<td>624</td>
<td>Cd-104</td>
<td>3.1</td>
<td>456 ± 56</td>
<td></td>
</tr>
<tr>
<td>520 Frnt #4</td>
<td>625</td>
<td>Cd-104</td>
<td>3.1</td>
<td>1461 ± 94</td>
<td></td>
</tr>
<tr>
<td>520 Frnt #4</td>
<td>626</td>
<td>Cd-104</td>
<td>3.1</td>
<td>916 ± 49</td>
<td></td>
</tr>
<tr>
<td>520 Frnt #4</td>
<td>627</td>
<td>Cd-104</td>
<td>3.1</td>
<td>6181 ± 50</td>
<td></td>
</tr>
<tr>
<td>Soil B Alley</td>
<td>628</td>
<td>Cd-104</td>
<td>3.2</td>
<td>361 ± 56</td>
<td></td>
</tr>
<tr>
<td>Soil C Alley</td>
<td>629</td>
<td>Cd-104</td>
<td>3.2</td>
<td>308 ± 43</td>
<td></td>
</tr>
<tr>
<td>Soil D Alley</td>
<td>630</td>
<td>Cd-104</td>
<td>3.2</td>
<td>330 ± 47</td>
<td></td>
</tr>
<tr>
<td>520 Frnt #1</td>
<td>631</td>
<td>Cd-104</td>
<td>3.4</td>
<td>589 ± 76</td>
<td></td>
</tr>
<tr>
<td>520 Frnt #1</td>
<td>632</td>
<td>Cd-104</td>
<td>3.4</td>
<td>259 ± 36</td>
<td></td>
</tr>
<tr>
<td>520 Frnt #1</td>
<td>633</td>
<td>Cd-104</td>
<td>3.7</td>
<td>1860 ± 74</td>
<td></td>
</tr>
<tr>
<td>520 Frnt #4</td>
<td>634</td>
<td>Cd-104</td>
<td>3.4</td>
<td>944 ± 75</td>
<td></td>
</tr>
</tbody>
</table>
Site: Chedoke Reservoir  
Operator: Brown

Method 6200 Utilized? Y N 
In-situ readings? Y N 
Bagged samples Y N 

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source:</th>
<th>Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>441-39-10</td>
<td>508</td>
<td>Cal-109</td>
<td>6.2</td>
<td>505 ± 16.0</td>
<td></td>
</tr>
<tr>
<td>441-39-10</td>
<td>519</td>
<td>Cal-109</td>
<td>3.1</td>
<td>487 ± 49</td>
<td></td>
</tr>
<tr>
<td>441-39-10</td>
<td>600</td>
<td>Cal-109</td>
<td>3.4</td>
<td>586 ± 53</td>
<td></td>
</tr>
<tr>
<td>441-39-10</td>
<td>601</td>
<td>Cal-109</td>
<td>3.4</td>
<td>654 ± 57</td>
<td></td>
</tr>
<tr>
<td>441-39-10</td>
<td>602</td>
<td>Cal-109</td>
<td>3.1</td>
<td>275 ± 35</td>
<td></td>
</tr>
<tr>
<td>441-39-10</td>
<td>603</td>
<td>Cal-109</td>
<td>3.1</td>
<td>434 ± 46</td>
<td></td>
</tr>
<tr>
<td>441-39-10</td>
<td>604</td>
<td>Cal-109</td>
<td>3.1</td>
<td>328 ± 23</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>605</td>
<td>Cal-109</td>
<td>3.1</td>
<td>670 ± 97</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>608</td>
<td>Cal-109</td>
<td>3.1</td>
<td>1070 ± 100</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>609</td>
<td>Cal-109</td>
<td>3.1</td>
<td>1040 ± 89</td>
<td>Field Csp</td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>610</td>
<td>Cal-109</td>
<td>3.1</td>
<td>1330 ± 96</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>611</td>
<td>Cal-109</td>
<td>3.2</td>
<td>360 ± 47</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>612</td>
<td>Cal-109</td>
<td>3.0</td>
<td>542 ± 56</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>613</td>
<td>Cal-109</td>
<td>3.3</td>
<td>1430 ± 99</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>614</td>
<td>Cal-109</td>
<td>3.3</td>
<td>1620 ± 40</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>615</td>
<td>Cal-109</td>
<td>3.3</td>
<td>1630 ± 49</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>616</td>
<td>Cal-109</td>
<td>3.3</td>
<td>1640 ± 58</td>
<td></td>
</tr>
</tbody>
</table>
KDHE/Bureau of Environmental Remediation  
Site Assessment Program  
Niton 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets

Date: 3/10/97  
Site Name: Cherryvale Residential Yards Site  
Operator Name: Dave Brown

System Check, Warm-Up and Internal Calibration Notes:

Method 6200 Utilized? Y N  
In-situ readings? Y N

If N, briefly explain sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.:  
Samples bagged in lab, transported to XRF lab, analyzed.

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source:</th>
<th>Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3114-102</td>
<td>53</td>
<td>Cd-109</td>
<td>31</td>
<td>318±3.3</td>
</tr>
<tr>
<td>C3114-101</td>
<td>654</td>
<td>Cd-109</td>
<td>31</td>
<td>337±4</td>
</tr>
<tr>
<td>C3114-103</td>
<td>654</td>
<td>Cd-109</td>
<td>31</td>
<td>337±4</td>
</tr>
<tr>
<td>C3114-104</td>
<td>658</td>
<td>Cd-109</td>
<td>31</td>
<td>279±3.7</td>
</tr>
<tr>
<td>C3114-105</td>
<td>659</td>
<td>Cd-109</td>
<td>31</td>
<td>294±3.9</td>
</tr>
<tr>
<td>C3114-106</td>
<td>659</td>
<td>Cd-109</td>
<td>31</td>
<td>273±3.7</td>
</tr>
<tr>
<td>C3114-107</td>
<td>661</td>
<td>Cd-109</td>
<td>31</td>
<td>233±3.9</td>
</tr>
<tr>
<td>C3114-108</td>
<td>661</td>
<td>Cd-109</td>
<td>31</td>
<td>187±3.7</td>
</tr>
<tr>
<td>C3114-109</td>
<td>662</td>
<td>Cd-109</td>
<td>31</td>
<td>187±3.7</td>
</tr>
<tr>
<td>C3114-1010</td>
<td>664</td>
<td>Cd-109</td>
<td>31</td>
<td>254±3.7</td>
</tr>
<tr>
<td>C3114-1011</td>
<td>664</td>
<td>Cd-109</td>
<td>31</td>
<td>254±3.7</td>
</tr>
<tr>
<td>C3114-1012</td>
<td>664</td>
<td>Cd-109</td>
<td>31</td>
<td>254±3.7</td>
</tr>
<tr>
<td>C3114-1013</td>
<td>664</td>
<td>Cd-109</td>
<td>31</td>
<td>254±3.7</td>
</tr>
<tr>
<td>C3114-1014</td>
<td>664</td>
<td>Cd-109</td>
<td>31</td>
<td>254±3.7</td>
</tr>
<tr>
<td>C3114-1015</td>
<td>664</td>
<td>Cd-109</td>
<td>31</td>
<td>254±3.7</td>
</tr>
</tbody>
</table>

Comments, Other Constituents, Concentrations, etc.:  
O-611 Sample Prep  
NI (Slipped)

Page 4 of 17
KDHE/Bureau of Environmental Remediation  
Site Assessment Program  
Niton 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets

Date: 8/31/2004  
Site Name: Cherryvale Residential Yards Site  
Operator Name: P. Brown

System Check, Warm-Up and Internal Calibration Notes:

Method 6200 Utilized? Y  
In-situ readings? Y

If N, briefly explain sample preparation, homogenization, sample drying time/ temp, analysis notes, etc.:

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source:</th>
<th>Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Med silly</td>
<td>669 6-20</td>
<td>Lab</td>
<td>62</td>
<td>18.6 ± 6.2</td>
<td>Lab sample</td>
</tr>
<tr>
<td>Page 1</td>
<td>670 6-18</td>
<td>Lab</td>
<td>34</td>
<td>6.1 ± 6</td>
<td></td>
</tr>
<tr>
<td>Page 1</td>
<td>671 6-70</td>
<td>Lab</td>
<td>31</td>
<td>4.8 ± 56</td>
<td></td>
</tr>
<tr>
<td>Page 1</td>
<td>672 6-18</td>
<td>Lab</td>
<td>34</td>
<td>6.0 ± 6</td>
<td>Lab sample</td>
</tr>
<tr>
<td>Page 2</td>
<td>673 6-18</td>
<td>Lab</td>
<td>35</td>
<td>3.0 ± 50</td>
<td></td>
</tr>
<tr>
<td>Page 2</td>
<td>674 6-70</td>
<td>Lab</td>
<td>31</td>
<td>5.6 ± 73</td>
<td></td>
</tr>
<tr>
<td>Page 2</td>
<td>675 6-18</td>
<td>Lab</td>
<td>31</td>
<td>4.9 ± 67</td>
<td></td>
</tr>
<tr>
<td>Page 3</td>
<td>676 6-18</td>
<td>Lab</td>
<td>34</td>
<td>7.1 ± 70</td>
<td></td>
</tr>
<tr>
<td>Page 3</td>
<td>677 6-70</td>
<td>Lab</td>
<td>30</td>
<td>4.4 ± 56</td>
<td></td>
</tr>
<tr>
<td>Page 3</td>
<td>678 6-18</td>
<td>Lab</td>
<td>34</td>
<td>4.1 ± 49</td>
<td></td>
</tr>
<tr>
<td>Page 3</td>
<td>679 6-18</td>
<td>Lab</td>
<td>40</td>
<td>4.1 ± 52</td>
<td>Field Dep</td>
</tr>
<tr>
<td>Page 4</td>
<td>680 6-10</td>
<td>Lab</td>
<td>34</td>
<td>4.6 ± 53</td>
<td></td>
</tr>
<tr>
<td>Page 4</td>
<td>681 6-70</td>
<td>Lab</td>
<td>31</td>
<td>5.2 ± 44</td>
<td></td>
</tr>
<tr>
<td>Page 4</td>
<td>682 6-10</td>
<td>Lab</td>
<td>35</td>
<td>4.8 ± 51</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>Page 5</td>
<td>683 6-10</td>
<td>Lab</td>
<td>34</td>
<td>5.5 ± 56</td>
<td></td>
</tr>
<tr>
<td>Page 5</td>
<td>684 6-10</td>
<td>Lab</td>
<td>31</td>
<td>4.9 ± 54</td>
<td></td>
</tr>
<tr>
<td>Page 5</td>
<td>685 6-70</td>
<td>Lab</td>
<td>31</td>
<td>6.5 ± 68</td>
<td></td>
</tr>
<tr>
<td>Page 5</td>
<td>686 6-10</td>
<td>Lab</td>
<td>34</td>
<td>6.8 ± 62</td>
<td>Field Dep</td>
</tr>
</tbody>
</table>
**Date:** 3/18/10  
**Site Name:** Cherryvale Residential Yards Site  
**Operator Name:** R. Brown

**System Check, Warm-Up and Internal Calibration Notes:**

Method 6200 Utilized? Y N  
In-situ readings? Y N  
If N, briefly explain sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.:

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #</th>
<th>Source</th>
<th>Run Time (sec.)</th>
<th>Lead (mg/kg)</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>687</td>
<td>687</td>
<td>Cd-109</td>
<td>31</td>
<td>164 ± 4</td>
<td></td>
</tr>
<tr>
<td>688</td>
<td>688</td>
<td>Cd-109</td>
<td>4</td>
<td>212 ± 3</td>
<td></td>
</tr>
<tr>
<td>689</td>
<td>689</td>
<td>Cd-109</td>
<td>3</td>
<td>134 ± 3</td>
<td></td>
</tr>
<tr>
<td>690</td>
<td>690</td>
<td>Cd-109</td>
<td>100</td>
<td>94 ± 7</td>
<td></td>
</tr>
<tr>
<td>691</td>
<td>691</td>
<td>Cd-109</td>
<td>100</td>
<td>94 ± 7</td>
<td></td>
</tr>
</tbody>
</table>
Date: 3/15/10  Site Name: Cherryvale Residential Yards Site  Operator Name: R Brown

System Check, Warm-Up and Internal Calibration Notes:

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source</th>
<th>Run Time (sec.)</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High St. 1</td>
<td>CD-104</td>
<td></td>
<td>62</td>
<td>5.78±16</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 1</td>
<td>CD-104</td>
<td></td>
<td>34</td>
<td>148±110</td>
<td>0-6&quot;</td>
</tr>
<tr>
<td>Martin Alley 2</td>
<td>CD-104</td>
<td></td>
<td>33</td>
<td>227±140</td>
<td></td>
</tr>
<tr>
<td>Martin Alley 3</td>
<td>CD-104</td>
<td></td>
<td>35</td>
<td>119±30</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>536 Martin 1</td>
<td></td>
<td>35</td>
<td>143±36</td>
<td>183±43</td>
<td></td>
</tr>
<tr>
<td>536 Martin 2</td>
<td></td>
<td>35</td>
<td>155±41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School S Alley</td>
<td></td>
<td>33</td>
<td>577±82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin #2</td>
<td></td>
<td>33</td>
<td>637±58</td>
<td>Rejected</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>33</td>
<td>383±70</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>33</td>
<td>394±71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin #3</td>
<td></td>
<td>33</td>
<td>938±94</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>33</td>
<td>1370±120</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>35</td>
<td>800±90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin #4</td>
<td></td>
<td>34</td>
<td>268±57</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>34</td>
<td>302±55</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>34</td>
<td>347±47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4/1 273±44 Field Dry
**KDHE/Bureau of Environmental Remediation**  
**Site Assessment Program**  
**Niton 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets**

**Date:** 3/14/01  
**Site Name:** Cherryvale Residential Yards Site  
**Operator Name:** Brown

**System Check, Warm-Up and Internal Calibration Notes:**  
by bug analysis  
Dried  
Sample depth 0-6.1

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source: Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Page 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Page 2 of 4
<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source:</th>
<th>Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample 1</td>
<td>635</td>
<td>Cd-109</td>
<td>31</td>
<td>447±45</td>
<td>0-6&quot; sample depth</td>
</tr>
<tr>
<td>Sample 2</td>
<td>636</td>
<td>Cd-109</td>
<td>31</td>
<td>460±54</td>
<td></td>
</tr>
<tr>
<td>Sample 3</td>
<td>637</td>
<td>Cd-109</td>
<td>41</td>
<td>130±52</td>
<td></td>
</tr>
<tr>
<td>Sample 4</td>
<td>638</td>
<td>Cd-109</td>
<td>31</td>
<td>702±75</td>
<td></td>
</tr>
<tr>
<td>Sample 5</td>
<td>639</td>
<td>Cd-109</td>
<td>31</td>
<td>563±61</td>
<td></td>
</tr>
<tr>
<td>Sample 6</td>
<td>640</td>
<td>Cd-109</td>
<td>33</td>
<td>1070±88</td>
<td></td>
</tr>
<tr>
<td>Sample 7</td>
<td>641</td>
<td>Cd-109</td>
<td>33</td>
<td>1010±84</td>
<td></td>
</tr>
<tr>
<td>Sample 8</td>
<td>642</td>
<td>Cd-109</td>
<td>33</td>
<td>1290±141</td>
<td></td>
</tr>
<tr>
<td>Sample 9</td>
<td>643</td>
<td>Cd-109</td>
<td>33</td>
<td>944±81</td>
<td></td>
</tr>
</tbody>
</table>

Method 6200 Utilized? Y N
In-situ readings? Y N
If N, briefly explain sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.: Samples dugged to revised 1"+ zipper trowel bags.
**KDHE/Bureau of Environmental Remediation**  
**Site Assessment Program**  
Niton 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets

**Date:** 03/26/01  
**Site Name:** Cherryvale Residential Yards Site  
**Operator Name:** A. Brown

**System Check, Warm-Up and Internal Calibration Notes:**

Method 6200 Utilized? Y N  
In-situ readings? Y N  
If N, briefly explain sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.:

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source:</th>
<th>Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High STD</td>
<td>1d-104</td>
<td></td>
<td>62</td>
<td>5190±160</td>
<td></td>
</tr>
<tr>
<td>Soil sample #4</td>
<td>34</td>
<td></td>
<td>34</td>
<td>119±24</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td>210±90</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td>1300±100</td>
<td></td>
</tr>
<tr>
<td>Core sample #2</td>
<td>31</td>
<td></td>
<td>40</td>
<td>43±1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td>332±66</td>
<td></td>
</tr>
<tr>
<td>520 from #1</td>
<td>34</td>
<td></td>
<td>74</td>
<td>722±77</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td>711±81</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td>485±43</td>
<td></td>
</tr>
<tr>
<td>524 from #2</td>
<td>35</td>
<td></td>
<td>34</td>
<td>728±48</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td>48±85</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td>1360±100</td>
<td></td>
</tr>
<tr>
<td>620 Martin</td>
<td>34</td>
<td></td>
<td>34</td>
<td>138±43</td>
<td>Lab Sample</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>35</td>
<td>932±39</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td>128±38</td>
<td></td>
</tr>
<tr>
<td>520 from #3</td>
<td>34</td>
<td></td>
<td>930±83</td>
<td>Lab Sample</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td>14±84</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td>1059±84</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>44</td>
<td>1090±82</td>
<td>Field Prep</td>
</tr>
</tbody>
</table>
Date: 03/15/01  Site Name: Cherryvale Residential Yards Site  Operator Name: R. Brown

System Check, Warm-Up and Internal Calibration Notes:
Samples dried  0-6 ft. sample depth  3x bag analysis

Method 6200 Utilized? Y  N  In-situ readings? Y  N  Bagged samples

If N, briefly explain sample preparation, homogenization, sample drying time/tempr, analysis notes, etc.:
Direct freeze dry at -10°C in lab correction oven

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source: Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 Fron #2</td>
<td>18704</td>
<td>35</td>
<td>224±60</td>
<td>0-60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>44</td>
<td>664±66</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>31</td>
<td>357±63</td>
<td></td>
</tr>
<tr>
<td>Martin Alley</td>
<td>35</td>
<td>35</td>
<td>725±84</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>34</td>
<td>764±74</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>35</td>
<td>676±95</td>
<td></td>
</tr>
<tr>
<td>524 Fron #3</td>
<td>34</td>
<td>1120±81</td>
<td>Lab sample</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>34</td>
<td>874±60</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>34</td>
<td>1000±93</td>
<td></td>
</tr>
<tr>
<td>Martin Road #1</td>
<td>34</td>
<td>105±30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>31</td>
<td>153±51</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>38</td>
<td>621±34</td>
<td></td>
</tr>
<tr>
<td>± 6</td>
<td></td>
<td>33</td>
<td>781±87</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>37</td>
<td>821±74</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>35</td>
<td>621±73</td>
<td></td>
</tr>
<tr>
<td>Martin #1</td>
<td>33</td>
<td>881±84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin #1</td>
<td>33</td>
<td>980±99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin #1</td>
<td>34</td>
<td>795±81</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**KDHE/Bureau of Environmental Remediation**  
**Site Assessment Program**  
**Nitron 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets**

*Date: 23/11/10  Site Name: Cherryvale Residential Yards Site  Operator Name: ____________________________*

**System Check, Warm-Up and Internal Calibration Notes:**

<table>
<thead>
<tr>
<th>Method</th>
<th>Utilized?</th>
<th>In-situ readings?</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

*If N, briefly explain sample preparation, homogenization, sample drying time/temp, analysis notes, etc.:*

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #</th>
<th>Source</th>
<th>Run Time (sec.)</th>
<th>Lead (mg/kg)</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Med STD</td>
<td></td>
<td>Lab</td>
<td>62</td>
<td>1030±61</td>
<td></td>
</tr>
<tr>
<td>Page 4</td>
<td></td>
<td>Lab</td>
<td>34</td>
<td>630±39</td>
<td></td>
</tr>
<tr>
<td>Page 6</td>
<td></td>
<td>Lab</td>
<td>34</td>
<td>576±54</td>
<td></td>
</tr>
<tr>
<td>Page 8</td>
<td></td>
<td>Lab</td>
<td>37</td>
<td>737±65</td>
<td></td>
</tr>
<tr>
<td>6id Martin 55</td>
<td></td>
<td>Lab</td>
<td>34</td>
<td>1240±96</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>6id Martin 55</td>
<td></td>
<td>Lab</td>
<td>34</td>
<td>1350±94</td>
<td></td>
</tr>
<tr>
<td>6id Martin 65</td>
<td></td>
<td>Lab</td>
<td>34</td>
<td>1230±90</td>
<td></td>
</tr>
<tr>
<td>6id Martin 64</td>
<td></td>
<td>Lab</td>
<td>38</td>
<td>670±57</td>
<td>Lab Sample</td>
</tr>
<tr>
<td>6id Martin 64</td>
<td></td>
<td>Lab</td>
<td>34</td>
<td>70±65</td>
<td></td>
</tr>
<tr>
<td>6id Martin 64</td>
<td></td>
<td>Lab</td>
<td>34</td>
<td>736±65</td>
<td></td>
</tr>
<tr>
<td>Martha Hall #3</td>
<td></td>
<td>Lab</td>
<td>37</td>
<td>1490±110</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td></td>
<td>Lab</td>
<td>33</td>
<td>1200±120</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td></td>
<td>Lab</td>
<td>33</td>
<td>1050±130</td>
<td></td>
</tr>
<tr>
<td>Freshley E500123</td>
<td></td>
<td>Lab</td>
<td>35</td>
<td>41±35</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td></td>
<td>Lab</td>
<td>31</td>
<td>204±91</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td></td>
<td>Lab</td>
<td>31</td>
<td>112±38</td>
<td></td>
</tr>
<tr>
<td>W Martin #2</td>
<td></td>
<td>Lab</td>
<td>35</td>
<td>410±61</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td></td>
<td>Lab</td>
<td>34</td>
<td>385±68</td>
<td></td>
</tr>
</tbody>
</table>

*Page 1 of 1*
**System Check, Warm-Up and Internal Calibration Notes:**

- Method 6200 Utilized? Y  N
- In-situ readings? Y  N

Samples obtained 24-hr. in zip-lock tyvek freezer bags, marked

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source:</th>
<th>Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Med Std</td>
<td>692</td>
<td>Cd-104</td>
<td>62</td>
<td>1050±1.1</td>
<td></td>
</tr>
<tr>
<td>610 Front #1</td>
<td>693</td>
<td>Cd-104</td>
<td>34</td>
<td>804±7.1</td>
<td>8-61</td>
</tr>
<tr>
<td>610 Front #1</td>
<td>694</td>
<td>Cd-104</td>
<td>37</td>
<td>812±8.8</td>
<td></td>
</tr>
<tr>
<td>610 Front #1</td>
<td>695</td>
<td>Cd-104</td>
<td>33</td>
<td>413±34</td>
<td></td>
</tr>
<tr>
<td>610 Front #2</td>
<td>696</td>
<td>Cd-104</td>
<td>31</td>
<td>488±61</td>
<td></td>
</tr>
<tr>
<td>610 Front #2</td>
<td>697</td>
<td>Cd-104</td>
<td>34</td>
<td>319±35</td>
<td></td>
</tr>
<tr>
<td>610 Front #2</td>
<td>698</td>
<td>Cd-104</td>
<td>33</td>
<td>317±34</td>
<td></td>
</tr>
<tr>
<td>610 Front #1</td>
<td>699</td>
<td>Cd-104</td>
<td>34</td>
<td>2050±100</td>
<td></td>
</tr>
<tr>
<td>610 Front #1</td>
<td>700</td>
<td>Cd-104</td>
<td>34</td>
<td>1710±74</td>
<td></td>
</tr>
<tr>
<td>610 Front #1</td>
<td>701</td>
<td>Cd-104</td>
<td>33</td>
<td>2460±100</td>
<td></td>
</tr>
<tr>
<td>610 Front #2</td>
<td>702</td>
<td>Cd-104</td>
<td>33</td>
<td>1780±94</td>
<td></td>
</tr>
<tr>
<td>610 Front #2</td>
<td>703</td>
<td>Cd-104</td>
<td>33</td>
<td>1790±93</td>
<td></td>
</tr>
<tr>
<td>610 Front #2</td>
<td>704</td>
<td>Cd-104</td>
<td>33</td>
<td>1830±97</td>
<td></td>
</tr>
<tr>
<td>610 Front #3</td>
<td>705</td>
<td>Cd-104</td>
<td>31</td>
<td>77±27</td>
<td></td>
</tr>
<tr>
<td>610 Front #3</td>
<td>706</td>
<td>Cd-104</td>
<td>31</td>
<td>81.5±25</td>
<td></td>
</tr>
<tr>
<td>610 Front #3</td>
<td>707</td>
<td>Cd-104</td>
<td>31</td>
<td>1150±72</td>
<td>True brick-slag</td>
</tr>
<tr>
<td>610 Front #3</td>
<td>708</td>
<td>Cd-104</td>
<td>38</td>
<td>1100±73</td>
<td>Here Lup</td>
</tr>
<tr>
<td>610 Front #3</td>
<td>709</td>
<td>Cd-104</td>
<td>31</td>
<td>104±26</td>
<td></td>
</tr>
</tbody>
</table>
Date: 03/21/2001  Site Name: Cherryvale  Operator Name: D. Brown

System Check, Warm-Up and Internal Calibration Notes:

Method 6200 Utilized? Y N In-situ readings? Y N Bagged samples:

If N, briefly explain sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.: Samples collected on 3/19, re-analyzed 3/21.

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source:</th>
<th>Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>017 Front #1</td>
<td>710</td>
<td>Cd-004</td>
<td>3.7</td>
<td>1150±5</td>
<td>0-6.1</td>
</tr>
<tr>
<td>017 Front #1</td>
<td>711</td>
<td>Cd-004</td>
<td>3.4</td>
<td>128±2</td>
<td></td>
</tr>
<tr>
<td>017 Front #1</td>
<td>712</td>
<td>Cd-004</td>
<td>3.3</td>
<td>1330±7</td>
<td></td>
</tr>
<tr>
<td>017 Front #1</td>
<td>713</td>
<td>Cd-004</td>
<td>3.4</td>
<td>72±3</td>
<td></td>
</tr>
<tr>
<td>017 Front #1</td>
<td>714</td>
<td>Cd-004</td>
<td>3.4</td>
<td>83±3</td>
<td></td>
</tr>
<tr>
<td>021 Front #1</td>
<td>715</td>
<td>Cd-009</td>
<td>3.1</td>
<td>860±7</td>
<td></td>
</tr>
<tr>
<td>021 Front #1</td>
<td>716</td>
<td>Cd-009</td>
<td>3.1</td>
<td>43±3</td>
<td></td>
</tr>
<tr>
<td>021 Front #1</td>
<td>717</td>
<td>Cd-009</td>
<td>3.1</td>
<td>416±4</td>
<td></td>
</tr>
<tr>
<td>021 Front #1</td>
<td>718</td>
<td>Cd-009</td>
<td>3.2</td>
<td>365±4</td>
<td></td>
</tr>
<tr>
<td>021 Front #1</td>
<td>719</td>
<td>Cd-009</td>
<td>3.4</td>
<td>49±3</td>
<td></td>
</tr>
<tr>
<td>021 Front #1</td>
<td>720</td>
<td>Cd-009</td>
<td>3.5</td>
<td>142±3</td>
<td></td>
</tr>
<tr>
<td>021 Front #1</td>
<td>721</td>
<td>Cd-009</td>
<td>3.5</td>
<td>124±2</td>
<td></td>
</tr>
<tr>
<td>017 Front #1</td>
<td>723</td>
<td>Cd-109</td>
<td>3.8</td>
<td>445±5</td>
<td></td>
</tr>
<tr>
<td>017 Front #1</td>
<td>724</td>
<td>Cd-109</td>
<td>3.5</td>
<td>512±5</td>
<td></td>
</tr>
<tr>
<td>017 Front #1</td>
<td>725</td>
<td>Cd-109</td>
<td>3.1</td>
<td>706±6</td>
<td></td>
</tr>
<tr>
<td>017 Front #1</td>
<td>726</td>
<td>Cd-109</td>
<td>3.1</td>
<td>523±5</td>
<td></td>
</tr>
<tr>
<td>017 Front #1</td>
<td>727</td>
<td>Cd-109</td>
<td>3.1</td>
<td>837±7</td>
<td></td>
</tr>
<tr>
<td>017 Front #1</td>
<td>728</td>
<td>Cd-109</td>
<td>3.1</td>
<td>740±8</td>
<td></td>
</tr>
<tr>
<td>I.D.</td>
<td>XL</td>
<td>Source</td>
<td>Run. Time</td>
<td>Lead Family</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>--------</td>
<td>-----------</td>
<td>--------------</td>
<td>----------</td>
</tr>
<tr>
<td>617</td>
<td>720</td>
<td>cd-109</td>
<td>3.7</td>
<td>6530 ± 80</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>720</td>
<td>cd-109</td>
<td>3.4</td>
<td>2000 ± 100</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>731</td>
<td>cd-109</td>
<td>3.1</td>
<td>867 ± 76</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>732</td>
<td>cd-109</td>
<td>3.1</td>
<td>472 ± 100</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>733</td>
<td>cd-109</td>
<td>3.1</td>
<td>812 ± 46</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>734</td>
<td>cd-109</td>
<td>3.1</td>
<td>976 ± 10</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>735</td>
<td>cd-109</td>
<td>3.4</td>
<td>914 ± 68</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>736</td>
<td>cd-109</td>
<td>3.1</td>
<td>808 ± 45</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>737</td>
<td>cd-109</td>
<td>3.2</td>
<td>75.1 ± 20</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>738</td>
<td>cd-109</td>
<td>3.5</td>
<td>113 ± 30</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>739</td>
<td>cd-109</td>
<td>3.2</td>
<td>51 ± 25</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>740</td>
<td>cd-109</td>
<td>6.3</td>
<td>875 ± 35</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>741</td>
<td>cd-109</td>
<td>3.7</td>
<td>422 ± 49</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>742</td>
<td>cd-109</td>
<td>3.9</td>
<td>536 ± 53</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>743</td>
<td>cd-109</td>
<td>3.1</td>
<td>723 ± 41</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>744</td>
<td>cd-109</td>
<td>3.2</td>
<td>713 ± 57</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>745</td>
<td>cd-109</td>
<td>3.4</td>
<td>506 ± 51</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>740</td>
<td>cd-109</td>
<td>3.1</td>
<td>542 ± 57</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>748</td>
<td>cd-109</td>
<td>3.1</td>
<td>737 ± 78</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>749</td>
<td>cd-109</td>
<td>3.1</td>
<td>545 ± 60</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>750</td>
<td>cd-109</td>
<td>3.1</td>
<td>247 ± 45</td>
<td>KinV11</td>
</tr>
<tr>
<td>617</td>
<td>752</td>
<td>cd-109</td>
<td>3.0</td>
<td>276 ± 75</td>
<td></td>
</tr>
<tr>
<td>617</td>
<td>753</td>
<td>cd-109</td>
<td>3.1</td>
<td>254 ± 40</td>
<td></td>
</tr>
</tbody>
</table>
KDHE/Bureau of Environmental Remediation  
Site Assessment Program  
Niton 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets

Date: 03/27/01  Site Name: Cherryvale Residential Yards Site  Operator Name: Brown

System Check, Warm-Up and Internal Calibration Notes:

Method 6200 Utilized? Y N  In-situ readings? Y N  Bagged

If N, briefly explain sample preparation, homogenization, sample drying time/ temp, analysis notes, etc.:

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source</th>
<th>Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High STD</td>
<td>C8-109</td>
<td></td>
<td>85</td>
<td>5040±180</td>
<td>0.611 Sample Path</td>
</tr>
<tr>
<td>S13 Frnt #3</td>
<td>34</td>
<td>34</td>
<td>375±61</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>35</td>
<td>422±58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3 Frnt #4</td>
<td>31</td>
<td>31</td>
<td>94±34</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>31</td>
<td>297±54</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>31</td>
<td>334±57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1 Frnt #1</td>
<td>33</td>
<td>33</td>
<td>2700±150</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>31</td>
<td>1370±140</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>33</td>
<td>33</td>
<td>1840±120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S09 Frnt #1</td>
<td>31</td>
<td>31</td>
<td>752±84</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>31</td>
<td>842±81</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>31</td>
<td>956±91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1 Frnt #2</td>
<td>34</td>
<td>34</td>
<td>2840±160</td>
<td>Lab Sample</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>34</td>
<td>1640±110</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>34</td>
<td>1520±110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dep</td>
<td>34</td>
<td>34</td>
<td>1440±110</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Page 1 of 5
### KDHE/Bureau of Environmental Remediation
#### Site Assessment Program
Nitron 733 X-Ray Fluorescence (XRF) Soil Analysis Field Data Sheets

**Date:** 03.07.01  
**Site Name:** Cherryvale Residential Yards Site  
**Operator Name:** RB

**System Check, Warm-Up and Internal Calibration Notes:**

- Blank samples
- Samples dried before analysis
- Direcl in lab conditions

**Method 6200 Utilized?** Y  
**In-situ readings?** N

- If N, briefly explain sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.: Direct field 60°C

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source:</th>
<th>Run Time (sec.):</th>
<th>Lead (mg/kg):</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>621 Front #3</td>
<td>31</td>
<td>Lab</td>
<td>32</td>
<td>0.61 ± 34</td>
<td>Lab Sample</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td></td>
<td>37</td>
<td>2.8 ± 37</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td></td>
<td>37</td>
<td>187 ± 38</td>
<td></td>
</tr>
<tr>
<td>610 Front #2</td>
<td>34</td>
<td></td>
<td>34</td>
<td>773 ± 72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td></td>
<td>34</td>
<td>817 ± 78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td></td>
<td>34</td>
<td>1030 ± 91</td>
<td></td>
</tr>
<tr>
<td>617 Front #6</td>
<td>34</td>
<td></td>
<td>34</td>
<td>1650 ± 110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>1290 ± 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>1450 ± 120</td>
<td></td>
</tr>
<tr>
<td>618 Front #3</td>
<td>31</td>
<td></td>
<td>31</td>
<td>123 ± 35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>127 ± 38</td>
<td></td>
</tr>
<tr>
<td>621 Front #1</td>
<td>31</td>
<td></td>
<td>31</td>
<td>646 ± 74</td>
<td>Lab Sample</td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>587 ± 73</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td></td>
<td>34</td>
<td>678 ± 62</td>
<td></td>
</tr>
<tr>
<td>618 Front #2</td>
<td>31</td>
<td></td>
<td>31</td>
<td>2.340 ± 130</td>
<td>Lab Sample</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td></td>
<td>34</td>
<td>2.440 ± 150</td>
<td></td>
</tr>
</tbody>
</table>
**Date:** 3/7/2011  
**Site Name:** Cherryvale Residential Yards Site  
**Operator Name:** Brown

**System Check, Warm-Up and Internal Calibration Notes:**
Samples dried 3x bag analyses lab 60 minutes convection oven.

**Method 6200 Utilized?** Y N  
**In-situ readings?** Y N

**If N, briefly explain sample preparation, homogenization, sample drying time/temo, analysis notes, etc.:**

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #</th>
<th>Source</th>
<th>Run Time (sec.)</th>
<th>Lead (mg/kg)</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>504 Front #3</td>
<td>31</td>
<td>Col-tn</td>
<td>31</td>
<td>23±4</td>
<td>Lab Sample</td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>23±4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>23±4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>23±4</td>
<td></td>
</tr>
<tr>
<td>513 Front #4</td>
<td>31</td>
<td></td>
<td>31</td>
<td>365±55</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>365±55</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>365±55</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>365±55</td>
<td></td>
</tr>
<tr>
<td>509 Front #5</td>
<td>31</td>
<td></td>
<td>31</td>
<td>460±61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>460±61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>460±61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td></td>
<td>31</td>
<td>460±61</td>
<td></td>
</tr>
<tr>
<td>617 Front #5</td>
<td>34</td>
<td></td>
<td>34</td>
<td>1320±110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td></td>
<td>34</td>
<td>1320±110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td></td>
<td>34</td>
<td>1320±110</td>
<td></td>
</tr>
</tbody>
</table>
Date: 03/17/91  Site Name: Cherryvale Residential Yards Site  Operator Name: RBrown

System Check, Warm-Up and Internal Calibration Notes:

Method 6200 Utilized? Y N  In-situ readings? Y N  Dug
If N, briefly explain sample preparation, homogenization, sample drying time/temperature, analysis notes, etc.:

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #:</th>
<th>Source</th>
<th>Run Time (sec.)</th>
<th>Lead (mg/kg)</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High STD #1</td>
<td></td>
<td></td>
<td>25</td>
<td>5010±120</td>
<td>0-6' 11</td>
</tr>
<tr>
<td>G17 Front #3</td>
<td></td>
<td></td>
<td>34</td>
<td>940±86</td>
<td></td>
</tr>
<tr>
<td>G17 Front #3</td>
<td></td>
<td></td>
<td>34</td>
<td>1050±93</td>
<td></td>
</tr>
<tr>
<td>G17 Front #3</td>
<td></td>
<td></td>
<td>34</td>
<td>1100±93</td>
<td></td>
</tr>
<tr>
<td>Front #2</td>
<td></td>
<td></td>
<td>34</td>
<td>1040±91</td>
<td></td>
</tr>
<tr>
<td>Front #2</td>
<td></td>
<td></td>
<td>33</td>
<td>1400±100</td>
<td></td>
</tr>
<tr>
<td>Front #2</td>
<td></td>
<td></td>
<td>34</td>
<td>1180±110</td>
<td></td>
</tr>
<tr>
<td>Front #2</td>
<td></td>
<td></td>
<td>31</td>
<td>57±30</td>
<td></td>
</tr>
<tr>
<td>Front #2</td>
<td></td>
<td></td>
<td>31</td>
<td>98±2±33</td>
<td></td>
</tr>
<tr>
<td>Front #2</td>
<td></td>
<td></td>
<td>32</td>
<td>114±44</td>
<td></td>
</tr>
<tr>
<td>SB Front #3</td>
<td></td>
<td></td>
<td>31</td>
<td>880±87</td>
<td>Lab Sample</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>37</td>
<td>859±71</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td>759±82</td>
<td></td>
</tr>
<tr>
<td>G17 Front #4</td>
<td></td>
<td></td>
<td>31</td>
<td>212±44</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td>64±6±84</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td>653±72</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td>735±74</td>
<td>44% Sher +</td>
</tr>
<tr>
<td>Dup</td>
<td></td>
<td></td>
<td>31</td>
<td>680±75</td>
<td></td>
</tr>
</tbody>
</table>
Date: 03/27/01  Site Name: Cherryvale Residential Yards Site  Operator Name: K Brown

System Check, Warm-Up and Internal Calibration Notes:

Method 6200 Utilized? Y N  In-situ readings? Y N  bagged sample

If N, briefly explain sample preparation, homogenization, sample drying time/tempe, analysis notes, etc.:

<table>
<thead>
<tr>
<th>Sample I.D. #</th>
<th>XRF Entry #</th>
<th>Source</th>
<th>Run Time (sec.)</th>
<th>Lead (mg/kg)</th>
<th>Comments, Other Constituents, Concentrations, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>616 Front #1</td>
<td>Ld-404</td>
<td>33</td>
<td>1080±110</td>
<td></td>
<td>Lab Sample</td>
</tr>
<tr>
<td>High 570</td>
<td></td>
<td></td>
<td>270±120</td>
<td></td>
<td>Off 11:36</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>85</td>
<td>5140±140</td>
<td></td>
</tr>
</tbody>
</table>
ATTACHMENT E

PRELIMINARY REMOVAL SITE EVALUATION/REMOVAL PRELIMINARY ASSESSMENT (PRE) FORM
**I. SITE NAME AND LOCATION:**

**NAME:** Cherryvale Residential Yards Site  
**ADDRESS OR OTHER LOCATION IDENTIFIER:** Martin and Front Streets between Coyle and Catherine Streets  
**CITY:** Cherryvale  
**COUNTY:** Montgomery  
**STATE:** Kansas  
**ZIP:** 67335  
**TELEPHONE:**  
**FAX:**  
**DIRECTIONS TO SITE:**  
The site is located in the residential area bounded by the streets indicated above. The site is located in the SE 1/4 of Section 8, Township 32 South, Range 17 East.  
**MAP ATTACHED?** Yes (in RSE Report)  

**II. SITE REFERRAL INFORMATION:**

**REQUESTED BY:** Rick Bean  
**DATE OF REQUEST:** 12/00  
**AGENCY/OFFICE:** KDHE/Bureau of Environmental Remediation/Remedial Section  
**MAILING ADDRESS:** Building 740, Forbes Field  
**CITY:** Topeka  
**STATE:** Kansas  
**ZIP:** 66620  
**TELEPHONE:** (785) 296-1675  
**FAX:** (785) 296-7030  
**SITE CONTACT:** Randy Brown, KDHE/BER Site Assessment Unit  
**AGENCY/OFFICE:** KDHE/BER Remedial Section/Site Assessment Unit  
**MAILING ADDRESS:** Building 740, Forbes Field  
**CITY:** Topeka  
**STATE:** Kansas  
**ZIP:** 66620  
**TELEPHONE:** (785) 296-8065  
**FAX:** (785) 296-7030
DEFINITION OF TERMS

CERCLA is the Comprehensive Environmental Response Compensation and Liabilities Act, 42 USC §9601 et seq. (as amended).

A FACILITY is defined as any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly-owned treatment works (POTW), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft or any site or area, where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.

A HAZARDOUS SUBSTANCE means any substance, element, compound, mixture, solution, hazardous waste, toxic pollutant, hazardous air pollutant, or imminently hazardous chemical substance or mixture designated pursuant to the Clean Water Act (CWA), CERCLA, Safe Drinking Water Act (SDWA), Clean Air Act (CAA) or Toxic Substances Control Act (TSCA). The term does not include petroleum products, natural gas, natural gas liquids, liquefied natural gas, synthetic gas or mixtures of natural and synthetic gas.

The LIMITATIONS ON RESPONSE provisions of the NCP [40 CFR 300.400(b)] states that removals shall not be undertaken in response to a release: of a naturally occurring substance in its unaltered or natural form; from products that are a part of the structure of, and result in exposure within, residential buildings or business or community structures; or into public or private drinking water supplies due to deterioration of the system through ordinary use.

NCP is the National Oil and Hazardous Substances Pollution Contingency Plan 40 CFR §300-302.

OPA is the Oil Pollution Act as amended to § 311 of the Clean Water Act, with response provisions described in § 300.300-300.335 of the NCP.

POLLUTANT or CONTAMINANT includes, but is not limited to, any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions or physical deformations, in such organisms or their offspring. The term does not include petroleum products, natural gas, natural gas liquids, liquefied natural gas, synthetic gas or mixtures of natural and synthetic gas.[40 CFR 300.5]

PRP is potentially responsible party responsible for a release or threat of release of hazardous substances, pollutants or contaminants.


A RELEASE is defined as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment of barrels, containers, and other closed receptacles containing any hazardous substances or pollutant or contaminant), but excludes: workplace exposures; engine exhaust emissions; nuclear releases otherwise regulated; and the normal application of fertilizer. For purposes of the NCP, release also means threat of release. [40 CFR 300.5]

A VESSEL is defined as any description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water other than a public vessel. [40 CFR 300.5]
### III. REMOVAL SITE EVALUATION CRITERIA (40 CFR 300.410(E))

| A. IS THERE A RELEASE OR THREAT OF RELEASE AS DEFINED BY THE NCP? | YES X or NO _ | UNKNOWN _____ |
| EXPLAIN: Lead levels elevated above both residential and non-residential Risk-Based Standards for Kansas (RSK) were identified in several residential soil samples obtained during the PRE/RSE. Cadmium and arsenic were also detected above residential RSKs coinciding with lead levels above 1,000 mg/kg during the PRE/RSE. |

| B. IS THE SOURCE A FACILITY OR VESSEL AS DEFINED BY THE NCP? | YES X or NO _ | UNKNOWN _____ |
| EXPLAIN: The site is residential area impacted by an adjacent abandoned primary zinc smelter. |

| C. DOES THE RELEASE OR THREAT OF RELEASE INVOLVE A HAZARDOUS SUBSTANCE, OR POLLUTANT CONTAMINANT AS DEFINED BY THE NCP? | YES X or NO _ | UNKNOWN _____ |
| EXPLAIN: Lead, cadmium, and arsenic are hazardous substances as defined in § 302.4 of the NCP. |

| D. IS THE RELEASE SUBJECT TO THE LIMITATIONS ON RESPONSE? | YES _ or NO X | UNKNOWN _____ |
| EXPLAIN: No limitations on response exist at the Cherryvale Residential Yards site. |

| E. DOES THE QUANTITY OR CONCENTRATION WARRANT RESPONSE: | YES X or NO _ | UNKNOWN _____ |
| EXPLAIN: Removal response is warranted because levels of lead, cadmium and arsenic were detected in excess of residential RSK levels for lead (400 mg/kg), cadmium (39 mg/kg) and arsenic (11 mg/kg) at the site. Elevated cadmium and arsenic levels above three times (3X) background appear to coincide with lead levels above 1,000 mg/kg from review of laboratory data. Lead was detected at a maximum of 3,680 mg/kg by laboratory analysis in the 618 Front Street #2 sample. Cadmium was detected at a maximum of 160 mg/kg in the 619 Martin #5 sample location. The maximum arsenic detection was 33.7 mg/kg in 618 Front #2. Further removal site evaluation is recommended to the south at least to First Street to further evaluate residential yards since the southern extent of impacted yards was not identified during this RSE. Future removal response should be coordinated with potential National Priorities List (NPL) inclusion and consistent with the overall long-term remedial response objectives for this site. |

| F. HAS A PRP BEEN IDENTIFIED? | YES _ or NO X | CURRENT OWNER: Multiple 
CURRENT OPERATOR: Inactive 
FORMER OPERATORS: Edgar Zinc Company, National Zinc Company |

| The site area is located in mixed residential and light commercial area at the north edge of Cherryvale, Montgomery County, Kansas. |

| H. REGULATORY/OPERATIONAL HISTORY OF THE SITE: | According to Sanborn Fire Insurance maps for the Cherryvale Residential Yards area, the residential area appears to have been the location for support facilities such as a store, church, school, fire station, etc. connected with the National Zinc site. Most of the original National Zinc structures appear to have been demolished and removed by the 1950s from the residential area evaluated for the PRE/RSE. |
IV. CONDITIONS TO WARRANT REMOVAL 940 CFR 300.415(b)(2)):

A. IS THERE AN ACTUAL OR POTENTIAL EXPOSURE TO HAZARDOUS SUBSTANCES, OR POLLUTANTS, OR CONTAMINANTS? YES X NO _

DEFINE THE MEDIA, PATHWAY AND RECEPTOR:

GROUND WATER YES _ NO _ UNKNOWN _ RECEPTOR: local private wells

EXPLAIN: The site is located in a broad, low-relief upland of the Osage Questas physiographic area of southeast Kansas. Bedrock of Pennsylvanian age is present at the base of the soil profile. During the installation of temporary monitoring wells at the site, bedrock was typically encountered between 14 feet (TW-1) and 3.5 feet (TW-8). The bedrock units underlying the site are believed to be composed of sandstone and limestone of the Cherryvale Shale and Dennis Limestone Formations of the Kansas City Group. A yellowish to reddish-brown sandstone was typically encountered as the bedrock layer upon auger refusal during the National Zinc BTA. Ground water occurrence within the Cherryvale Shale and Dennis Formations is typically localized with very low (less than 3 gallons per minute) yields of generally poor quality. These bedrock units typically yield little to no water except in the shallow weathered zone near the upper bedrock surface. Oil field intrusion of brines in the site area from oil production dating back to the early 1900s has impacted shallow ground water quality regionally in this portion of Southeast Kansas (Reference 4). Ground water occurrence in the site area is primarily restricted to unconsolidated alluvial deposits of the Verdigris River and Drum Creek. The City of Cherryvale receives water from a surface intake on Big Hill Lake located approximately five (5) miles east of Cherryvale. Significant karst terrain does not exist in the site area given the sequential shale-sandstone-limestone stratigraphy of the bedrock units. The City of Cherryvale and Montgomery County Rural Water District # 12 supplies water to private residences surrounding the site.

SURFACE WATER YES _ NO _ UNKNOWN _ RECEPTOR: environmental targets, potential drinking water intakes

EXPLAIN: The site drainage is to an unnamed tributary of Drum Creek which also drains the National Zinc site. The confluence of this unnamed tributary and Drum Creek is approximately 3/4 mile west of the National Zinc site. Previous surface water releases of sludges have been historically reported from the National Zinc site. Surface water sampling for the National Zinc ESI will further evaluate the surface water pathway. Sediment samples obtained for the BTA have indicated a 3X background concentration of lead, cadmium and zinc in the surface water ditch draining the National Zinc site.

SOIL YES _ NO _ UNKNOWN _ RECEPTOR: nearby residents

EXPLAIN: Lead, cadmium and arsenic were identified above residential RSKs at the site. At least eleven (11) residential yards were identified as impacted during the PRE/RSE. The primary native soil type identified within undisturbed areas within the site boundaries is the Kenoma series. The Kenoma soils are generally deep, moderately well drained, very slowly permeable soils on uplands. Typical depth of Kenoma soils averages 60 inches or greater. The southern edge of the site is also within the Dennis series, but the native soil profile for this series is very similar to the Kenoma series. The site in this series.

WASTE YES X NO _ UNKNOWN _ RECEPTOR: nearby residents

EXPLAIN: Surficial smelter waste is present at the National Zinc site immediately north of the residential area evaluated for the PRE/RSE. The National Zinc BTA and ESI contain additional information regarding wastes at the National Zinc site.

AIR YES _ NO _ UNKNOWN _ RECEPTOR: nearby residents

EXPLAIN: No conditions were observed to indicate a potential release to air at the site. Care should be exercised during removal response to minimize potential dust emissions containing elevated concentrations of lead and cadmium to adjacent residential areas.
B. IS THERE ACTUAL OR POTENTIAL CONTAMINATION OF DRINKING WATER SUPPLIES? YES _ NO __

**EXPLAIN:** The residences in the site area are served with drinking water from the Cherryvale PWS system which utilized a surface water source. No private wells were identified in use within one mile of the site.

C. ARE THERE HAZARDOUS SUBSTANCES, POLLUTANTS, OR CONTAMINANTS IN DRUMS, BARRELS, BULK STORAGE CONTAINERS OR TANKS? YES __ or NO X

**EXPLAIN:** No bulk storage or disposal of containerized hazardous substances or potential hazardous wastes was identified at the site during the PRE.

D. ARE THERE HIGH LEVELS OF HAZARDOUS SUBSTANCES, POLLUTANTS, OR CONTAMINANTS IN NEAR-SURFACE SOILS?

| SURFACE SOIL CONTAMINATION? | YES X | NO __ | UNKNOWN __ |
| SURFICIAL WASTES PRESENT?   | YES X | NO __ | UNKNOWN __ |

**EXPLAIN:** Lead, cadmium and arsenic were identified in excess of residential RSKs at the site.

E. ARE THERE CONDITIONS ON SITE WHICH MAY BE SUSCEPTIBLE TO IMPACT FROM ADVERSE WEATHER CONDITIONS? YES __ or NO —

**EXPLAIN:** Runoff from exposed smelter waste piles, transport by air or truck traffic from the former National Zinc site has apparently caused releases of heavy metal constituents to adjacent residential soils.

F. IS THERE A THREAT OF FIRE OR EXPLOSION? YES _ or NO X

**EXPLAIN:** No potentially flammable, ignitable, corrosive or unstable wastes were observed to be stored or managed in a manner to increase risk of fire. The site does not appear to pose a serious fire threat.

G. IS THERE A POTENTIAL FOR OTHER FEDERAL OR STATE RESPONSE MECHANISMS? YES _ or NO X

**RESPONSE MECHANISMS:**
- RCRA
- NRC
- FIFRA/TSCA
- UST
- OTHER FEDERAL
- STATE DEFERRAL

**EXPLAIN:** Identification/confirmation of PRPs has not been successful to date. The site appears to qualify for removal response consistent with the NCP and may also be a candidate for inclusion to the National Priorities List (NPL) and future remedial response actions.

H. ARE THERE ENDANGERED SPECIES HABITATS, WETLANDS, OR OTHER SENSITIVE ENVIRONMENTS NEARBY WHICH MAY BE ADVERSELY IMPACTED BY THE SITE?

**EXPLAIN:** Residential areas are located within the site boundaries.

I. ARE THERE OTHER SITUATIONS OR FACTORS WHICH POSE A THREAT? YES X _ or NO __

**EXPLAIN:** Elevated levels of lead, cadmium and arsenic were identified in this PRE adjacent to residential areas with little or no access control. This site may qualify for inclusion on the National Priorities List (NPL) and further removal response actions should be consistent and coordinated with future NPL remedial response actions and objectives.
V. POTENTIAL REMOVAL ACTIONS (40 CFR 300.415 [D]):
The following identifies potential removal actions which may be determined to be appropriate pending further review and study. The proposed actions should be considered preliminary proposals and are subject to change.

<table>
<thead>
<tr>
<th>Action</th>
<th>YES</th>
<th>NO</th>
<th>UNKNOWN</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITE SECURITY:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLAIN: Elevated lead levels are present in residential areas.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRAINAGE CONTROL:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLAIN: Runoff from former smelter production/waste areas at the site may be impacting adjacent surface water and sediments in the residential areas during flood periods.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STABILIZATION OR REMOVAL OF SURFACE IMPOUNDMENTS:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLAIN: No surface impoundments are present at the site.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPPING OF CONTAMINATED SOIL:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLAIN: Capping of contaminated soils may be an option for areas in excess of RSK soil screening levels to eliminate surficial exposure or further direct contact, air releases or surface water runoff.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USE OF CHEMICALS TO CONTROL/RETARD SPREAD OF CONTAMINATION:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLAIN: Retardants or stabilizing agents for heavy metals have been effective at other sites in stabilizing lead and cadmium to minimize leaching or bioavailability.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTAMINATED SOIL EXCAVATION:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLAIN: Soils in areas in excess of RSK screening concentrations may be best addressed by strategic excavation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REMOVAL OF DRUMS, TANKS, OR BULK STORAGE CONTAINERS:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLAIN: No abandoned drums containing waste material were identified at the site. Preliminary soil analysis obtained during the PRE/RSE indicates that lead levels would not likely exceed TCLP criteria and are therefore would not likely be RCRA hazardous (D008) waste.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTAINMENT, TREATMENT, OR DISPOSAL OF HAZARDOUS SUBSTANCES, POLLUTANTS, OR CONTAMINANTS:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLAIN: Some limited areas of soils may require stabilization. Further sampling at the site may indicate additional areas of waste and impacted soils requiring treatment and/or disposal.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROVIDE ALTERNATIVE WATER SUPPLIES:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXPLAIN: All areas at the site are supplied with water by the Caney public water supply (PWS) system.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VI. REMOVAL SITE EVALUATION DETERMINATION AND REMOVAL PRELIMINARY ASSESSMENT FINDINGS AND RECOMMENDATIONS:

REMOVAL ACTION/ASSESSMENT/FURTHER REMOVAL SITE EVALUATION CONSISTENT WITH §§ 300.410-300.415 OF THE NCP RECOMMENDED: YES X  NO _ (RSE contingent on PRP negotiations)

PRIORITY? __EMERGENCY RESPONSE  _X TIME CRITICAL  _X NON-TIME CRITICAL

FURTHER INTEGRATED CERCLA REMEDIAL SITE EVALUATION/RESPONSE CONSISTENT WITH THE NCP RECOMMENDED?: YES X  NO _ (Completion of ESI currently underway)

(Cite one or more of the criteria from SECTION III - REMOVAL SITE EVALUATION CRITERIA, as the basis for the above determination.)

| X | RELEASE OR THREAT OF RELEASE | X | RELEASE INVOLVES FACILITY OR VESSEL |
| X | HAZARDOUS SUBSTANCE OR POLLUTANT OR CONTAMINANT INVOLVED IN RELEASE | X | NO RESPONSE LIMITATIONS |
| X | SUFFICIENT QUANTITY OR CONCENTRATION | X | NO WILLING/CAPABLE PRP RESPONSE |
| X | ACTUAL OR POTENTIAL EXPOSURE THREATS | DRUMS, BARRELS OR BULK CONTAINERS PRESENT |
| X | HIGH LEVELS OF CONTAMINANTS IN SURFACE SOILS | X | SITE SUSCEPTIBLE TO ADVERSE WEATHER CONDITIONS |
|  | THREAT OF FIRE OR EXPLOSION | NO OTHER PROGRAM FOR RESPONSE |

(Identify one or more of the removal actions listed in Section V. POTENTIAL REMOVAL ACTIONS, as examples of the types of response actions which are recommended.)

| X | SITE SECURITY - ACCESSIBILITY | X | DRAINAGE CONTROL |
| X | IMPOUNDMENT STABILIZATION | X | SOIL CAPPING |
| X | CHEMICAL CONTROLS | X | SOIL EXCAVATION |
| X | REMOVAL OF DRUMS, BARRELS, ETC. | X | CONTAIN/THREAT/DISPOSE OF WASTES |
|  | ALT. DRINKING WATER SUPPLIES | X | SURROUNDINGS/OTHER (EXPLAIN): |

COMMENTS: Conditions at the site warrant further removal site evaluation and removal response consistent with § 300.415 of the NCP. Elevated levels of lead, cadmium and arsenic in or near residential areas has been identified in the PRE/RSE. The full extent of impacted yards was not identified during the PRE/RSE, and a Phase II RSE is recommended to extend the area of sampling south to First Street between Coyle and Catherine Streets.

Additional remedial site evaluation is currently underway through completion of the ESI at the National Zinc site. Completion of the ESI may indicate that a Hazard Ranking System (HRS) scoring package for inclusion to the National Priorities List (NPL) is appropriate. The Phase II RSE should proceed parallel to ESI/HRS activities to address potential risk and provide further removal site evaluation consistent with § 300.410-300.415 to additional residential yards beyond the extent of this PRE/RSE.
VII. FIELD METHODS AND PROCEDURES

Eleven (11) residential yards were evaluated for the Cherryvale Residential Yards PRE/RSE. Samples were obtained into 1-quart marked zip-lock freezer bags and a laboratory split obtained and placed in a 4-oz prepared heavy metals analysis jar. The RSE Report contains sampling procedures, analytical results, consideration of quality control (QC) criteria and other information in greater detail. The site-specific Quality Assurance Project Plan (QAPP) for the Cherryvale Residential Yards RSE was adhered to for all PRE/RSE site activities.

VIII. FINAL REMARKS AND RECOMMENDATIONS:

A release of hazardous substances to residential yards of lead, cadmium and arsenic above three times background (3X) and KDHE residential RSKs has been identified in the PRE/RSE.

The extent of residential yard contamination was not identified in the RSE. A Phase II RSE is recommended to further evaluate residential yards to the south to First Street between Coyle and Catherine Streets. The Cherryvale Residential Yards site appears to qualify for further removal response actions consistent with § 300.415 of the NCP.

The Expanded Site Inspection of the National Zinc site is underway, and data from this PRE/RSE will be used to supplement the ESI, especially with regards to the soil pathway. Upon completion of the ESI, the site may be a candidate for completion of a Hazard Ranking System package and listing on the National Priorities List (NPL).

Further removal response may also be appropriate at the site but should be consistent with overall remedial objectives for the site. If the site is listed on the NPL, residential areas impacted by elevated levels of heavy metals above residential RSKs should be prioritized for initial remedial/removal response actions if not previously conducted.

IX. EVALUATOR/REVIEW:

SIGNATURE: ________________________ DATE: March 27, 2001
Randolph L. Brown, Site Assessment Unit Chief

POSITION/TITLE: Environmental Geologist/Unit Chief, Site Assessment Unit

OFFICE/AGENCY: KDHE/Bureau of Environmental Remediation/Remedial Section

REVIEWED BY: ________________________ DATE: March 29, 2001
Rick L. Bean, Section Chief, Remedial Section/Bureau of Environmental Remediation
ATTACHMENT F

PORTIONS OF SANBORN FIRE INSURANCE MAPS FOR CHERRYVALE, KANSAS 1905-1928
ATTACHMENT G

RESIDENTIAL YARD SAMPLING FORMS
Cherryvale Residential Yards Site Sampling Form

<table>
<thead>
<tr>
<th>Resident Name:</th>
<th>Resident Address:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>610 Front</td>
</tr>
</tbody>
</table>

Sketch of Site (indicate XRF/lab sample locations, scale, direction arrow, etc.):
Cherryvale Residential Yards Site Sampling Form

Resident Name: ___________________________  Resident Address: ___________________________

Sketch of Site (indicate XRF/lab sample locations, scale, direction arrow, etc.):

Residential Yard XRF Sampling Form
### Cherryvale Residential Yards Site Sampling Form

<table>
<thead>
<tr>
<th>Resident Name:</th>
<th>Resident Address:</th>
</tr>
</thead>
</table>

Sketch of Site (indicate XRF/lab sample locations, scale, direction arrow, etc.):
Cherryvale Residential Yards Site Sampling Form

Resident Name:          Resident Address:  

Sketch of Site (indicate XRF/lab sample locations, scale, direction arrow, etc.):
<table>
<thead>
<tr>
<th>Cherryvale Residential Yards Site Sampling Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident Name:</td>
</tr>
<tr>
<td>Resident Address:</td>
</tr>
<tr>
<td>Sketch of Site (indicate XRF/lab sample locations, scale, direction arrow, etc.):</td>
</tr>
</tbody>
</table>

![Sketch diagram]

Residential Yard XRF Sampling Form
<table>
<thead>
<tr>
<th>Cherryvale Residential Yards Site Sampling Form</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resident Name:</strong></td>
</tr>
<tr>
<td>Page</td>
</tr>
<tr>
<td>Sketch of Site (indicate XRF/lab sample locations, scale, direction arrow, etc.):</td>
</tr>
</tbody>
</table>

Residential Yard XRF Sampling Form
Cherryvale Residential Yards Site Sampling Form

Resident Name: [Redacted]

Resident Address: 511 Mountain

Sketch of Site (indicate XRF/lab sample locations, scale, direction arrow, etc.):

[Hand-drawn diagram of a residential yard with various measurements and annotations.]

Residential Yard XRF Sampling Form
Cherryvale Residential Yards Site Sampling Form

Resident Name: 

Resident Address: 

Sketch of Site (indicate XRF/lab sample locations, scale, direction arrow, etc.):
Cherryvale Residential Yards Site Sampling Form

Resident Name: [Redacted]
Resident Address: Front

Sketch of Site (indicate XRF/lab sample locations, scale, direction arrow, etc.):

Residential Yard XRF Sampling Form
ATTACHMENT H

PRE-CERCLIS CHECKLIST AND INITIATION FORMS
PRE-CERCLIS SCREENING ASSESSMENT CHECKLIST/DECISION FORM

This checklist can assist the site investigator during the Pre-CERCLIS screening. It will be used to determine whether further steps in the site investigation process are required under CERCLA. Use additional sheets, if necessary.

<table>
<thead>
<tr>
<th>Checklist Preparer:</th>
<th>Randolph L. Brown Site Assessment Unit Chief</th>
<th>03/27/01</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Name/Title)</td>
<td></td>
<td>(Date)</td>
</tr>
<tr>
<td>Building 740, Forbes Field</td>
<td></td>
<td>(785) 296-8065</td>
</tr>
<tr>
<td>(Address)</td>
<td></td>
<td>(Phone)</td>
</tr>
<tr>
<td><a href="mailto:Rbrown@kdhe.state.ks.us">Rbrown@kdhe.state.ks.us</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(E-Mail Address)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Site Name: 901 East Santa Fe Site
Previous Names (if any): Coastal Mart # 1177 UST Trust Fund Site
Site Location: 901 East Santa Fe Drive
Street
Olathe, Kansas 66061
City

Legal Location: Section 36, T. 13 S., R. 23 E

Complete the following checklist. YES  NO

| 1. Does the site already appear in CERCLIS? | □  X |
| 2. Is the release from products that are part of the structure of, and result in exposure within, residential buildings or businesses or community structures? | □  X |
| 3. Does the site consist of a release of naturally occurring substances in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is found naturally? | □  X |
| 4. Is the release into a public or private drinking water supply due to deterioration of the system through ordinary use? | □  X |
| 5. Is some other program actively involved with the site (i.e. another Federal, State, or Tribal program)? | X  □ |
| 6. Are the hazardous substances potentially released at the site regulated under a statutory exclusion (i.e., petroleum, natural gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occurring, or regulated by the NRC, UMTRCA, or OSHA)? | □  X |
| 7. Are the hazardous substance potentially released at the site excluded by policy considerations (e.g., deferral to RCRA Corrective Action)? | □  X |
| 8. Does sufficient documentation exist that clearly demonstrates that there is no potential for release that could cause adverse environmental or human health impacts (e.g., comprehensive remedial investigation equivalent data showing no release above ARARs, completed removal action, previous HRS score determined, ASTM Phase I, II, etc. completed, EPA approved risk assessment completed)? | □  X |

Please explain all "yes" answer(s), attach additional sheet if necessary: An Expanded Site Inspection (ESI) is currently underway at the adjacent National Zinc site. Pending ESI results/HRS listing, further removal response options should be coordinated and consistent with ESI/HRS/NPL actions.

Regional EPA Reviewer: ___________________________  03/29/01
Print Name/Signature  Date

State Agency/Tribe: Randolph L. Brown
Print Name/Signature  Date
**PRE-CERCLIS INITIATION FORM**

**NO EPA ID:**
**NO DISCOVERY DATE:**

**NPL Status = 0- NOT A VALID SITE OR INCIDENT**

**Site Name:** Cherryvale Residential Yards Site
**Initiated Date:** 03/29/01
**Initiated By:**
- Removal
- Site Assessment

**List Site Alias Name(s):** National Zinc Residential Yards Site

**Address:** Martin and School Street (center of site)
**County Name:** Montgomery

**Cis., State, Zip: Olathe, Kansas 67335**

**State ID (if one exists):** C306371097
**Congressional District:** 04

**Section:**
- C-(SACR) Site Assessment/Cost Recovery Branch
- E-(FFSE) Federal Facilities/Ar special Emphasis Branch
- I-(IANE) IA/NE Remedial Branch

**Directions to Site:** South on Manhattan Avenue from Fort Riley Boulevard

**Site Size:** __20
**Site Dimension:**
- X Acres
- X Square Foot
- X Feet
- X Square Miles
- X Miles

**USGS Quadrant:** Cherryvale
**USGS Hydro Unit:**

**Latitude:** 39.42 39.00
**Longitude:** 96.25 96.00

**Lat/Long Accuracy:**
- X Seconds
- Minutes
- X Kilometers
- X Meters

**Site Size:** __20
**Site Dimension:**
- X Acres
- X Square Foot
- X Feet
- X Square Miles
- X Miles

**USGS Quadrant:** Cherryvale
**USGS Hydro Unit:**

**Lat/Long Accuracy:**
- X Seconds
- X Minutes
- X Kilometers
- X Meters

**Site Type:**
- X Disposal
- X Storage
- X Midnight Dump
- X Transportation Related
- X Other
- X Treatment
- X Production Facility (active)
- X Production Facility (inactive)

**Site Type (Choose one):**
- X Bank/Loan Company
- X EPA Region 7
- X EPIC

**Regulated Entity:**
- X EPA HQ
- X Other
- X Other Fed Agency

**Contractor:**
- X EPA HQ
- X Contractor

**Owner/Operator:**
- X Bank/Loan Company
- X County Owned
- X District Owned
- X Federally Owned
- X Former Federally Owned or Operated
- X Government Owned/Contractor Operated
- X Privately Owned/Government Operated
- X Property Defeulted Back to Government
- X Municipality
- X Other
- X Private
- X State Owned
- X Trustee, Federal
- X Mixed Ownership
- X Trustee, State

**Incident Type:**
- X Non-Oil Spill
- X Oil Spill
- X Unknown

**Operational Status:**
- X Active
- X Inactive
- X Unknown

**Incident Category:**
- X Abandoned
- X Chemical Plant
- X Dioxin
- X Ecological Damage
- X Federal Facility
- X Housing Area/Farm
- X Industrial Waste Treatment
- X Waterways/Creeks/Rivers

**Non-Oil Spill:**
- X Chemical Spill
- X Oil Spill

**Other Cleanup Activity:**
- X Tribal-lead Cleanup (OT)
- X State-Lead Cleanup (OS)
- X Private Party-Lead Cleanup (OP)
- X Fed Fac-lead Cleanup (OF)

**Other (choose one):**
- X Site or O Action: Separate CERCLIS entry not recommended pending ESI/HRS status; may need removal start if actions not completed as part of CERCLIS site actions

**Add Action:**
- X PRE-CERCLIS SURVEYS

**Planned Complete:** 03/31/01
**Actual Complete:** 03/29/01

**Lead code (choose one):**
- X EPA Fund Financed
- FF - Federal Facility
- X State, Fund Financed

**Comment:** X Site or O Action: Separate CERCLIS entry not recommended pending ESI/HRS status; may need removal start if actions not completed as part of CERCLIS site actions

**Prepared by:** TriCor Industries
**Date:** 03/29/01

**State:**
- Date: __03/29/01__ RPM/OSC/SAM: ______ Date __/__/