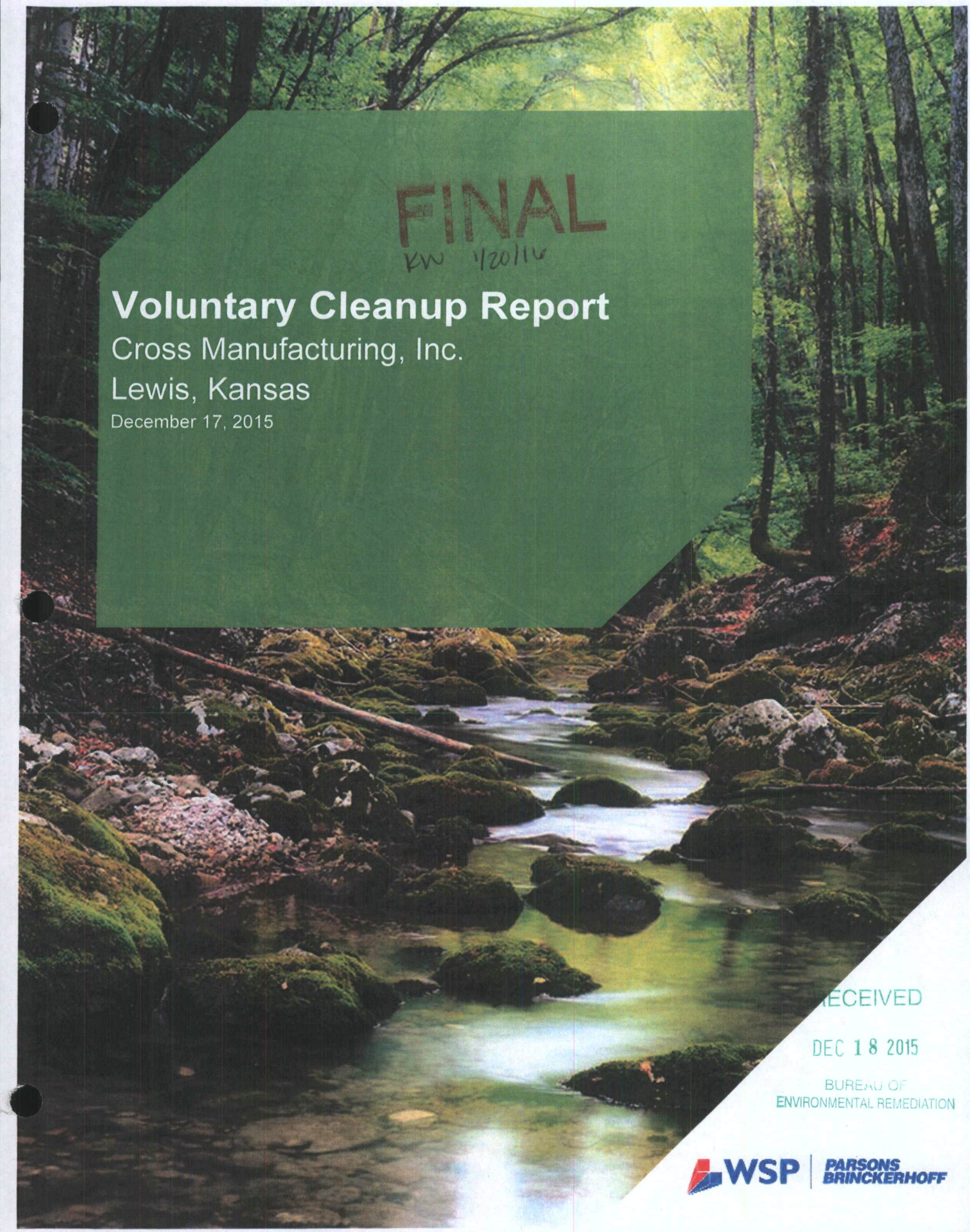

FINAL
KW 1/20/16

Voluntary Cleanup Report

Cross Manufacturing, Inc.

Lewis, Kansas

December 17, 2015

WSP | PARSONS BRINCKERHOFF

Voluntary Cleanup Report

Cross Manufacturing, Inc. – Lewis, Kansas

December 17, 2015

Client

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1 Introduction

WSP USA, Corp. (WSP) has prepared this Voluntary Cleanup Report (VCR) for the Cross Manufacturing Inc. (Cross) facility in Lewis, Kansas (the "Site"). This VCR was requested by the Kansas Department of Health and Environment (KDHE) in a letter dated November 6, 2015 (KDHE 2015c), along with their approval of WSP's *Voluntary Cleanup Monitoring Report* dated October 28, 2015 (WSP 2015c). This VCR summarizes the completion of the *Voluntary Cleanup Plan* (WSP 2014) submitted by WSP to the KDHE on April 11, 2014 and approved on June 10, 2014 (KDHE 2014). All work at the Site was conducted under the Voluntary Cleanup and Property Redevelopment Program (VCPRP) and in accordance with the Voluntary Agreement (12VCP0006) between Cross and the KDHE. This VCR was prepared in general accordance with the VCPRP Manual dated June 30, 2011 (KDHE 2011).

1.1 Property Information

The Site is located at 100 James H Cross Blvd, in Lewis, Kansas[1]. Lewis is located in Edwards County, in west-central Kansas (Figure 1 – Site Location Map). According to 2010 census data, the population of Lewis is less than 500 people[2]. The population density for Edwards County is 4.9 persons per square mile.

The City of Lewis has no zoning requirements. For reporting purposes, the Site is considered "business/industrial/manufacturing" by the city (Terracon 2012c). The Site is surrounded by residential properties to the south and west, by Burlington Northern and Santa Fe railroad to the north, and by agricultural lands to the east. The property is mostly flat. A low, tree-lined berm is present at the southeastern corner of the Site. The berm marks the northern edge of an intermittent creek/drainage feature that runs southwest-northeast.

Cross manufactures hydraulic components at the Site. Past operations at the plant included chrome-plating. Figure 2 includes a schematic of the plant and its operational areas. The property was used for agricultural land in the early 1900s, while industrial operations have been ongoing at the Site since 1954. Chrome plating reportedly began in 1963 (Terracon 2012c).

1.2 Voluntary Cleanup Timeline

In 1980, Cross decommissioned parts of the chrome plating area now referred to as the former chromium plating area (FCPA, Terracon 2012a). The FCPA consisted of a concrete chrome plating line (concrete pit), plating tanks and rectifiers, three storage tanks, and associated piping/equipment. The three tanks were located within their own concrete secondary containment pit. The tanks were emptied and left in place, and are now referred to collectively as the historic plating area (HPA). The tanks formerly held chrome plating solution, rinse, and secondary rinse fluids. The chrome plating solution tank had a capacity of approximately 1,900 gallons and the two rinse tanks were approximately 1,000 gallons each[3].

In late 2011, the plating line was decommissioned by removing the plating baths, tanks, rectifiers, equipment, and piping (Terracon, 2012a). This area is now referred to as the decommissioned plating line (DPL)[4]. A voluntary cleanup (VC) was completed at the site between 2012 and 2015. A timeline of important dates and submittals relative to the VC is shown below:

January 19, 2012: Terracon conducted a Limited Site Investigation (LSI) near the (DPL). Soil samples contained hexavalent chromium above the KDHE/Bureau of

[1] The Public Land Survey site location is the SE ¼, NE ¼ of the NW ¼, Section 25, Township 24 South, Range 25 West. James H Cross Blvd is also referred to as Factory Street.
[2] Census data and zoning information was found at http://www.edwardscounty.org/index.htm
[3] The HPA chrome plating tank was measured at 48-inch diameter by 20 feet. The rinse tanks each measured at 36-inch diameter by 20 feet.
[4] The DPL is 59.5-feet long by 6-feet wide by 5.75-feet deep.

	Environmental Remediation (BER) Tier 2 Risk-Based Standards for Kansas (RSK) for non-residential settings (KDHE 2010).
March 19, 2012:	KDHE accepted the Site into the VCPRP (KDHE 2012).
June 12, 2012:	Terracon submitted a Voluntary Cleanup Investigation (VCI) Work Plan to the KDHE detailing soil sampling locations, groundwater monitoring well installation, and groundwater sampling in the FCPA (Terracon 2012a).
September 12, 2012:	Terracon submitted a VCI Investigation report to the KDHE detailing the results of the VCI (Terracon 2012b). Soil samples containing hexavalent chromium above RSK values were detected in samples as deep as 30 feet below ground surface (bgs). Groundwater samples did not contain chromium above laboratory reporting limits.
November 9, 2012:	Terracon submitted a Supplemental VCI Work Plan to the KDHE detailing additional proposed sampling locations in the FCPA (Terracon 2012c).
January 18, 2013:	Terracon submitted a Supplemental VCI Report to the KDHE containing the results of the Supplemental VCI (Terracon 2013). Deep soil samples (between 40 and 48 feet bgs) did not contain chromium above RSK values.
April 8, 2013:	Cross retained Remediation Services, Inc. (RSI) and WSP to conduct the VC.
May 17, 2013:	Email from KDHE to WSP establishes cleanup objectives for the site (KDHE 2013a). Section 1.3 contains the Cleanup Objectives.
June 11, 2013:	WSP submitted a Supplemental VCI Work Plan to the KDHE (WSP 2013a). The work plan includes soil sampling locations selected to aid in treatment design.
July 5, 2013:	KDHE approves the Supplemental VCI Work Plan (with comments; KDHE 2013b).
October 9, 2013:	WSP submitted a Supplemental VCI Report to the KDHE detailing the results of the Supplemental VCI (WSP 2013b).
December 20, 2013:	WSP submitted a Voluntary Cleanup Proposal to the KDHE evaluating remedial alternatives (WSP 2013c). *In situ* chromium reduction and fixation was selected as the preferred remedial alternative.
April 11, 2014:	WSP submitted a Voluntary Cleanup Plan (VCP) detailing the proposed *in situ* treatment design and performance monitoring program (WSP 2014a).
June 10, 2014:	KDHE approved the VCP and associated performance monitoring schedule (KDHE 2014).
March 5, 2015:	WSP submitted a VCP Monitoring Report (WSP 2015a). The report summarized the results of the first performance monitoring sampling, and a recommendation for additional treatment.
March 13, 2015:	KDHE approved the March 5, 2015 report (KDHE 2015a), including provisions for additional treatment.
July 30, 2015:	WSP submitted the second VCP Monitoring Report (WSP 2015b).
August 6, 2015:	KDHE approved the July 30, 2015 report (KDHE 2015b).
October 28, 2015:	WSP submitted the third VCP Monitoring Report (WSP 2015c).

November 6, 2015: KDHE approved the October 28, 2015 report, and requested the completion of this Voluntary Cleanup Report (KDHE 2015c).

This VCR describes the completed *in situ* chromium reduction and fixation remedy, performance monitoring, and site restoration activities. The *in situ* chromium reduction and fixation remedy was intended to reduce the toxic, soluble, and mobile hexavalent chromium (Cr^{6+}) species to the much less toxic and much less mobile trivalent chromium (Cr^{3+}) species. The remedy was completed by delivering the reducing agent calcium polysulfide (CPS) by infiltration and direct injection.

1.3 Cleanup Objectives

The VC objective was to remediate chromium affected soils at the Site to non-residential RSK established by KDHE (Tier 2 RSK), and maintain groundwater in compliance with the RSK. The Non-Residential Tier 2 RSK for soils are shown below:

Tier 2 RSK

Chromium Oxidation State	Non-Residential (mg/kg)
Hexavalent	111
Trivalent	3,060,000

Note: mg/kg = milligrams per kilogram

The Tier 2 RSK were established by KDHE to be "chemical-specific and site-specific cleanup goals for soil, groundwater, and indoor air that are protective of human health and the environment" (KDHE 2010). These values were established for the Cross project in an email dated May 17, 2013 (KDHE 2013a). Note that the trivalent chromium non-residential RSK is greater than one million parts per million and compliance with this standard is considered achieved.

As described in the VCP, remediation will be considered complete and successful if:

- the performance monitoring soil sampling hexavalent chromium concentration results are below the cleanup objective, and
- total chromium concentrations in groundwater remain below the Tier 2 RSK (0.1 milligrams per liter [mg/l]) 6 months after the final CPS application.

The performance monitoring sample results, discussed below, verify that these objectives have been achieved.

2 Documentation/Completion of Cleanup

WSP implemented the VC between October 2014 and May 2015. The VC focused on the cleanup of an area of hexavalent chromium impacted soil identified during the VCI activities. The selected cleanup approach called for the reduction and fixation of hexavalent chromium through the introduction of a reducing agent, CPS, to the subsurface. The VCP specified construction of amendment infiltration galleries and the application of CPS through both direct injection and infiltration. After an incubation period, performance monitoring samples were collected to monitor treatment performance. Based on the initial soil sampling results, a second CPS injection was performed at specific locations and depth intervals. The final performance monitoring samples verified that the soil objectives have been satisfied, and that hexavalent chromium has not leached into groundwater above standards. All work was conducted in accordance with the VCP and the Voluntary Cleanup Plan Monitoring Report. Project as-built drawings and site analytical data are presented in the attached figures and tables.

2.1 Identification of Contaminated Soil

2.1.1 VCI and Supplemental VCI

Limited Site Investigation began at the Site in 1992. Cross contracted Terracon to initiate a voluntary agreement with KDHE and resume remedial investigations in January, 2012. A series of VCI activities have been conducted at the Site since then. The investigations[5] conducted by Terracon identified an area of chromium impacted soil beneath the DPL and portions of the HPA, extending to as deep as 38 feet bgs.

KDHE requested additional assessment of onsite groundwater, particularly to the east of the southern end of the DPL pit. WSP prepared a *Supplemental Voluntary Cleanup Investigation Work Plan*, which was approved by KDHE July 5, 2013 (KDHE 2013b). The work plan included the installation of one additional groundwater monitoring well and site-wide groundwater sampling for total and hexavalent chromium. WSP also proposed to install six soil borings beneath and to the west of the DPL pit, to improve data density and to aid in remedial planning.

WSP completed the scope of work defined in the *Supplemental Voluntary Cleanup Investigation Work Plan* in August 2013. The objectives of the Supplemental Voluntary Cleanup Investigation were achieved and reported in the *Supplemental Voluntary Cleanup Investigation Report* (WSP 2013b).

2.1.2 Contaminated Soil Volume

WSP created a three-dimensional visualization[6] and statistical interpretation of analytical data collected by WSP and other consultants over the course of the various phases of the Voluntary Cleanup Investigation (VCI). The raw data was run through an EVS modular system to generate three-dimensional volumes for hexavalent chromium in soil. The detailed description of the model methodology to generate estimated volumes of hexavalent chromium impacted soil above Tier 2 RSK at the Site are presented in Voluntary Cleanup Plan report dated April 11, 2014 (WSP 2014).

Based on Non-Residential Tier 2 standards for total and hexavalent chromium (Section 1.2), an affected soil area of approximately 800 square feet was estimated at the Site (projected maximum footprint), with depths of at least 32 feet bgs. The total volume of affected soil was 10,198 cubic feet, with the highest concentrations restricted to the area beneath and immediately west of the DPL pit. Figures presenting the EVS-modeled two- and three-dimensional representations of the hexavalent chromium-affected soil are shown in VCP report (WSP 2014). Figure 3 shows the location of soil samples within the FCPA and the interpreted footprint of chromium-affected soil.

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[5] Please refer to WSP's 2013 *Supplemental Voluntary Cleanup Investigation Work Plan* for a summary of site investigations.
[6] The three-dimensional visualization was created using CTech Development Corporation's Environmental Visualization System (EVS) Pro version 9.8.2.

2.2 Contaminated Soil Cleanup Approach

The *in situ* reduction and fixation approach targeted soils containing hexavalent chromium at concentrations greater than the applicable Non-Residential Tier 2 RSK at the Site. Soils containing concentrations of hexavalent chromium less than the standards that underlay the affected soils were also to be treated as a precautionary measure to provide a treatment barrier to address vertical migration of hexavalent chromium.

CPS, a reductant, was selected for *in situ* reduction and fixation of hexavalent chromium to trivalent chromium. The CPS was delivered to the affected subsurface soils by infiltration and direct injection. CPS (CaS_x) reacts with oxygen (O_2) and carbon dioxide (CO_2) to form calcium thiosulfate (CaS_2O_3), hydrogen sulfide (H_2S), sulfur (S) and calcium carbonate ($CaCO_3$) as shown below:

$$CaS_x + 3/2\,O_2 \rightarrow CaS_2O_3 + (x-2)S$$

$$CaS_x + CO_2 \rightarrow CaCO_3 + H_2S + (x-1)S$$

Hexavalent chromium is reduced to trivalent chromium by calcium thiosulfate and hydrogen sulfide. The sulfide of trivalent chromium is unstable in water or soil moisture and precipitates as chromium hydroxide ($Cr(OH)_3$) which is stable across a wide range of naturally occurring geochemical conditions.

$$Cr^{6+} + 3/2\,CaS_2O_3 + 3/2\,H_2O \rightarrow Cr^{3+} + 3/2\,CaSO_4 + 3/2\,S + 3H^+$$

$$Cr^{6+} + 3/2\,H_2S \rightarrow Cr^{3+} + 3/2\,S + 3H^+$$

Hexavalent chromium may also be reduced indirectly by reaction with ferrous iron produced by interaction (reduction) of ferric iron (naturally present in soils) with calcium polysulfide.

2.2.1 CPS Bench Testing

Bench-scale testing of Site-soils was conducted to determine an appropriate dose of CPS to apply to the Site, to demonstrate stability of the resulting trivalent chromium across a wide range of potential geochemical conditions, and to demonstrate that significant off-gassing would not occur (WSP 2013c). Based on the bench test results, a dose of sulfur in the form of CPS at 15 times (15X) the stoichiometric amount of hexavalent chromium was demonstrated to be appropriate, and used as the basis of CPS demand calculations.

2.3 Soil Cleanup Program

The soil cleanup program was conducted sequentially to treat soils containing hexavalent chromium over non-residential Tier II RSK. Two rounds of treatments were necessary to achieve cleanup objectives. The first CPS treatment was performed in October 2014 and the second treatment was performed in May 2015. Both treatments included CPS application by direct injection and by infiltration through two galleries (DPL Gallery and Shallow Gallery) constructed in October 2014.

2.3.1 Amendment Storage, Mixing and Delivery (October, 2014)

The CPS was stored in polyethylene tanks, a material compatible with the reductant. CPS and potable dilution water were transferred to a separate polyethylene mixing tank for delivery preparation. CPS and potable dilution water were mixed to meet the ratios specified in the VCP for each amendment delivery type. After mixing, the diluted CPS solution (or "amendment fluid") was delivered through flexible hoses to the injection rig or galleries via a dedicated transfer pump. Please refer to Section 2.1.3.2 of WSP's VCP report (WSP 2014) for additional details on CPS storage, mixing, and delivery.

A summary of the mixing ratios for direct injection is provided in Section 2.3.2. A summary of the mixing ratios for the infiltration galleries is shown in Section 2.3.4.

2.3.2 Direct Injection

The locations of injection points were marked as shown in Figure 3. Before beginning intrusive work, Kansas One-Call (811) and a private utility locating service, Baker-Peterson, LLC of Cicero, Indiana were contacted to identify subsurface utilities. The locations of injection points were adjusted in the field by 1-2 feet as necessary to maintain a 3-foot minimum distance from marked subsurface utilities, structural elements, and existing monitoring wells. The amendment fluid was applied using direct-push methods with a 66-Series Geoprobe® rig and advanced through 1.5-inch outside diameter drill rods.

2.3.2.1 CPS Application (October 2014)

The first CPS application was conducted by Vironex Technical Services, LLC of Denver, Colorado from October 14 through 18, 2014. The amendment was mixed at a ratio of approximately 8 parts dilution water to one part CPS. A total of approximately 12,500 gallons of amendment fluid was delivered via direct injection through 24 boreholes located in the treatment zone. The amendment fluid was injected in five foot increments, from 15 to 40 feet bgs. The mixing ratios for the first CPS application are shown below.

	CPS (gal)	Dilution Water (gal)	Amendment Fluid (gal) (2)	Dilution Water to CPS Ratio (gal per gal)
All injection Points:	1,370	10,748	12,120	7.8
Per Injection Point:	57	448	505	7.8
Per Injection Interval:	10	75	85	7.8

Notes:
1. CPS = calcium polysulfide; gal = gallons; gal per gal = gallons per gallon.
2. All volumes are rounded to reflect the accuracy of field measurement.

Table 1 contains the field-measured amendment fluid volume on a point by point and per interval basis. The amendment fluid was injected starting from the bottom of the borehole (40 feet bgs) and working upward at 5-foot intervals to 15 feet bgs, using 1.5-inch drill rods equipped with expendable drive points[7]. Amendment fluid was injected at flow rates that varied between 0.1 to 10 gallons per minute (gpm) and at applied pressures between 110 to 200 pounds per square inch (psi). The injection pump was fitted with a valved discharge bypass (returning to the amendment mixing tank) to control applied pressure and flow.

If the amendment fluid delivery to any depth interval was not successful, the volume not delivered to that interval was added to the next delivery interval within the same boring. If delivery in the final interval was not successful, then the volume not delivered to that interval was added to the same interval at an adjacent location. Minor increases in total fluid volumes are the result of potable chase water used to clear CPS from equipment. After the amendment fluid delivery was completed at each point, the delivery point was abandoned by filling it with grout and the surface was patched to match the existing surface conditions.

2.3.2.2 CPS Application (May 2015)

Confirmation soil samples collected in January, 2015 identified residual Cr^{6+} in the areas near PSB-02, PSB-03, and PSB-05 (WSP 2015a). Please refer to Section 3.1.1 for discussion of the soil sampling results which were reported within the *Voluntary Cleanup Plan Monitoring* Report (WSP 2015a). The Voluntary Cleanup Plan Monitoring Report (WSP 2015a) also included recommendations for an additional CPS application via direct injection and infiltration.

The second CPS application was completed by Geotechnical Services, Inc. of Wichita, Kansas from May 4 through 6, 2015. The amendment was mixed at a ratio of approximately ½ part dilution water to 1 part CPS. Approximately

[7] Several attempts to inject through a pressure-activated horizontal injection probe failed before switching to expendable drive points.

1,500 gallons of amendment fluid was delivered via direct injection through 14 boreholes located in the treatment zone. The amendment fluid was injected in one foot increments targeting specific zones in each boring. The mixing ratios for the second CPS application are shown below.

	CPS (gal)	Dilution Water (gal)	Amendment Fluid (gal)	Dilution Water to CPS Ratio (gal per gal)
All injection Points:	830	399	1,299	0.48
Per Injection Interval:	5.7	2.7	8.4	0.48

Notes:
1. CPS = calcium polysulfide; gal = gallons; gal per gal = gallons per gallon.
2. All volumes are rounded to the nearest gallon to reflect the accuracy of field measurements.

Table 2 contains the field-measured amendment fluid volume on a point by point and per interval basis. The amendment fluid was injected starting from the bottom of the borehole (35 feet bgs) and working upward at 1-foot intervals to the shallowest depth (6 feet bgs) using 1.5 inch drill rods and a pressure activated horizontal injection probe. Amendment fluid was injected at flow rates that varied between 2 to 10 gpm and 25 psi of applied pressure. The pump was fitted with a valved discharge bypass (returning to the amendment mixing tank) to control applied pressure and flow.

If the amendment fluid delivery to any depth interval was not successful, the volume not delivered to that interval was added to the next delivery interval within the same boring. If delivery in the final interval was not successful, then the volume not delivered to that interval was added to the same interval at an adjacent location. Additional amendment fluid was applied during injection based on field observations. As a result, amendment volumes for the second infiltration gallery application were slightly less than the anticipated volume. After the amendment fluid delivery was completed at each point, the delivery point was abandoned by filling it with grout and the surface was patched to match the existing surface conditions.

2.3.3 Infiltration Gallery Construction (October 2014)

Following the completion of the first round of amendment injections, two infiltration galleries were constructed in the FCPA. An infiltration gallery was constructed in the DPL pit (DPL Gallery), and a shallow infiltration gallery was constructed immediately west of the DPL pit (Shallow Gallery). Both infiltration galleries were designed to intersect and follow the same flow paths that lead to the subsurface distribution of hexavalent chromium.

2.3.3.1 DPL Gallery Construction

An infiltration gallery was constructed in the DPL pit as follows:

- Prior to any intrusive activities, the DPL pit was shored using a vertical shoring system.
- The existing concrete floor of the DPL pit was removed, demolished, characterized, and transported offsite to a properly permitted disposal facility. Please refer to Section 4.2 for details on the waste disposal.
- The pit was backfilled with coarse stone.
- A 4-inch perforated PVC pipe was installed in the pit for delivery of the amendment fluid into the coarse stone backfill.
- A second 4-inch PVC pipe was installed within the coarse stone backfill near the surface of the gallery as a conservative measure to passively vent any unexpected vapors to the outside of the building.
- A piezometer was installed within the gallery to measure the elevation of amendment fluid in the gallery during application.
- The top of the DPL Gallery was finished with reinforced concrete to match the existing floor in the building.

2.3.3.2 Shallow Gallery Construction

The shallow gallery was constructed immediately west of the DPL pit as follows:

- The existing concrete floor was removed, demolished, characterized, and transported offsite to a properly permitted disposal facility. Please refer to Section 4.2 for details on the waste disposal.
- Shallow soil was excavated to create the space to construct the gallery.
- The excavated shallow soil was characterized and transported offsite to a properly permitted disposal facility. Please refer to Section 4.2 for details on the waste disposal.
- The void was backfilled with coarse stone.
- A 4-inch perforated PVC pipe was installed and used to deliver the amendment fluid into the coarse stone backfill.
- A second 4-inch PVC pipe was installed within the coarse stone backfill near the surface of the gallery as a conservative measure to passively vent any unexpected vapors to the outside of the building.
- A piezometer was installed within the gallery to measure the elevation of amendment fluid in the gallery during application.
- The top of the Shallow Gallery was finished with reinforced concrete to match the existing floor in the building.

The galleries were installed as designed. The locations of the infiltration galleries are presented in Figure 3. The *Voluntary Cleanup Plan* (WSP 2014) contains additional construction details.

2.3.4 Infiltration Gallery Amendment Application

The maximum fluid working volume of each gallery was conservatively calculated within the VCP to be one-half of the pore volume of each gallery. As such, amendment fluid applications were made to each gallery in batches. Between each batch application, fluid levels were monitored using an electronic water level indicator passed through the piezometer installed in each gallery. The fluid levels were allowed to drop between the applications of batches to prevent overflow of the galleries.

2.3.4.1 First Infiltration Gallery Application (October 2014)

The first CPS application through the infiltration galleries was completed from October 20 through 28, 2014. A total of approximately 8,758 gallons of amendment fluid comprised of 2,011 gallons of CPS and 6,747 gallons of dilution water were applied through the DPL Gallery. A total of approximately 2,685 gallons of amendment fluid comprised of 728 gallons of CPS and 1,957 gallons of dilution water were added to the Shallow Gallery. The volume of amendment fluid delivered during the first infiltration gallery application is shown on Table 3.

2.3.4.2 Second Infiltration Gallery Application (May 2015)

The second CPS application through the infiltration galleries was completed in May, 2015. A total of approximately 2,093 gallons of amendment fluid comprised of 675 gallons of CPS and 1,418 gallons of dilution water were added to the DPL Gallery. A total of approximately 360 gallons of amendment fluid comprised of 98 gallons of CPS and 262 gallons of dilution water were added to the Shallow Gallery. As stated in Section 2.3.2.2, these volumes are slightly less than anticipated based on field observations during direct injection. The volume of amendment fluid delivered during the second infiltration gallery application is shown on Table 3.

3 Performance Monitoring

Performance monitoring was conducted to verify that the non-residential Tier 2 RSK soil cleanup objectives were achieved and to confirm that total chromium concentrations in groundwater remain below the Tier 2 RSK. Performance monitoring included:

- collection of soil samples approximately 10 weeks after the initial amendment application,
- collection of groundwater samples approximately 10 weeks after the initial amendment application,
- collection of soil samples approximately 4 weeks after the second amendment application,
- collection of groundwater samples approximately 4 weeks after the second amendment application, and
- collection of groundwater samples approximately 19 weeks after the second amendment application.

Performance monitoring activities and results are summarized below; details are provided within the voluntary cleanup plan monitoring reports (WSP 2015a, WSP 2015b, and WSP 2015c).

3.1 Confirmation Soil Sampling

Soil samples were collected from six 12-inch diameter sample access casings that were installed through the coarse infiltration gallery backfill and into the treated soil underlying the galleries. Groundwater samples were collected from the four site groundwater monitoring wells. The performance monitoring soil sample and groundwater monitoring well locations are shown on Figure 3.

Performance monitoring soil sampling results are compared to the cleanup objectives (Section 1.1.3). Groundwater sampling results are compared to RSK values (0.1 mg/l). All samples were collected in accordance with the Field Sampling Plan (FSP) and analyzed by Pace Analytical Services, Inc. of Lenexa, Kansas in accordance with the Quality Assurance Project Plan (QAPP). These plans are provided within the VCP (WSP 2014).

3.1.1 Confirmation Soil Sampling (January 2015)

Confirmation soil samples were collected to evaluate the effectiveness of treatment on January 6 and 7, 2015, approximately 10 weeks following the initial CPS application. Soil samples were collected by advancing soil borings through the six access casings into the soil below using a direct-push drill rig equipped with 2.25-inch diameter dual-tube sample tooling. The samplers were advanced through the target interval, and then withdrawn. Soil samples were collected from five discrete depth intervals within the six sample points, for a total of 30 primary soil samples. The soil samples were transferred into laboratory-supplied bottleware, and shipped to the laboratory to be analyzed for total chromium (by EPA SW-846 Method 6010) and hexavalent chromium (by EPA SW-846 Method 7196A). QA samples were collected in accordance with the QAPP.

Twenty-six of the primary samples contained hexavalent chromium concentrations less than the site cleanup objective of 111 mg/kg and four samples contained hexavalent concentrations greater than the cleanup objective. Soil from PSB-01 contained hexavalent chromium at concentrations between non-detect (ND) and 110 mg/kg. Soil from PSB-02 contained hexavalent chromium at concentrations below the site cleanup objective, except a sample collected at 30 to 31.5 feet bgs, which had a concentration of 195 mg/kg. Hexavalent chromium concentrations from 4 soil samples collected from boring PSB-03 were not detected above laboratory reporting limits. One PSB-3 sample, from 20 to 21 feet bgs, contained hexavalent chromium above the cleanup objective at a concentration of 128 mg/kg. Soil from PSB-04 contained hexavalent chromium at concentrations between ND and 32.7 mg/kg, below the cleanup objective. Soil from PSB-05 contained hexavalent chromium at concentrations between 8.6 and 314 mg/kg. The PSB-5 soil samples from two intervals, 6 to 7 feet and 20 to 21 feet bgs, contained concentrations of hexavalent chromium above the cleanup objective. Soil from PSB-06 did not contain hexavalent chromium at concentrations exceeding laboratory reporting limits or the cleanup objective.

Based on these soil sampling results, a second CPS injection event was implemented. Soil sample results are presented in Table 4.

3.1.2 Confirmation Soil Sampling (June 2015)

The second round of confirmation soil sampling was completed in June 2015, approximately one month after the second CPS application. Soil samples were collected from the locations that contained hexavalent chromium at concentrations above the site cleanup objectives during the January 2015 sampling event. Soil samples were collected from three locations and four discrete intervals that exceeded cleanup objectives during the January 2015 sampling event. Soil samples were analyzed for total chromium by EPA SW-846 Method 6010 and hexavalent chromium by EPA SW-846 Method 7196A.

Hexavalent chromium was not detected above the laboratory reporting limit in any of the samples. The final confirmation soil sampling results are presented in Table 4 and Figure 4. The table below shows a comparison of the January 2015 and June 2015 confirmation sample results.

Sample Location	Sample Depth (ft bgs)	Hexavalent Chromium Concentration (mg/kg)	
		January 2015	June 2015
PSB-02	30 – 31.5	195	ND
PSB-03	20 – 21	128	ND
PSB-05	6 – 7	314	ND
PSB-05	20 – 21	254	ND

Notes:
1. ft bgs = feet below ground surface; mg/kg = milligrams per kilogram; ND = not detected at or above adjusted reporting limits.

3.2 Groundwater Monitoring

Groundwater samples were collected before amendment application and following injection/infiltration activities to monitor for the presence of total chromium and to confirm that the treatment efforts did not leach hexavalent chromium to groundwater. The groundwater monitoring well locations are shown in Figure 3, and well construction information is shown in Table 5.

Before beginning treatment activities, WSP conducted a Supplemental Voluntary Cleanup Investigation to provide additional data to fill onsite data gaps (WSP 2013a and WSP 2013b). The previous monitoring well network (MW-01, MW-02, and MW-03) was insufficient for determining groundwater flow direction and gradient. KDHE requested an additional monitoring well east of the southern edge of the DPL pit. WSP installed MW-04 to fulfill KDHE's request.

At the beginning of each groundwater sampling event, WSP collected site-wide depth-to-groundwater measurements from each well (Table 6). Groundwater was first encountered at approximately 50 feet bgs in all wells. Groundwater flow was to the east across the FCPA, with a relatively flat gradient of approximately[8] 0.002 ft/ft. Figure 5 shows groundwater contours presented in the most recent VCP Monitoring Report (WSP 2015b).

Before groundwater sampling, each well was purged by removing three well volumes using dedicated disposable polyethylene bailers. During purging, groundwater was analyzed for parameters including temperature, pH, conductivity, oxidation-reduction potential (ORP), and turbidity (Table 7).

[8] The hydraulic gradient was calculated using values measured between wells MW-01 and MW-02. The calculated values were 0.0025 ft/ft (August 2013), 0.0021 ft/ft (January 2015), 0.0013 ft/ft (June 2015) and 0.0015 ft/ft (September 2015).

Groundwater samples were analyzed by Pace Analytical Services, Inc. of Lenexa, Kansas for total chromium by United States Environmental Protection Agency (EPA) SW-846 Method 6010. Quality Assurance (QA) samples were collected in accordance with the QAPP.

3.2.1 Baseline Groundwater Monitoring (August 2013)

WSP conducted the baseline groundwater monitoring event in August, 2013. Of note, ORP values of approximately 160 millivolts were recorded, indicating slightly oxidizing conditions were present at the site. Samples were collected and analyzed for total and hexavalent chromium. Chromium was not detected at or above laboratory reporting limits in samples from any of the site groundwater monitoring wells

3.2.2 Groundwater Monitoring (January 2015)

The first post-injection groundwater monitoring event was performed between January 6 and 8, 2015, approximately 10 weeks after the initial CPS injection. Measured pH values were slightly higher than in August 2013, but remain within the range of neutral conditions. ORP readings were also generally slightly higher in the post-treatment samples. Chromium was not detected at or above laboratory reporting limits in samples from any of the site groundwater monitoring wells.

3.2.3 Groundwater Monitoring (June 2015)

The second post-injection groundwater monitoring event was performed on June 9, 2015, approximately one month after the second CPS application (and 32 weeks after the initial CPS injection). Measured pH values decreased to a level slightly lower than baseline conditions, but still within the range of neutral conditions. ORP readings returned to levels generally consistent with baseline values. Chromium was not detected at or above laboratory reporting limits in samples from any of the site groundwater monitoring wells.

3.2.4 Groundwater Monitoring (September 2015)

The final round of post-treatment groundwater monitoring was conducted on September 24, 2015, approximately 19 weeks after the second CPS application (and 47 weeks after the initial CPS injection). The groundwater analytical results remain consistent with those measured during pre-CPS application conditions in August 2013. Total chromium was not detected above laboratory reporting limits in samples from three of the four onsite wells. A minor detection (0.0072 mg/kg) of total chromium was measured in the sample from the upgradient well (MW-01), but is likely unrelated to the CPS injections.

3.3 Air Monitoring

During construction of the infiltration galleries, WSP installed a passive system to vent subsurface vapors to the outside of the building. Indoor air monitoring was conducted continuously during the implementation of all remediation activities. Monitoring was performed using a multi-gas meter to monitor for the production of hydrogen sulfide (H_2S) gas within the worker's breathing zone. Personnel were also equipped with personal H_2S meters during the application of amendment fluids. No H_2S gas was detected during the VC activities.

During the September performance monitoring event, additional air monitoring was conducted at the discharge vent. Tubing attached to a multi-gas meter was fed into the discharge vent. The multi-gas meter was allowed to run continuously for approximately five minutes. H_2S was not detected at the discharge vent.

4 Waste Management

Investigation derived waste (IDW) generated during the supplemental VCI and VC activities and remediation derived wastes produced during the VC activities were handled, characterized, and disposed of in accordance with solid waste and hazardous materials transportation requirements.

4.1 IDW Management

IDW included soil generated during investigation and performance monitoring sampling, and groundwater generated during performance monitoring sampling. All IDW were drummed and staged onsite in accordance with the *Supplemental Voluntary Cleanup Investigation Work Plan* (WSP 2013) and the *Voluntary Cleanup Plan* (WSP 2014). Composite samples were collected and analyzed by Pace Analytical of Lenexa, Kansas for waste characterization by the following methods:

- toxicity characteristic leaching procedure (TCLP) for metals by SW6010 and SW6020A,
- TCLP for mercury by method SW7470 and SW7470A, and
- pH by method SM45500-H+B and SW9045D.

Based on the results of the analysis (Appendix A), KDHE authorized the disposal of the IDW as non-hazardous waste under Special Waste Disposal Authorization number 14-1439. In November 2014, a total of 1.02 tons of soil IDW was transported by Northend Disposal of Dodge City, Kansas, and disposed of as non-hazardous waste at Ford County Landfill, of Dodge City, Kansas. One drum of IDW soil and one drum of IDW groundwater remain staged onsite pending shipment to the disposal facility. KDHE has authorized disposal of these wastes as non-hazardous waste under Special Waste Disposal Authorization number 15-1622 for soil and 15-1618 for groundwater (Appendix A) at the Waste Connections (WC), Plumb Thicket facility in Harper, Kansas. Copies of non-hazardous waste manifests for these wastes will be sent to KDHE under a separate cover following disposal activities.

4.2 Remediation Derived Waste Management

Waste generated during the construction of the infiltration galleries was stockpiled during work. The wastes were separated into two stockpiles:

- Concrete material from the DPL pit and the shallow gallery
- Soil material from beneath the shallow gallery

All concrete material was treated as hazardous waste based on generator knowledge. A total of 20.98 tons of concrete waste was transported by Action Resources Inc., and disposed as hazardous waste at Clean Harbors' Lone Mountain LLC, of Waynoka, Oklahoma (Appendix A). A signed copy of the waste manifest will be retained for a minimum of 3 years according to 40 CFR 761.209(a).

A composite sample was collected from the soil stockpile and analyzed by ALS Environmental of Houston, Texas, for hazardous characteristics, including:

- toxicity characteristic leaching procedure (TCLP) for volatiles by method SW1311/8260B,
- TCLP for semi-volatiles by method SW1311/8270,
- TCLP for metals by method SW6020A,
- TCLP for mercury by method SW7470A,
- pH by method SW9045D,
- reactive cyanide by method SW7.3.3.2,
- reactive sulfide by method SW7.3.4.2, and
- flashpoint

Based on the results of the analysis, KDHE authorized the disposal of the soil waste as non-hazardous waste under Special Waste Disposal Authorization Number 14-1438 (Appendix A). A total of 27.64 tons of soil waste was transported by Northend Disposal of Dodge City Kansas, and disposed of as non-hazardous waste at Ford County Landfill, of Dodge City, Kansas.

Appendix A includes waste characterization analysis, waste profiles, waste manifests, and landfill weight tickets for the remediation derived waste.

5 Summary and Conclusions

WSP performed the scope of work defined in the VCP and Voluntary Cleanup Plan Monitoring Report that included construction of the amendment infiltration galleries and the application of CPS through both direct injection and the infiltration galleries. The objective of the VC was to remediate hexavalent chromium affected soils at the Site to non-residential RSK and confirm that total chromium concentrations in groundwater remain below the Tier 2 RSK for 6 months after the final CPS application. All work was conducted in accordance with the Voluntary Cleanup Plan and the March 2015 Voluntary Cleanup Plan Monitoring Report.

Following initial remedial amendment application performed in October, 2014, confirmation soil samples collected in January, 2015 identified the presence of residual hexavalent chromium at concentrations greater than the Tier 2 RSK of 111 mg/kg in discrete areas. These residual hexavalent chromium affected soils were targeted during a second CPS treatment performed in May, 2015. The CPS was allowed to incubate for a period of approximately 1 month before sampling following the second application.

Based on the results of post-remedial sampling, WSP confirmed that:

- Remediation of chromium affected soil in the FCPA was effective at reducing hexavalent chromium concentrations to less than the Non-Residential Tier 2 RSK.
- Total chromium concentrations in groundwater remain below the RSK, confirming that hexavalent chromium was not leached into onsite groundwater during treatment of overlying soils.

Cross has satisfied the Tier 2 non-residential chromium cleanup objectives established for the Site. Activities to place Environmental Use Controls (EUC) on the property to restrict future land use to non-residential are underway and an Application for Environmental Use Control has been submitted to KDHE. The EUC application and associated submittals are also provided in Appendix B.

References

KDHE. 2010. Risk-Based Standards for Kansas, RSK Manual – 5th Version. October, 2010. McLaughlin. 1949. Geology and Ground-Water Resources of Pawnee and Edwards Counties, Kansas, State Geological Survey of Kansas Bulletin 80.

KDHE. 2011. Voluntary Cleanup and Property Redevelopment Program Manual. June 30, 2011.

KDHE. 2012. Acceptance into the Voluntary Cleanup and Property Redevelopment Program, Cross Manufacturing Facility, Edwards County, Lewis, Kansas. March 19, 2012.

KDHE. 2013a. Email from Kelsee Wheeler on calculated values for hexavalent and trivalent chromium in soil. May 17, 2013.

KDHE. 2013b. Approval, Voluntary Cleanup Investigation (VCI) Work Plan, Cross Manufacturing Facility, Edwards County, Lewis, Kansas. July 5, 2013.

KDHE. 2014. Approval, VC Plan, Cross Manufacturing Facility, Edwards County, Lewis, Kansas. June 10, 2014.

KDHE. 2015a. Approval, Voluntary Cleanup Plan Monitoring Report Cross Manufacturing Facility, Edwards County, Lewis, Kansas. March 13, 2015.

KDHE 2015c. Approval, Voluntary Cleanup Plan Monitoring Report Cross Manufacturing Facility, Edwards County, Lewis, Kansas. August 6, 2015

KDHE 2015c. Approval, Voluntary Cleanup Plan Monitoring Report Cross Manufacturing Facility, Edwards County, Lewis, Kansas. November 6, 2015

Terracon. 2012a. Voluntary Cleanup Investigation Work Plan. June 12, 2012.

Terracon. 2012b. Voluntary Cleanup Investigation Report. September 26, 2012.

Terracon. 2012c. Voluntary Cleanup Investigation Work Plan. November 9, 2012.

Terracon, 2013. Supplemental Voluntary Cleanup Investigation Report. January 18, 2013.

WSP 2013a. Supplemental Voluntary Cleanup Investigation Work Plan. June 12, 2013.

WSP 2013b. Supplemental Voluntary Cleanup Investigation Report. October 9, 2013.

WSP 2013c. Voluntary Cleanup Proposal. December 20, 2013.

WSP 2014. Voluntary Cleanup Plan. April 11, 2014.

WSP 2015a. Voluntary Cleanup Plan Monitoring Report. March 5, 2015.

WSP 2015b. Voluntary Cleanup Plan Monitoring Report. July 30, 2015.

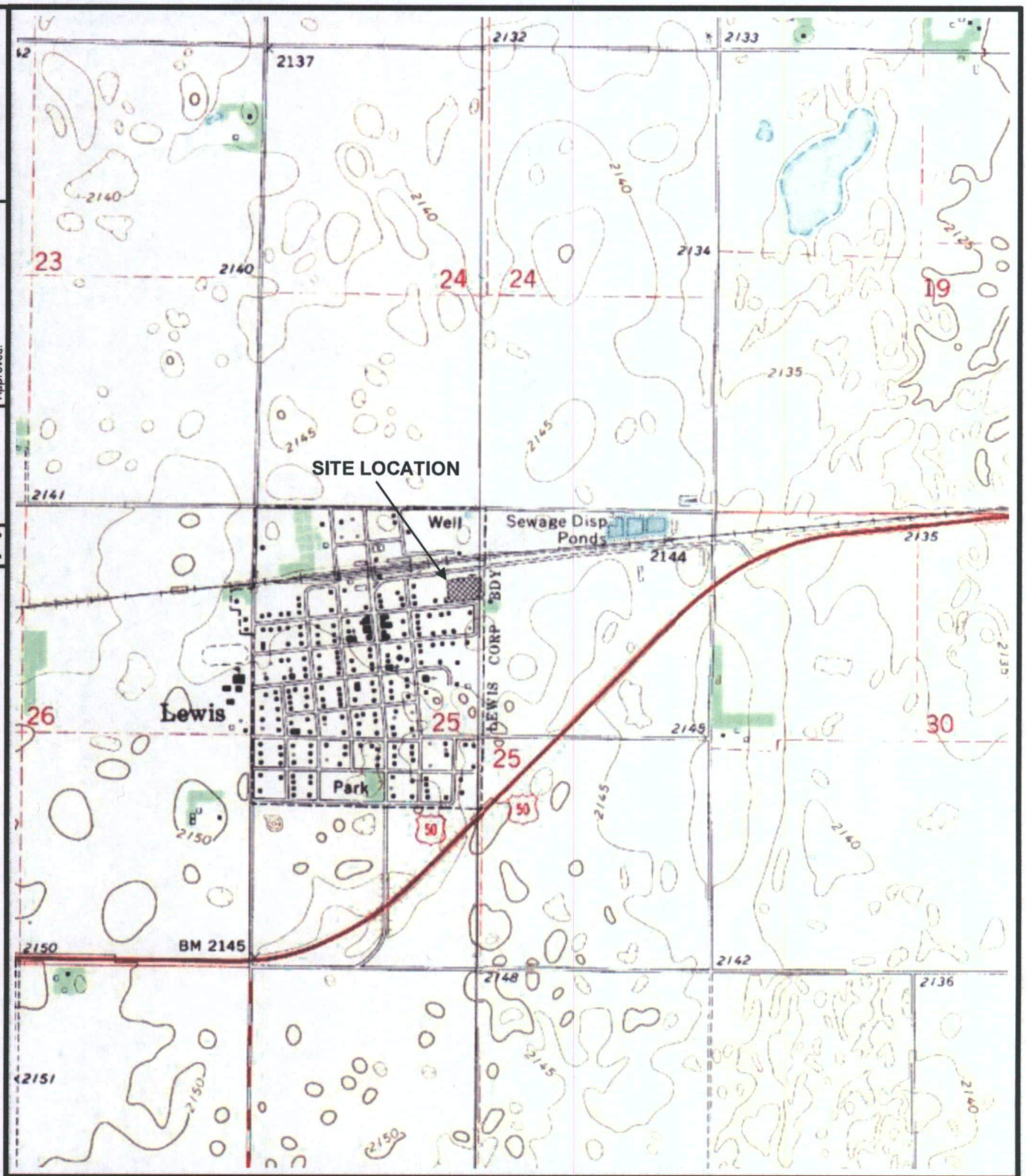
WSP 2015c. Voluntary Cleanup Plan Monitoring Report. October 28, 2015.

Acronym List

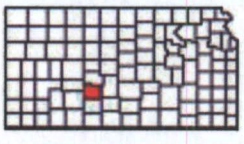
BER	Bureau of Environmental Remediation
bgs	below ground surface
$CaCO_3$	calcium carbonate
CaS_2O_3	calcium thiosulfate
CO_2	carbon dioxide
CPS	calcium polysulfide
Cr^{3+}	trivalent chromium
Cr^{6+}	hexavalent chromium
$Cr(OH)_3$	chromium hydroxide
DPL	decommissioned plating line
EPA	Environmental Protection Agency
FCPA	former chromium plating area
FSP	Field Sampling Plan
gpm	gallons per minute
H_2S	hydrogen sulfide
HPA	historic plating area
KDHE	Kansas Department of Health and Environment
KGS	Kansas Geological Survey
LSI	Limited Site Investigation
mg/kg	milligrams per kilogram
ND	not detected
O_2	oxygen
ORP	oxidation-reduction potential
PSI	pounds per square inch
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
RSI	Remediation Services, Inc.
RSK	Risk-based Standards for Kansas
VC	Voluntary Cleanup

VCP	Voluntary Cleanup Plan
VCR	Voluntary Cleanup Report
VCPRP	Voluntary Cleanup and Property Redevelopment Program
WSP	WSP USA, Corp.

Figures



REFERENCE:
7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE
BELPRE NW, KANSAS
PHOTOREVISED 1982 SCALE 1:24,000



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SCALE, FEET

DWG Name: Lewis KS Figure 1.pub
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Drawn By: EMH 10/26/15

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FIGURE 1

SITE LOCATION MAP

CROSS MANUFACTURING
LEWIS, KANSAS

PREPARED FOR
CROSS MANUFACTURING, INC.
LEWIS, KANSAS


KEY MAP
ENLARGED AREA ON THIS FIGURE
0 30 60 120
SCALE, FEET
LEGEND
MW-2 MONITORING WELL
MAIN POWER IN
PROPERTY BOUNDARY (APPROXIMATE)
N
HOT WORK
PAINT SPRAYING AREA
PAINT KITCHEN
MW-03
SEAL STORAGE
EXIT 5
STORM DRAIN
DAY'S PAINT USAGE
SCRUBBER
RECTIFIER ROOM
COOLING TOWER
MW-02
TRANSFORMER
ELECTRICAL PANEL
SPILL CONTROL EQUIP
BAKE-OFF OVEN
EVAPORATOR
EVAPORATOR SYSTEM 8000 WASTE WATER 3000 WASTE SLUDGE 1000 WASTE WATER
USED OIL
HISTORIC PLATING AREA
RECYCLING AREA
SOLVENT TANK
MW-01
HOT WORK
FLAMMABLE STORAGE
BULK CHEMICAL
HAZARDOUS WASTE STORAGE AREA
SCRAP TRAILER
CHIP PIT
UNUSED HAZARDOUS WASTE DRUMS
OVER-PACKS
FORMER CHROME PLATING AREA
1,600 GALLON STORAGE TANK
DECOMMISSIONED PLATING LINE
MW-04
STEEL ROOM
BOOSTER PUMP
SPRINKLER SYSTEM
STANDPIPE SPRINKLER VALVES
BERM
INTERMITTENT CREEK
EXIT 9
EXIT 8
EXIT 7
EXIT 6
STORM DRAIN
EMERGENCY VEHICLE ACCESS
EMERGENCY VEHICLE ACCESS
ABANDONED HOUSE
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SCALE, FEET
FORMER UST BASIN (APPROXIMATE)
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REVISIONS
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DESCRIPTION
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DATE
DRAWN BY
CHECKED
APPROVED
SITE LAYOUT
CROSS MANUFACTURING, INC.
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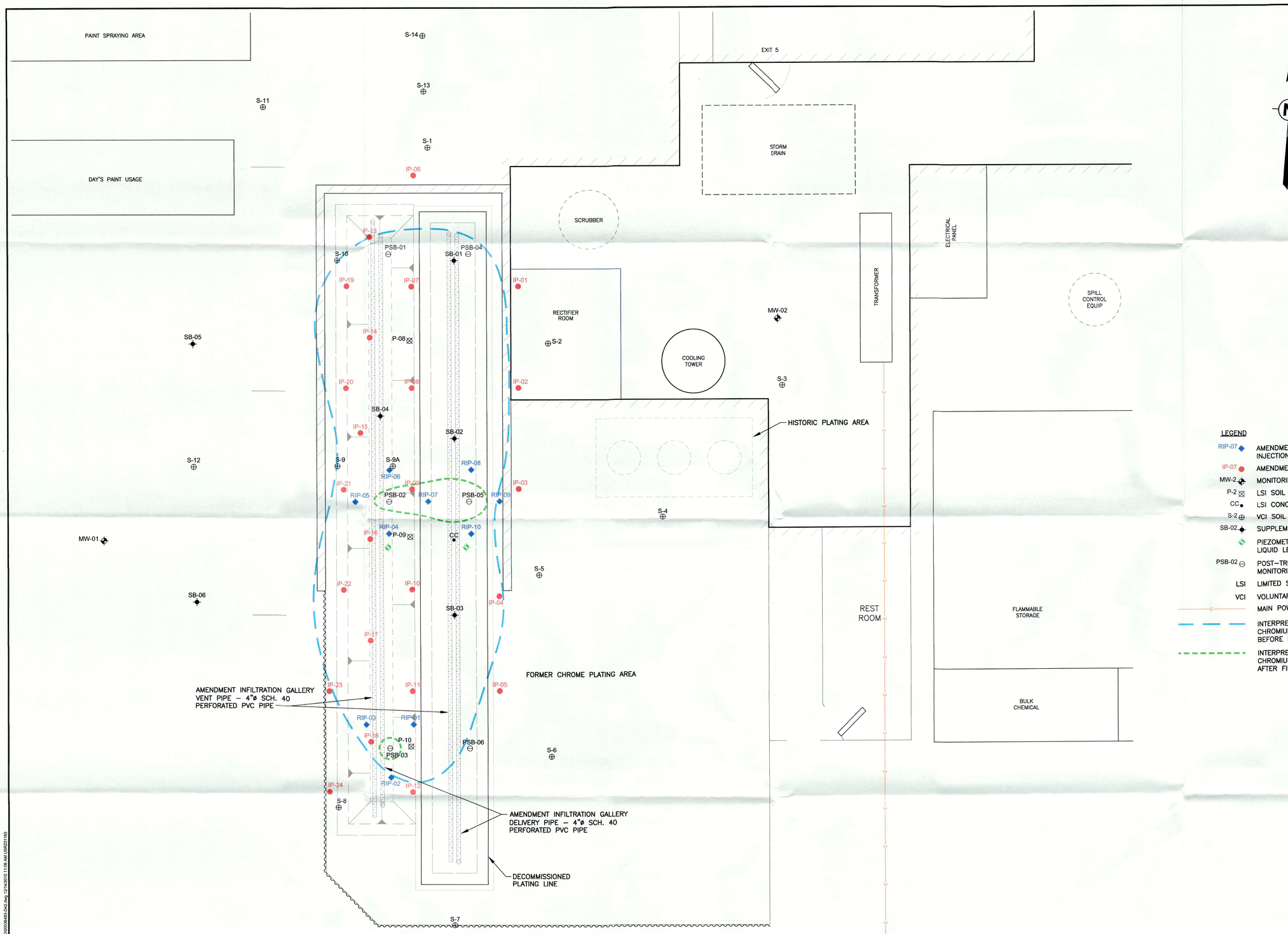
FIGURE 2
Drawing Number
00036483-D27



LEGEND

- RIP-07 — AMENDMENT REAPPLICATION INJECTION POINT (MAY 2015)
- IP-07 — AMENDMENT INJECTION POINT (OCTOBER 2014)
- MW-2 — MONITORING WELL
- P-2 — LSI SOIL BORING (2012)
- CC — LSI CONCRETE CORE (2012)
- S-2 — VCI SOIL BORING (2012)
- SB-02 — SUPPLEMENTAL VCI SOIL BORING (2013)
- PIEZOMETER USED FOR MEASURING LIQUID LEVEL INSIDE GALLERY
- PSB-02 — POST–TREATMENT PERFORMANCE MONITORING SOIL BORING (2015)
- LSI — LIMITED SITE INVESTIGATION
- VCI — VOLUNTARY CLEANUP INVESTIGATION
- E — MAIN POWER IN
- INTERPRETED EXTENT OF HEXAVALENT CHROMIUM IN SOIL ABOVE 111 mg/kg BEFORE FIRST TREATMENT APPLICATION
- INTERPRETED EXTENT OF HEXAVALENT CHROMIUM IN SOIL ABOVE 111 mg/kg AFTER FIRST TREATMENT APPLICATION

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3	Addendum	Chkd:	Appvd:

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APPROVED

SOIL BORING, MONITORING WELL, AND INJECTION POINT LOCATIONS

CROSS MANUFACTURING, INC.
LEWIS, KANSAS

PREPARED FOR
CROSS MANUFACTURING, INC.
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FIGURE 3

Drawing Number
00036483–D42

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PAINT SPRAYING AREA

DAY'S PAINT USAGE

EXIT 5

STORM DRAIN

SCRUBBER

RECTIFIER ROOM

TRANSFORMER

ELECTRICAL PANEL

SPILL CONTROL EQUIP

COOLING TOWER

HISTORIC PLATING AREA

FORMER CHROME PLATING AREA

REST ROOM

FLAMMABLE STORAGE

BULK CHEMICAL

AMENDMENT INFILTRATION GALLERY VENT PIPE – 4"ø SCH. 40 PERFORATED PVC PIPE

AMENDMENT INFILTRATION GALLERY DELIVERY PIPE – 4"ø SCH. 40 PERFORATED PVC PIPE

DECOMMISSIONED PLATING LINE

S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-8, S-9, S-9A, S-10, S-11, S-12, S-13, S-14

SB-01, SB-02, SB-03, SB-04, SB-05, SB-06

PSB-01, PSB-02, PSB-03, PSB-04, PSB-05, PSB-06

P-08, P-09, P-10

CC

MW-01, MW-02, MW-04

PSB-01	Chromium	
	Total	Hexavalent
3-4.2	164	ND
10-11	65.9	ND
20-21	129	110
30-31	95.3	ND
37.5-39	74.5	12.7

PSB-02	Chromium	
	Total	Hexavalent
3-4	13.4	ND
10-11	10.4	ND
20-21	46.1	ND
30-31.5	286 J	ND
42-43	11.7	ND

PSB-03	Chromium	
	Total	Hexavalent
3-4	64	ND
10-11	9	ND
20-21	61.1 J	ND
30-31	2.7	ND
40-41	1.9	ND

PSB-04	Chromium	
	Total	Hexavalent
3-4	858	9.7
10-11	55.7	ND
20-21	30.8	32.7
30-31	9.8	2.5
40-41	42.7	2.3

PSB-05	Chromium	
	Total	Hexavalent
6-7	232 J	ND
10-11	229	56.9
20-21	104 J	ND
30-31	43.9	25.4
40-41.5	22.9	8.6

PSB-06	Chromium	
	Total	Hexavalent
5.8-6.8	99.3	ND
10-11.5	9.1	ND
20-21	7.1	ND
30-31	3.6	ND
40-41	1.4	ND

LEGEND

- AMENDMENT INJECTION POINT (OCTOBER 2014)
- MW-2 MONITORING WELL
- P-2 LSI SOIL BORING (2012)
- CC LSI CONCRETE CORE (2012)
- S-2 VCI SOIL BORING (2012)
- SB-02 SUPPLEMENTAL VCI SOIL BORING (2013)
- PIEZOMETER USED FOR MEASURING LIQUID LEVEL INSIDE GALLERY
- PSB-02 POST–APPLICATION SOIL BORING (2015)
- LSI LIMITED SITE INVESTIGATION
- VCI VOLUNTARY CLEANUP INVESTIGATION
- MAIN POWER IN
- INTERPRETED EXTENT OF HEXAVALENT CHROMIUM IN SOIL ABOVE 111 mg/kg BEFORE FIRST TREATMENT APPLICATION

PSB-06 | Chromium: Total | Hexavalent

- SAMPLE DESIGNATION
- CONSTITUENT
- SAMPLE RESULTS IN mg/kg – NO SAMPLES EXCEED THE NON–RESIDENTIAL RISK VALUE
- SAMPLE DEPTH IN FT–BGS

NOTE:

POSTED RESULTS INCLUDE THE MOST RECENT SAMPLE COLLECTED FROM EACH SAMPLING INTERVAL.

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3	Revised	DMJE	APPD

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APPROVED

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SOIL CONFIRMATION SAMPLING RESULTS

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CROSS MANUFACTURING, INC.
LEWIS, KANSAS

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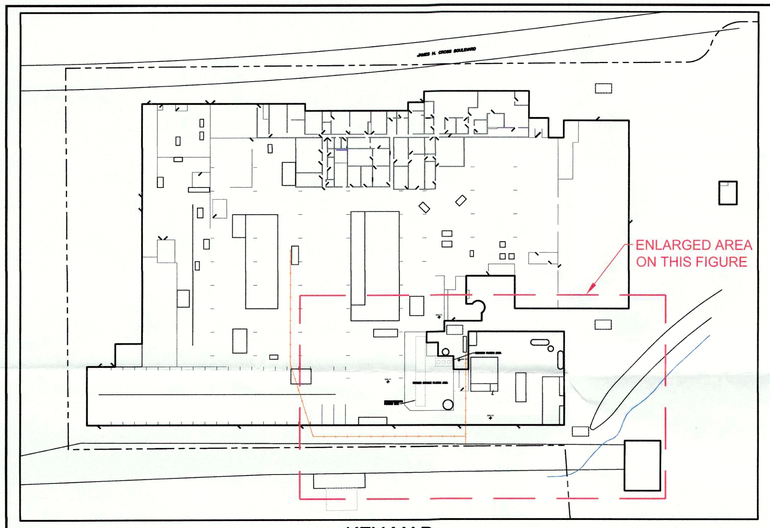
FIGURE 4

Drawing Number
00036483–D43



KEY MAP

0 30 60 120
SCALE, FEET

LEGEND

- MW-2 — MONITORING WELL
- MAIN POWER IN
- PROPERTY BOUNDARY (APPROXIMATE)
- [2092.45] — GROUNDWATER ELEVATION IN FT-MSL (SEPTEMBER 24, 2015)
- GROUNDWATER ELEVATION CONTOUR
- INFERRED GROUNDWATER FLOW DIRECTION
- FT-MSL — FEET ABOVE MEAN SEA LEVEL
- SAMPLE DESIGNATION
- CONSTITUENT
- SAMPLE RESULTS IN mg/kg
  ND = NOT DETECTED
  NA = NOT ANALYZED
- DATE OF SAMPLING EVENT

MW-03	Chromium	
	Total	Hexavalent
8/8/2013	ND	ND
1/8/2015	ND	NA
6/9/2015	ND	NA
9/24/2015	ND	NA

	Chromium	
	Total	Hexavalent
RESIDENTIAL	0.1	0.1
NON-RESIDENTIAL	R	R

N

PAINT SPRAYING AREA
PAINT KITCHEN
MW-03 [2092.04]
2092.00
SEAL STORAGE
EXIT 5
STORM DRAIN
DAY'S PAINT USAGE
SCRUBBER
RECTIFIER ROOM
COOLING TOWER
TRANSFORMER
ELECTRICAL PANEL
SPILL CONTROL EQUIP
BAKE-OFF OVEN
EVAPORATOR
EVAPORATOR SYSTEM
8000 WASTE WATER
3000 WASTE SLUDGE
1000 WASTE WATER
USED OIL
HISTORIC PLATING AREA
MW-02 [2092.04]
RECYCLING AREA
FLAMMABLE STORAGE
2092.10
HOT WORK
MW-01 [2092.13]
FORMER CHROME PLATING AREA
BULK CHEMICAL
HAZARDOUS WASTE STORAGE AREA
SCRAP TRAILER
UNUSED HAZARDOUS WASTE DRUMS
CHIP PIT
OVER-PACKS
DECOMMISSIONED PLATING LINE
1600 GAL STORAGE TANK
MW-04 [2091.98]
BOOSTER PUMP
SPRINKLER SYSTEM
STANDPIPE SPRINKLER VALVES
EXIT 9
EXIT 8
EXIT 7
EXIT 6
EMERGENCY VEHICLE ACCESS
EMERGENCY VEHICLE ACCESS
STORM DRAIN
BERM
INTERMITTENT CREEK
ABANDONED HOUSE
FORMER UST BASIN (APPROXIMATE)

MW-01	Chromium	
	Total	Hexavalent
8/8/2013	ND	ND
1/8/2015	ND	NA
6/9/2015	ND	NA
9/24/2015	0.0072	NA

MW-02	Chromium	
	Total	Hexavalent
8/8/2013	ND	ND
1/8/2015	ND	NA
6/9/2015	ND	NA
9/24/2015	ND	NA

MW-04	Chromium	
	Total	Hexavalent
8/8/2013	ND	ND
1/8/2015	ND	NA
6/9/2015	ND	NA
9/24/2015	ND	NA

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REVISIONS

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2	Revised:	Chkd:	Appr:
3	Revised:	Chkd:	Appr:

SEAL

DATE

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CHECKED
APPROVED

GROUNDWATER ELEVATION CONTOURS SEPTEMBER 24, 2015

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LEWIS, KANSAS

PREPARED FOR
CROSS MANUFACTURING, INC.
LEWIS, KANSAS

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FIGURE 5

Drawing Number
00036483-D41

Tables

Table 1

CPS Amendment Delivery Details
Cross Manufacturing Inc.
Lewis, Kansas

Amendment Injection Point	Target Volume Per Interval	Total Target Volume	Amendment Injection Depth Interval (ft bgs)						Total Applied Volume
			15	20	25	30	35	40	
Amendment Application Volume (gal)									
IP-01	84.17	505	115	50	84	84	84	84	501
IP-02	84.17	505	84	84	84	84	84	84	505
IP-03	84.17	505	84	84	84	84	84	84	505
IP-04	84.17	505	84	84	84	84	84	84	505
IP-05	84.17	505	84	84	84	84	84	84	505
IP-06	84.17	505	84	84	84	84	84	84	505
IP-07	84.17	505	84	84	84	84	84	84	505
IP-08	84.17	505	84	84	84	84	84	168	588
IP-09	84.17	505	84	84	84	84	84	84	505
IP-10	84.17	505	84	84	84	84	84	84	505
IP-11	84.17	505	84	84	84	84	84	168	588
IP-12	84.17	505	84	84	84	84	84	84	505
IP-13	84.17	505	34	84	84	84	84	84	454
IP-14	84.17	505	84	84	120	149	84	84	605
IP-15	84.17	505	84	84	84	84	84	0	420
IP-16	84.17	505	184	84	84	84	84	84	604
IP-17	84.17	505	84	84	84	84	168	0	505
IP-18	84.17	505	84	84	84	84	204	0	540
IP-19	84.17	505	134	84	84	84	84	84	554
IP-20	84.17	505	84	84	84	84	84	168	588
IP-21	84.17	505	84	84	84	84	84	84	505
IP-22	84.17	505	84	84	84	84	84	84	505
IP-23	84.17	505	84	84	84	84	168	0	505
IP-24	84.17	505	84	84	84	84	84	84	505
Total Target Volume:		**12,120**	**Total Applied Volume:**						**12,512**

Notes:

- ft bgs = feet below ground surface; gal = gallons.
- Amendment fluid was mixed at a ratio of 10 gallons of calcium polysulfide to 75 gallons of dilution water.
- Gray highlighted cells indicate that the amendment application exceeded the target application volume; yellow highlighted cells indicate that the target volume was not achieved.
- Applied volumes are rounded to the nearest gallon to reflect the accuracy of field measurement.

Table 2

CPS Reapplication Amendment Delivery Details
Cross Manufacturing Inc.
Lewis, Kansas

Amendment Delivery Interval (ft bgs)	Target Volume Per Interval (gal)	Amendment Injection Point									
		RIP-01	RIP-02	RIP-03	RIP-04	RIP-05	RIP-06	RIP-07	RIP-08	RIP-09	RIP-10
		Amendment Application Volume (gal)									
6	8.4	--	--	--	--	--	--	8.4	8.4	8.4	8.4
7	8.4	--	--	--	--	--	--	8.4	8.4	8.4	8.4
8	8.4	--	--	--	--	--	--	8.4	8.4	8.4	8.4
9	8.4	--	--	--	--	--	--	8.4	8.4	8.4	8.4
10	8.4	--	--	--	--	--	--	8.4	8.4	8.4	8.4
11	8.4	--	--	--	--	--	--	8.4	8.4	8.4	8.4
12	8.4	--	--	--	--	--	--	8.4	8.4	8.4	8.4
13	8.4	--	--	--	--	--	--	8.4	8.4	8.4	8.4
14	8.4	--	--	--	--	--	--	8.4	8.4	8.4	8.4
15	8.4	8.4	8.4	8.4	--	--	--	8.4	2	8.4	8.4
16	8.4	8.4	8.4	8.4	--	--	--	8.4	1	8.4	8.4
17	8.4	8.4	8.4	8.4	--	--	--	8.4	22.2	8.4	8.4
18	8.4	8.4	8.4	8.4	--	--	--	8.4	--	8.4	8.4
19	8.4	25.2	8.4	25.2	--	--	--	8.4	--	8.4	8.4
20	8.4	25.2	8.4	25.2	--	--	--	8.4	--	8.4	8.4
21	8.4	25.2	8.4	25.2	--	--	--	8.4	33.6	8.4	8.4
22	8.4	25.2	8.4	25.2	--	--	--	8.4	8.4	8.4	8.4
23	8.4	8.4	8.4	8.4	--	--	--	8.4	8.4	8.4	8.4
24	8.4	8.4	8.4	8.4	--	--	--	8.4	8.4	8.4	8.4
25	8.4	--	--	--	8.4	8.4	8.4	8.4	--	--	--
26	8.4	--	--	--	8.4	8.4	8.4	8.4	--	--	--
27	8.4	--	--	--	8.4	8.4	8.4	8.4	--	--	--
28	8.4	--	--	--	8.4	8.4	8.4	8.4	--	--	--
29	8.4	--	--	--	8.4	25.2	25.2	8.4	--	--	--
30	8.4	--	--	--	8.4	25.2	25.2	8.4	--	--	--
31	8.4	--	--	--	8.4	25.2	25.2	8.4	--	--	--
32	8.4	--	--	--	8.4	25.2	25.2	8.4	--	--	--
33	8.4	--	--	--	8.4	25.2	25.2	8.4	--	--	--
34	8.4	--	--	--	8.4	8.4	8.4	16.8	--	--	--
Subtotal:		**151.2**	**84**	**151.2**	**84**	**168**	**168**	**252**	**159.6**	**159.6**	**159.6**
Total Target Volume:	**243.6**								**Total Application Volume:**		**1,537**

Notes:

- ft bgs = feet below ground surface; gal = gallons.
- Amendment was mixed at a ratio of 5.7 gallons of calcium polysulfide to 2.7 gallons of dilution water.
- Gray highlighted cells indicate that the amendment application exceeded the target application volume; yellow highlighted cells indicate that the target volume was not achieved.

Table 3

Infiltration Gallery Amendment Delivery Details
Cross Manufacturing Inc.
Lewis, Kansas

Infiltration Gallery	Dilution Water to CPS Ratio (gal per gal)	Target Volume (gal)	Applied Volume (gal)
October 2014 Gallery Application			
DPL Gallery	3.4	8,758	8,758
Shallow Gallery	2.7	2,685	2,685
Subtotal:	--	11,443	11,443
May 2015 Gallery Application			
DPL Gallery	2.1	2,300	2,093
Shallow Gallery	2.7	500	360
Subtotal:	--	2,800	2,453
		Total Application Volume:	**13,896**

Notes:

- gal = gallons; gal per gal = gallons per gallon.

Table 4

Performance Monitoring Soil Sampling Results - Chromium
Cross Mnaufacturing, Inc.
Lewis, Kansas

Sample ID:	RSK VALUES		PSB-01				
Sample Depth (ft):			3-4.2	10-11	20-21	30-31	37.5-39
Sample Date:	Residential	Non-Residential	01/06/15	01/06/15	01/06/15	01/06/15	01/06/15
Metals (mg/kg)							
Chromium (total)	**33.6**	**111**	164	65.9	129	95.3	74.5
Chromium (III)	**117,000**	**3,060,000**	164	65.9	19	95.3	61.8
Chromium (VI)	**33.6**	**111**	11.5 U	2.2 U	110	2.1 U	12.7
CRVI Percentage			0 %	0 %	85 %	0 %	17 %

Sample ID:	RSK VALUES		PSB-02						
Sample Depth (ft):			3-4	10-11	20-21	DUPLICATE	30-31.5	30-31.5	42-43
Sample Date:	Residential	Non-Residential	01/06/15	01/06/15	01/06/15	01/06/15	01/06/15	06/09/15	01/06/15
Metals (mg/kg)									
Chromium (total)	**33.6**	**111**	13.4	10.4	46.1	9.5	316 J	286 J	11.7
Chromium (III)	**117,000**	**3,060,000**	13.4	10.4	46.1	ND	121	286	11.7
Chromium (VI)	**33.6**	**111**	2.4 U	10.9 U	2.1 U	11.2	**195**	2.1 U	2 U
CRVI Percentage			0 %	0 %	0 %	100 %	62 %	0 %	0 %

Sample ID:	RSK VALUES		PSB-03					
Sample Depth (ft):			3-4	10-11	20-21	20-21	30-31	40-41
Sample Date:	Residential	Non-Residential	01/06/15	01/06/15	01/06/15	06/09/15	01/06/15	01/06/15
Metals (mg/kg)								
Chromium (total)	**33.6**	**111**	64	9	183	61.1 J	2.7	1.9
Chromium (III)	**117,000**	**3,060,000**	64	9	55	61.1	2.7	1.9
Chromium (VI)	**33.6**	**111**	2.3 U	2.2 U	**128**	2.1 U	2 U	2.1 U
CRVI Percentage			0 %	0 %	70 %	0 %	0 %	0 %

Sample ID:	RSK VALUES		PSB-04				
Sample Depth (ft):			6-7	10-11.2	20-21	30-31	40-41
Sample Date:	Residential	Non-Residential	01/07/15	01/07/15	01/07/15	01/07/15	01/07/15
Metals (mg/kg)							
Chromium (total)	**33.6**	**111**	858	55.7	30.8	9.8	42.7
Chromium (III)	**117,000**	**3,060,000**	848.3	55.7	ND	7.3	40.4
Chromium (VI)	**33.6**	**111**	9.7	2.2 UJ	32.7	2.5	2.3
CRVI Percentage			1 %	0 %	100 %	26 %	5 %

Table 4

Performance Monitoring Soil Sampling Results - Chromium
Cross Mnaufacturing, Inc.
Lewis, Kansas

Sample ID:	RSK VALUES		PSB-05						
Sample Depth (ft):			6-7	6-7	10-11	20-21	20-21	30-31	40-41.5
Sample Date:	Residential	Non-Residential	01/07/15	06/09/15	01/07/15	01/07/15	06/09/15	01/07/15	01/07/15
Metals (mg/kg)									
Chromium (total)	**33.6**	**111**	648	232 J	229	259	104 J	43.9	22.9
Chromium (III)	**117,000**	**3,060,000**	334	232	172.1	5	104	18.5	14.3
Chromium (VI)	**33.6**	**111**	**314**	4.6 U	**56.9**	**254**	4.3 U*	25.4	8.6
CRVI Percentage			48 %	0 %	25 %	98 %	0 %	58 %	38 %

Sample ID:	RSK VALUES		PSB-06					
Sample Depth (ft):			5.8-6.8	10-11.5	20-21	DUPLICATE	30-31	40-41
Sample Date:	Residential	Non-Residential	01/06/15	01/06/15	01/06/15	01/06/15	01/06/15	01/06/15
Metals (mg/kg)								
Chromium (total)	**33.6**	**111**	99.3	9.1	7.1	3.2	3.6	1.4
Chromium (III)	**117,000**	**3,060,000**	99.3	9.1	7.1	3.2	3.6	1.4
Chromium (VI)	**33.6**	**111**	5.1 U	2.2 UJ	2.1 U	4.2 U	2.1 U	2 U
CRVI Percentage			0 %	0 %	0 %	0 %	0 %	0 %

Notes:

- Values in bold exceed the residential RSK values. Values in bold and shaded exceed both the residential and non-residential RSK values. RSK values based on KDHE Tier 2 Risk-based Summary Table and KDHE e-mail correspondence.
- ft = feet; J = estimated result; mg/kg = milligrams per kilogram, ND = not detected, RSK = Risk-based Standards, U = not detected.
- Values for trivalent chromium (Chromium III) were calculated by subtracting results for hexavalent chromium (Chromium VI) from results for total chromium. In cases where hexavalent chromium is reported as not detected, all chromium is shown as trivalent chromium. In cases where the hexavalent chromium result is greater than the reported result for total chromium, trivalent chromium is shown as not detected.
- The non-detect result from the PSB-05/20-21 sample collected in June 2015 was qualified with an "R" (rejected) during data validation, based on a review of the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) analysis performed on the sample. During the MS/MSD procedure, a known quantity of chromium (VI) was introduced to replicates of the sample (i.e., the MS and MSD), and the spiked replicates were analyzed with the non-spiked samples. Hexavalent chromium was not detected in the MS or MSD above laboratory reporting limits. As a result, the percent chromium (VI) recovery relative to the amount of chromium (VI) spiked was below the acceptable range and per data validation protocol the data was flagged as rejected.

  The recovery from the matrix was likely due to reduction of the chromium (VI) spike to chromium (III), which is not detectable by the chromium (VI) analytical method, by residual calcium polysulfide within the matrix of the soil sample. Other QA/QC data, such as Lab Control Sample analysis, demonstrate that the laboratory's instruments were performing within acceptable quality assurance/quality control parameters. As such, the results area considered accurate and are suitable for use.

Table 5

Monitoring Well Construction
Cross Manufacturing, Inc.
Lewis, Kansas

Well ID	Installation Company	Installation Date	Well Location X	Well Location Y	Ground Elevation (ft AMSL)	TOC Elevation (ft AMSL)	Total Depth (ft)	Screened Interval Elevation (ft AMSL)		(ft AMSL)	Well Diameter (in)
MW-01	Terracon	8/16/2012	1095813.91	1776497.12	2143.52	2143.02	54.10	2098.92	-	2088.92	1
MW-02	Terracon	8/16/2012	1095872.75	1776521.29	2143.48	2142.99	54.20	2098.79	-	2088.79	1
MW-03	Terracon	8/16/2012	1095852.47	1776556.02	2143.59	2143.26	54.05	2099.21	-	2089.21	1
MW-04	WSP	8/7/2013	1095901.37	1776466.14	2143.64	2143.32	55.28	2098.04	-	2088.04	2

Notes:

- AMSL = above mean sea level; ft = feet; in = inches; TOC = Top of PVC well casing.
- All measurements recorded to nearest 0.01 foot. All wells were surveyed August 7, 2013 by Garber Surveying Service relative to the NAD83 Kansas State Plane Datum.

Table 6

Groundwater Elevation Results
Cross Manufacturing, Inc.
Lewis, Kansas

Well ID:	MW-01			MW-02			MW-03			MW-04		
	TOC Elevation (ft AMSL)	DTW (ft)	GW Elevation (ft AMSL)	TOC Elevation (ft AMSL)	DTW (ft)	GW Elevation (ft AMSL)	TOC Elevation (ft AMSL)	DTW (ft)	GW Elevation (ft AMSL)	TOC Elevation (ft AMSL)	DTW (ft)	GW Elevation (ft AMSL)
Date												
8/8/2013	2143.02	49.16	2093.86	2142.99	49.28	2093.71	2143.26	49.51	2093.75	2143.32	49.58	2093.74
1/6/2015	2143.02	50.46	2092.56	2142.99	50.56	2092.43	2143.26	50.81	2092.45	2143.32	50.89	2092.43
6/9/2015	2143.02	50.51	2092.51	2142.99	50.56	2092.43	2143.26	50.84	2092.42	2143.32	50.93	2092.39
9/24/2015	2143.02	50.89	2092.13	2142.99	50.95	2092.04	2143.26	51.22	2092.04	2143.32	51.34	2091.98

Notes:

- AMSL = above mean sea level; DTW = depth to water; ft = feet; TOC = Top of PVC well casing.
- All measurements recorded to nearest 0.01 foot. All wells were surveyed August 7, 2013 by Garber Surveying Service.
- The January 2015 water levels at MW-02, MW-03, and MW-04 were measured on January 7.

Table 7

Groundwater Purge Results
Cross Manufacturing, Inc.
Lewis, Kansas

Well: Sample Date:	DTW (ft)	DTB (ft)	Calculated Well Volume (gal)	Well Volume (gal)	Turbidity (NTU)	TDS (ppm)	ORP (mV)	pH (s.u.)	Cond. (µS/cm)	Temperature (°C)
MW-01										
				1	3,000	559.4	195	7.34	796.2	19.10
August 8, 2013	49.16	54.10	0.20	2	160.1	560.5	173	7.34	800.1	18.50
				3	12.7	578.8	163	7.34	822.2	19.00
				1	>1,000	-	143	7.71	587.0	19.04
January 6, 2015	50.46	53.15	0.11	2	>1,000	-	234	7.74	583.0	19.08
				3	>1,000	-	290	7.78	578.0	18.53
				1	>1,000	706.1	235	7.04	719.9	19.80
June 9, 2015	50.51	53.15	0.11	2	>1,000	486.6	234	7.04	713.9	18.80
				3	>1,000	489.3	234	7.01	715.2	18.60
				1	>1,000	507.3	198	7.74	722.4	18.50
September 24, 2015	50.89	53.15	0.09	2	>1,000	505.6	202	7.66	721.8	18.20
				3	>1,000	505.3	210	7.71	718.7	17.90
MW-02										
				1	3,000	1078.0	198	8.52	1494.0	19.60
August 8, 2013	49.28	54.20	0.20	2	1,540	509.1	154	6.79	727.5	18.40
				3	79	701.1	152	7.07	700.8	18.00
				1	>1,000	-	202	8.16	886.0	15.42
January 7, 2015	50.56	54.25	0.15	2	>1,000	-	158	8.05	925.0	16.06
				3	>1,000	-	164	7.93	971.0	15.68
				1	>1,000	837.4	-61	7.55	1187.0	20.50
June 9, 2015	50.56	54.25	0.15	2	>1,000	761.3	-64	6.75	1083.0	19.20
				3	>1,000	738.3	-64	6.71	1066.0	19.60
				1	>1,000	856.1	-40	7.57	1190.0	19.10
September 24, 2015	50.95	53.15	0.09	2	>1,000	852.6	-15	7.19	1181.0	19.40
				3	>1,000	850.2	-46	7.24	1187.0	18.60
MW-03										
				1	2,539	550.7	209	7.70	795.5	19.00
August 8, 2013	49.51	54.05	0.19	2	3,000	537.5	185	7.11	800.0	18.90
				3	81	516.5	170	7.18	744.3	18.20
				1	>1,000	-	352	7.87	645.0	18.56
January 8, 2015	50.81	54.10	0.13	2	>1,000	-	212	7.92	634.0	18.14
				3	>1,000	-	239	7.82	637.0	18.02
				1	>1,000	578.3	182	6.82	839.1	20.90
June 9, 2015	50.84	54.10	0.13	2	>1,000	551.3	178	7.17	801.6	19.40
				3	>1,000	551.7	185	7.09	803.8	19.90
				1	15	574.1	198	7.38	812.6	19.90
September 24, 2015	51.22	53.15	0.08	2	>1,000	541.4	177	7.45	769.3	19.30
				3	>1,000	540.7	174	7.44	761.8	19.30

Table 7

Groundwater Purge Results
Cross Manufacturing, Inc.
Lewis, Kansas

Well: Sample Date:	DTW (ft)	DTB (ft)	Calculated Well Volume (gal)	Well Volume (gal)	Turbidity (NTU)	TDS (ppm)	ORP (mV)	pH (s.u.)	Cond. (µS/cm)	Temperature (°C)
MW-04										
				1	12.1	554.1	165	7.53	790.4	18.30
August 8, 2013	49.58	55.28	0.93	2	12.6	555.7	169	7.35	787.1	17.70
				3	8.1	555.1	169	7.27	788.4	17.30
				1	>1,000	-	254	7.84	583.0	16.97
January 7, 2015	50.89	55.30	0.72	2	963	-	357	7.89	589.0	16.82
				3	1,000	-	261	7.87	582.0	17.04
				1	>1,000	520.5	221	7.31	703.3	21.40
June 9, 2015	50.93	55.30	0.71	2	614	537.6	221	7.30	757.6	19.60
				3	521	543.1	221	7.31	788.8	18.70
				1	22	527.2	227	8.43	748.3	18.20
September 24, 2015	51.34	53.15	0.30	2	>1,000	531.5	233	8.40	754.1	17.60
				3	>1,000	530.8	235	8.40	752.8	17.30

Notes:

- ft = feet; gal = gallons; NTU = nephelometric turbidity unit; ppm = parts per million; mV = millivolts; s.u. = standard unit; µS/cm = microSiemens per centimeter; °C = degrees Celsius.
- The MW-03 water level was recorded on January 7, 2015; sample purging and collecting was performed on January 8, 2015.

Appendix A – Waste Management

Bureau of Waste Management
Curtis State Office Building
1000 SW Jackson, Suite 320
Topeka, KS 66612-1366

phone: 785-296-1600
fax: 785-296-8909
email: bwmweb@kdheks.gov
www.kdheks.gov/waste

Robert Moser, MD, Secretary.

Kansas
Department of Health & Environment

Sam Brownback, Governor

November 6, 2014

Mr. Raymond Law
Cross Manufacturing, Inc.
100 James H. Cross Blvd.
Lewis, KS 67562

RE: Special Waste Disposal Authorization Number 14-1439

THIS AUTHORIZATION EXPIRES May 6, 2015.

Dear Mr. Law:

We have considered your request for disposal of five (5) tons of IDW soil from Cross Manufacturing, Inc., 100 James H. Cross Blvd., Lewis, KS. (Analysis provided)

Based solely on the analysis provided, the waste is not a characteristic hazardous waste with respect to the constituents tested. As stated in K.A.R.28-31-261, it is the responsibility of the generator to determine whether or not a waste is a hazardous waste by either knowledge of process or by proper testing by a K.D.H.E. certified lab. If there are questions as to the status of this waste, the department suggests the facility contact the Kansas Department of Health and Environment at telephone 620-225-0596. **If Cross Manufacturing, Inc. is confident the material for disposal is not a hazardous waste for any characteristic or listed constituent not included in the testing, the following applies.**

Approval is given to dispose of this waste at the Ford County landfill, operating under Kansas Permit 0718, provided the following conditions are met:

1. Approval to deliver the waste must be obtained from the landfill operator prior to transporting the waste to the landfill. The final decision on whether to accept or reject the waste rests with the landfill operator. Please contact Sevena Koehn, Office Manager, telephone 620-225-5288, to obtain approval. If the landfill operator refuses to accept this waste, you should contact us to determine alternate disposal options.

2. The waste must be transported separately to the landfill and be identified to the operator upon delivery.

3. Kansas Administrative Regulation 28-29-108(r) (12) and (13) requires solid waste disposal facilities to maintain a log of commercial or industrial wastes received such as sludges, barreled wastes, and special wastes. The log must indicate the source and quantity of waste and the disposal location thereof. The special waste authorization number should be used as identification when entering the shipment into the log.

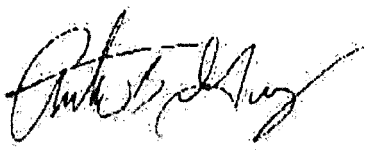
4. This approval is valid for disposal of the waste described and in the amount shown above. If additional shipments are required, you must contact us to receive another disposal authorization.

5. Operating standards as defined by K.A.R. 28-29-108(k) prohibit the disposal of liquid waste. "Liquid waste" means any waste material that is determined to contain "free liquids" as defined by method 9095A, revision 1, paint filter liquids test, as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Pub. No. SW-846 dated December 1996. **For purposes of this disposal authorization, all waste for disposal must be able to pass the "paint filter test".**

6. Any change in the process producing this waste, any change in the materials used in producing this waste or any other change to this waste stream requires that a new Special Waste Disposal Authorization be obtained prior to disposal.

If you have any questions, feel free to contact me at 785-296-0681.

Sincerely,



Tony Guy
Environmental Scientist
Special Waste Coordinator
KDHE/Bureau of Waste Management

ABG

C Sevena Koehn
e-file

Requester phone: 620-338-6066

Special Waste Disposal Request

Kansas Department of Health and Environment

Bureau of Waste Management
Waste Reduction, Compliance and Enforcement Section
1000 SW Jackson, Suite 320, Topeka, Kansas 66612-1366

You may FAX this form to: 785- 296-8909 or 785-296-8721

Please type or clearly print - See page 2 for instructions

I. REQUESTER INFORMATION (*This is where the Disposal Authorization letter will be sent.*)

Name: Cross Manufacturing, Inc.

Address: 100 James H Cross Boulevard

City: Lewis State: Kansas Zip Code: 67552

Contact Person: Raymond Law Telephone Number: 620-324-5525

E-Mail Address, if applicable: raymond.law@crossmfg.com Fax Number: 620-324-5737

II. POINT/LOCATION OF GENERATION INFORMATION *(only if different from the information in Section I above)*

Name:

Address:

City: State: Zip Code:

Contact Person: Telephone Number:

III. WASTE INFORMATION - *Use back of form if additional space is required*

Waste Description: Non hazardous soil

Process Producing Waste: Investigative Derived Waste

Physical Characteristics of Waste: Dark black soil, no odor

Quantity for Disposal: 5 tons (Please Select One) ○ Lbs. ◉ Tons ○ Cubic Yards ○ Containers/Drums ○ Bags

Frequency (Select One): ◉ One Time ○ Week ○ Month ○ Year

Laboratory Analyses Attached: ◉ Yes ○ No Material Safety Data Sheets (MSDS) Attached: ○ Yes ○ No

Renewal of Previous Authorization: Previous Authorization No: Date Issued:

IV. DISPOSAL INFORMATION

Landfill Proposed for Disposal: Ford County Landfill 13049 110 Road Dodge City, Kansas 67801

Solid Waste Transfer Station Proposed:

V. CERTIFICATION

I hereby certify that I am a d uly authorized representative of the generator identified above. I further certify that, to the best of my knowledge, the following items are true:

1. The waste identified for disposal is not a hazardous waste as defined by K.A.R. 28-31-261.
2. All analytical analyses provided are from a Kansas Department of Health and Environment (KDHE) certified laboratory and are representative of the waste identified for disposal.
3. All information provided in any attached profile, re-certification, or other document completed by the authorized representative accurately characterizes the waste.
4. If this is a renewal, the materials and processes that generate the waste have not changed since the last disposal authorization indicated above, and the information previously provided to KDHE is still valid.

Raymond Law
Signature

Raymond Law - EH & S Corporate Coordinator
Printed Name

11/05/2014
Date

Form sw600-specialwaste.pdf

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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

August 22, 2013

Dave Carstons
WSP Environment & Energy
300 Trade Center, Suite 4690
Woburn, MA 01801

RE: Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Dear Dave Carstons:
Enclosed are the analytical results for sample(s) received by the laboratory on August 08, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sherri Rosenstangle

Sherri Rosenstangle

sherri.rosenstangle@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150682001	**WC080713-WT**	Water	08/07/13 08:00	08/08/13 22:50
60150682002	**WC080713-SL**	Solid	08/07/13 08:00	08/08/13 22:50

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SAMPLE ANALYTE COUNT

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150682001	**WC080713-WT**	EPA 6010	JGP	7
		EPA 7470	TJT	1
		SM 4500-H+B	JML	1
60150682002	**WC080713-SL**	EPA 6010	JGP	7
		EPA 7470	TJT	1
		EPA 9045	DJR	1

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ANALYTICAL RESULTS

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Sample: WC080713-WT **Lab ID: 60150682001** Collected: 08/07/13 08:00 Received: 08/08/13 22:50 Matrix: Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 08/20/13 00:00								
Arsenic	ND	mg/L	0.50	5	1	08/20/13 14:00	08/21/13 10:15	7440-38-2	
Barium	ND	mg/L	2.5	100	1	08/20/13 14:00	08/21/13 10:15	7440-39-3	
Cadmium	ND	mg/L	0.050	1	1	08/20/13 14:00	08/21/13 10:15	7440-43-9	
Chromium	ND	mg/L	0.10	5	1	08/20/13 14:00	08/21/13 10:15	7440-47-3	
Lead	ND	mg/L	0.50	5	1	08/20/13 14:00	08/21/13 10:15	7439-92-1	
Selenium	ND	mg/L	0.50	1	1	08/20/13 14:00	08/21/13 10:15	7782-49-2	
Silver	ND	mg/L	0.10	5	1	08/20/13 14:00	08/21/13 10:15	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 08/20/13 00:00								
Mercury	ND	mg/L	0.0020	.2	1	08/21/13 12:15	08/21/13 15:48	7439-97-6	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	0.10		1		08/09/13 15:00		H6

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ANALYTICAL RESULTS

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Sample: WC080713-SL **Lab ID: 60150682002** Collected: 08/07/13 08:00 Received: 08/08/13 22:50 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 08/20/13 00:00								
Arsenic	ND	mg/L	0.50	5	1	08/20/13 14:00	08/21/13 10:18	7440-38-2	
Barium	ND	mg/L	2.5	100	1	08/20/13 14:00	08/21/13 10:18	7440-39-3	
Cadmium	ND	mg/L	0.050	1	1	08/20/13 14:00	08/21/13 10:18	7440-43-9	
Chromium	ND	mg/L	0.10	5	1	08/20/13 14:00	08/21/13 10:18	7440-47-3	
Lead	ND	mg/L	0.50	5	1	08/20/13 14:00	08/21/13 10:18	7439-92-1	
Selenium	ND	mg/L	0.50	1	1	08/20/13 14:00	08/21/13 10:18	7782-49-2	
Silver	ND	mg/L	0.10	5	1	08/20/13 14:00	08/21/13 10:18	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 08/20/13 00:00								
Mercury	ND	mg/L	0.0020	.2	1	08/21/13 12:15	08/21/13 15:50	7439-97-6	
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**6.9**	Std. Units	0.10		1		08/20/13 13:50		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

QC Batch: MERP/7622 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 60150682001, 60150682002

METHOD BLANK: 1239337 Matrix: Water
Associated Lab Samples: 60150682001, 60150682002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	08/21/13 15:43	

LABORATORY CONTROL SAMPLE: 1239338

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.005	0.0049	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239339 1239340

Parameter	Units	60151175001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.015	.015	.0016J	.0014J	10	9	75-125		20	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

QC Batch: MPRP/23906
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET TCLP
Associated Lab Samples: 60150682001, 60150682002

METHOD BLANK: 1238819
Matrix: Water
Associated Lab Samples: 60150682001, 60150682002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.50	08/21/13 10:11	
Barium	mg/L	ND	2.5	08/21/13 10:11	
Cadmium	mg/L	ND	0.050	08/21/13 10:11	
Chromium	mg/L	ND	0.10	08/21/13 10:11	
Lead	mg/L	ND	0.50	08/21/13 10:11	
Selenium	mg/L	ND	0.50	08/21/13 10:11	
Silver	mg/L	ND	0.10	08/21/13 10:11	

LABORATORY CONTROL SAMPLE: 1238820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	1	0.94	94	80-120	
Barium	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	1	0.96	96	80-120	
Chromium	mg/L	1	0.99	99	80-120	
Lead	mg/L	1	1.0	100	80-120	
Selenium	mg/L	1	0.93	93	80-120	
Silver	mg/L	.5	0.48	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1238821 1238822

Parameter	Units	60151175001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	10.2	10.1	101	100	75-125	1	20	
Barium	mg/L	9.5	10	10	21.1	20.8	116	113	75-125	1	20	
Cadmium	mg/L	ND	10	10	10.2	10.1	101	101	75-125	1	20	
Chromium	mg/L	ND	10	10	9.9	9.8	98	98	75-125	0	20	
Lead	mg/L	ND	10	10	9.3	9.2	93	92	75-125	0	20	
Selenium	mg/L	ND	10	10	9.7	9.7	97	97	75-125	0	20	
Silver	mg/L	ND	5	5	5.3	5.2	105	104	75-125	1	20	

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QUALITY CONTROL DATA

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

QC Batch: WET/42809
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60150682001

SAMPLE DUPLICATE: 1234046

Parameter	Units	60150688001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	10.1	10.0	0	5	H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

QC Batch: WET/42970
QC Batch Method: EPA 9045
Analysis Method: EPA 9045
Analysis Description: 9045 pH
Associated Lab Samples: 60150682002

SAMPLE DUPLICATE: 1238942

Parameter	Units	60150905001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.0	0	3	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150682001	**WC080713-WT**	EPA 3010	MPRP/23906	EPA 6010	ICP/18719
60150682002	**WC080713-SL**	EPA 3010	MPRP/23906	EPA 6010	ICP/18719
60150682001	**WC080713-WT**	EPA 7470	MERP/7622	EPA 7470	MERC/7579
60150682002	**WC080713-SL**	EPA 7470	MERP/7622	EPA 7470	MERC/7579
60150682001	**WC080713-WT**	SM 4500-H+B	WET/42809		
60150682002	**WC080713-SL**	EPA 9045	WET/42970		

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Sample Condition Upon Receipt

WO#: 60150682

60150682

Client Name: WSP Env. & Energy

Optional
Proj Due Date:
Proj Name:

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☑ exp

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194 **Type of Ice:** Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.3

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 8/9/13 (S)

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	6. ph
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WT / SL		13.
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes ☑No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☑N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
		16
Project sampled in USDA Regulated Area:	☐Yes ☑No ☐N/A	17. List State: MA

Client Notification/ Resolution: Copy COC to Client? (Y) / N Field Data Required? Y / (N)

Person Contacted: _____ Date/Time: _____

Comments/ Resolution _____

Project Manager Review: SHR Date 8.9.13

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	WSP Environment & Energy	Report To:	Dave Carstens	Attention:	Accounts Payable
Address:	300 Trade Center, Suite 4690	Copy To:	Matt Burns	Company Name:	WSP Environment & Energy
	Woburn, MA 01801			Address:	
Email To:	dave.carstens@wspgroup.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	(781) 933-7340 Fax: (781) 933-7369	Project Name:	Cross Manufacturing, Inc	Pace Project Manager:	Sherri Rosenstangle
Requested Due Date/TAT:	STANDARD	Project Number:	00036483/03	Pace Profile #:	6986.1

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: KS

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	Requested Analysis Filtered (Y/N): pH	TCLP Metals	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	WC080713-WT	WT	C	8/7/13	0800				2	X									X	X		BP2U, BP3U 60150682
2	WC080713-SL	SL	C	8/7/13	0800				2	X									X	X		2406, WG4U, WG4U
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	WSP	8/8/13	1210	Pace/ISL	8/8	1210				
				E Brackett / Pace	8/8	2250	1.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: David Carstens

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 8/8/13

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

NH Concrete

Load 3

FORD COUNTY LANDFILL

100 Gunsmoke
Dodge City, KS 67801
(620) 225-5286

DRIVER COPY

RECEIPT DOCUMENT NUMBER

43222277

Bill To:

000680 NORTHEND DISPOSAL
PO BOX 428
DODGE CITY KS 67801

Hauler:

000680 NORTHEND DISPOSAL
PO BOX 428
DODGE CITY KS 67801

Date	Entry Time	Operator	Exit Time	Operator	Gross Weight	Tare Weight	Net Weight
11/10/2014	07:00		07:16		(36200 LB)	(34160 LB)	(2040 LB)
00224413	Scale 01		Scale 01		Scale 01 (18.10 T)	Scale 01 (17.08 T)	(1.02 T)

Vehicle No.	Type	Plate	Transaction Type
NE416	Rolloff 1		Normal

Quantity	WC	Description/Origin	Units	Unit Price	Amount
1.0200	1000	COND-SOIL FORD COUNTY ALL ORIGINS	TON 100.00%		

20 D&R

I hereby certify that the information on this form is true to the best of my knowledge.

DRIVER NAME

PRINT: _____ SIGNATURE: OK

Document Total

No more Bales in Lewis Remediation Services Lewis

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. IDW-001 | 2. Page 1 of 1

3. Generator's Name and Mailing Address
Cross Manufacturing
100 James H. Cross Blvd.
Lewis, KS 67552 (620) 324-5525

4. Generator's Phone ( )

5. Transporter 1 Company Name: Rietland Disposal Services | 6. US EPA ID Number

A. State Transporter's ID 620-227-3371

B. Transporter 1 Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
Ford County Landfill
13049 110 Road – Dodge City, KS 67801 | 10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone 620-225-5288

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-Hazardous Soil From Investigative Derived Waste	1	RO	1-2	Tons
b.				
c.				
d.				

GENERATOR

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
KS SWDA No. 14-1139
This Authorization Expires – July 2015

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.
On behalf of Cross Manufacturing

Printed/Typed Name: Raymond Law EHS Compliance Coordinator | Signature | Date: Month 11 Day 07 Year 14

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name | Signature | Date: Month Day Year

NON-HAZARDOUS WASTE

letter 2wo

Bureau of Waste Management
Curtis State Office Building
1000 SW Jackson, Suite 320
Topeka, KS 66612-1366

Phone: 785-296-1600
Fax: 785-296-8909
bwmweb@kdheks.gov
www.kdheks.gov/waste

Susan Mosier, MD, Secretary

Department of Health & Environment

Sam Brownback, Governor

November 20, 2015

Mr. Butch Holum
Remediation Services, Inc.
Box 587
Independence, KS 67301

RE: Special Waste Disposal Authorization Number 15-1622

THIS AUTHORIZATION EXPIRES May 20, 2016.

Dear Mr. Holum:

We have considered your request for disposal of one (1) drum of IDW soil from Cross Manufacturing, 100 James H. Cross Blvd., Lewis, KS. (Analysis provided)

Based solely on the analysis provided, the waste is not a characteristic hazardous waste with respect to the constituents tested. As stated in K.A.R.28-31-261, it is the responsibility of the generator to determine whether or not a waste is a hazardous waste by either knowledge of process or by proper testing by a K.D.H.E. certified lab. If there are questions as to the status of this waste, the department suggests the facility contact the Kansas Department of Health and Environment at telephone 316-337-6020. **If Remediation Services, Inc. is confident the material for disposal is not a hazardous waste for any characteristic or listed constituent not included in the testing, the following applies.**

Approval is given to dispose of this waste at the Plumb Thicket landfill, operating under Kansas Permit 0842, provided the following conditions are met:

1. Approval to deliver the waste must be obtained from the landfill operator prior to transporting the waste to the landfill. The final decision on whether to accept or reject the waste rests with the landfill operator. Please contact Shad Pletcher, Site Manager, telephone 620-896-2229, to obtain approval. If the landfill operator refuses to accept this waste, you should contact us to determine alternate disposal options.

2. The waste must be transported separately to the landfill and be identified to the operator upon delivery.

3. Kansas Administrative Regulation 28-29-108(r) (12) and (13) requires solid waste disposal facilities to maintain a log of commercial or industrial wastes received such as sludges, barreled wastes, and special wastes. The log must indicate the source and quantity of waste and the disposal location thereof. The special waste authorization number should be used as identification when entering the shipment into the log.

4. This approval is valid for disposal of the waste described and in the amount shown above. If additional shipments are required, you must contact us to receive another disposal authorization.

5. Operating standards as defined by K.A.R. 28-29-108(k) prohibit the disposal of liquid waste. "Liquid waste" means any waste material that is determined to contain "free liquids" as defined by method 9095A, revision 1, paint filter liquids test, as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Pub. No. SW-846 dated December 1996. **For purposes of this disposal authorization, all waste for disposal must be able to pass the "paint filter test".**

6. Any change in the process producing this waste, any change in the materials used in producing this waste or any other change to this waste stream requires that a new Special Waste Disposal Authorization be obtained prior to disposal.

If you have any questions, feel free to contact me at 785-296-0681.

Sincerely,

Tony Guy
Environmental Scientist
Special Waste Coordinator
KDHE/Bureau of Waste Management

ABG

C Shad Pletcher
e-file

Requester phone: 316-331-1200

SPECIAL WASTE APPROVAL
(This Page for OFFICE USE ONLY)

FOR OFFICE USE ONLY	
APPROVAL NUMBER:	PT15172
EXPIRATION DATE:	05/20/2016
APPROVED BY:	AWS

H. ENVIRONMENTAL COMPLIANCE SUPERVISOR DECISION

1. ☒ Acceptable ☐ Not Acceptable Reason IDW soil; 1 drum; Cross Manufacturing (remediation services); 15-1622; lab

2. Name: Aaron W Smith	3. Date: 12/01/2015
4. Signature: Aaron W Smith	5. Phone: (303) 867-5513

I. INSTRUCTIONS/HANDLING PROCEDURES

This Section is to be completed by BOTH the Environmental Compliance Supervisor and the Facility Manager.

1. Disposal Method(s): ☒ Landfill ☐ Solidification ☐ Approved ADC ☐ Bioremediation ☐ Other:

2. Review and approval of waste is based upon a submitted documentation from generator/customer. Approval is granted subject to the enforcement of the following conditions. Failure to comply may result in rejection of the wastes.

A. Customer/Generator shall receive a copy of this sheet upon approval and shall conform to all instructions/limitations noted herein.
B. Loads may be randomly inspected upon receipt at the landfill to ensure wastes conform to description on Application.
C. This material must be properly contained, bagged, or covered prior to and during shipment and disposal.
D. The customer must contact the respective landfill to schedule the waste shipment 24 hours prior to delivery or alternative arrangements agreed upon by the facility management.

3. The conditions marked below apply to this waste stream.

APPROVAL CONDITION(S):

☐ BLANKET APPROVAL: The manifest accompanying each load of waste shall denote the specific waste generation address/location(s) for that load.

☐ CONDITIONAL APPROVAL: This is a conditional approval/extension. Upon receipt of additional analyses, this approval may be extended up to three (3) years from the original approval date. SPECIFIC CONDITION:

WASTE CONDITION(S):

☐ ABSORBENT MATERIALS: Absorbent material (pads, booms, diapers, socks, soils, etc.) must not be supersaturated so as to release free liquids on handling. Wastes that would not pass a paint filter test must be solidified prior to placement in the landfill.

☐ ASBESTOS CONTAINING MATERIAL (ACM): ☐ Friable ☐ Non-Friable

☐ CARE UNLOADING: Maintain integrity of container/packaging.

☐ FREE LIQUIDS/SLUDGE: Free liquids are prohibited from landfill disposal. Wastes containing free liquids must be solidified and able to pass a paint filter test prior to placement at active face.

☐ OTHER:

LANDFILL SPECIAL HANDLING PROCEDURES:

☐ DISPOSAL LOCATION RESTRICTION: Dispose at least ___ feet from edge of slope or boundary.

☐ DUST: Materials may become airborne. Use appropriate control measures to prevent the material from becoming airborne.

☐ IRRITANT DUST: Materials may be dusty and are likely to cause irritation to skin and/or eyes. Use appropriate dust control measures and PPE as needed to prevent airborne dust and/or employee exposure. See MSDS for additional information.

☐ HOT: Potential Hot Load. Isolate from combustible materials. ☐ See MSDS for proper handling procedures:

☐ ODOR: Bury immediately upon arrival. ☐ ADDITIONAL HANDLING INSTRUCTIONS:

☐ SLUDGE: Potential traction issue on work face.

☐ SPECIAL BURIAL REQUIREMENTS: Immediately cover waste ☐ MSW ☐ Dirt prior to compaction.

☐ SURVEY REQUIREMENT: Materials must be surveyed in or indicated on a grid.

Special Waste Disposal Request

Kansas Department of Health and Environment

Bureau of Waste Management
Waste Reduction, Compliance and Enforcement Section
1000 SW Jackson, Suite 320, Topeka, Kansas 66612-1366

You may FAX this form to: 785- 296-8909 or 785-296-8721

Please type or clearly print - See page 2 for instructions

I. REQUESTER INFORMATION (***This is where the Disposal Authorization letter will be sent.***)

Name: Remediation Services, Inc.

Address: P.O. Box 587

City: Independence State: Kansas Zip Code: 67301

Contact Person: Butch Holum Telephone Number: (620) 331-1200

E-Mail Address, if applicable: bholum@rsi-ks,com Fax Number: (620) 331-6216

II. POINT/LOCATION OF GENERATION INFORMATION *(only if different from the information in Section I above)*

Name: Cross Manufacturing, Inc.

Address: 100 James Cross Boulevard

City: Lewis State: Kansas Zip Code: 67552

Contact Person: Raymond Law Telephone Number: (620) 324-5525

III. WASTE INFORMATION - *Use back of form if additional space is required*

Waste Description: Non hazardous contaminated soil

Process Producing Waste: IDW

Physical Characteristics of Waste: Black

Quantity for Disposal: 1 (Please Select One) ○ Lbs. ○ Tons ○ Cubic Yards ◉ Containers/Drums ○ Bags

Frequency (Select One): ◉ One Time ○ Week ○ Month ○ Year

Laboratory Analyses Attached: ◉ Yes ○ No Material Safety Data Sheets (MSDS) Attached: ○ Yes ◉ No

Renewal of Previous Authorization: Previous Authorization No: N/A Date Issued: N/A

IV. DISPOSAL INFORMATION

Landfill Proposed for Disposal: Plumb Thicket Landfill 440 NE 150th Road Harper, Kansas 67058

Solid Waste Transfer Station Proposed: N/A

V. CERTIFICATION

I hereby certify that I am a d uly authorized representative of the generator identified above. I further certify that, to the best of my knowledge, the following items are true:

1. The waste identified for disposal is not a hazardous waste as defined by K.A.R. 28-31-261.
2. All analytical analyses provided are from a Kansas Department of Health and Environment (KDHE) certified laboratory and are representative of the waste identified for disposal.
3. All information provided in any attached profile, re-certification, or other document completed by the authorized representative accurately characterizes the waste.
4. If this is a renewal, the materials and processes that generate the waste have not changed since the last disposal authorization indicated above, and the information previously provided to KDHE is still valid.

Raymond Law
Signature

Raymond Law - EH&S Corporate Coordinator
Printed Name

November 13, 2015
Date

Form sw600-specialwaste.pdf

ALS Environmental

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

November 05, 2014

Grant Sherwwood
Remediation Services, Inc
2735 South 10th Street
Independence, KS 67301

Work Order: **HS14101239**

Laboratory Results for: **Cross Manufacturing**

Dear Grant,

ALS Environmental received 1 sample(s) on Oct 29, 2014 for the analysis presented in the following report.

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

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

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

Sincerely,

Generated By: Jumoke.Lawal
Bernadette A. Fini
Project Manager

Client: Remediation Services, Inc
Project: Cross Manufacturing
Work Order: HS14101239

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS14101239-01	21332-Soil-01	Soil		28-Oct-2014 08:00	29-Oct-2014 09:17	☐

Client: Remediation Services, Inc **CASE NARRATIVE**
Project: Cross Manufacturing
Work Order: HS14101239

Work Order Comments

- Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier. The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 °C.
- The analyses for Reactive Cyanide, Reactive Sulfide and Flashpoint were subcontracted to ALS Environmental in Holland, MI.

GCMS Semivolatiles by Method SW1311/8270

Batch ID: 87509

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW1311/8260B

Batch ID: R244064

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW7470

Batch ID: 87521

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW1311/6020

Batch ID: 87502a

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9045B

Batch ID: R244116

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Remediation Services, Inc
Project: Cross Manufacturing
Sample ID: 21332-Soil-01
Collection Date: 28-Oct-2014 08:00

ANALYTICAL REPORT
WorkOrder:HS14101239
Lab ID:HS14101239-01
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP VOLATILES	**Method:SW1311/8260B**		Leache:SW1311 / 30-Oct-2014	Prep:SW1311 / 30-Oct-2014		Analyst: PC
1,1-Dichloroethene	ND		100	ug/L	20	31-Oct-2014 21:16
1,2-Dichloroethane	ND		100	ug/L	20	31-Oct-2014 21:16
1,4-Dichlorobenzene	ND		100	ug/L	20	31-Oct-2014 21:16
2-Butanone	ND		200	ug/L	20	31-Oct-2014 21:16
Benzene	ND		100	ug/L	20	31-Oct-2014 21:16
Carbon tetrachloride	ND		100	ug/L	20	31-Oct-2014 21:16
Chlorobenzene	ND		100	ug/L	20	31-Oct-2014 21:16
Chloroform	ND		100	ug/L	20	31-Oct-2014 21:16
Tetrachloroethene	ND		100	ug/L	20	31-Oct-2014 21:16
Trichloroethene	ND		100	ug/L	20	31-Oct-2014 21:16
Vinyl chloride	ND		40	ug/L	20	31-Oct-2014 21:16
Surr: 1,2-Dichloroethane-d4	*94.4*		*70-125*	*%REC*	*20*	*31-Oct-2014 21:16*
Surr: 4-Bromofluorobenzene	*104*		*72-125*	*%REC*	*20*	*31-Oct-2014 21:16*
Surr: Dibromofluoromethane	*98.1*		*71-125*	*%REC*	*20*	*31-Oct-2014 21:16*
Surr: Toluene-d8	*105*		*75-125*	*%REC*	*20*	*31-Oct-2014 21:16*
TCLP SEMIVOLATILES	**Method:SW1311/8270**		Leache:SW1311 / 30-Oct-2014	Prep:SW3510 / 31-Oct-2014		Analyst: GEY
2,4,5-Trichlorophenol	ND		5.0	ug/L	1	31-Oct-2014 19:10
2,4,6-Trichlorophenol	ND		5.0	ug/L	1	31-Oct-2014 19:10
2,4-Dinitrotoluene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Cresols, Total	ND		15	ug/L	1	31-Oct-2014 19:10
Hexachlorobenzene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Hexachlorobutadiene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Hexachloroethane	ND		5.0	ug/L	1	31-Oct-2014 19:10
Nitrobenzene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Pentachlorophenol	ND		5.0	ug/L	1	31-Oct-2014 19:10
Pyridine	ND		5.0	ug/L	1	31-Oct-2014 19:10
Surr: 2,4,6-Tribromophenol	*57.4*		*39-153*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: 2-Fluorobiphenyl	*61.9*		*40-147*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: 2-Fluorophenol	*60.9*		*21-110*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: 4-Terphenyl-d14	*77.6*		*39-141*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: Nitrobenzene-d5	*63.8*		*37-140*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: Phenol-d6	*65.0*		*11-110*	*%REC*	*1*	*31-Oct-2014 19:10*

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

Client: Remediation Services, Inc
Project: Cross Manufacturing
Sample ID: 21332-Soil-01
Collection Date: 28-Oct-2014 08:00

ANALYTICAL REPORT
WorkOrder:HS14101239
Lab ID:HS14101239-01
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP METALS BY SW6020A		**Method:SW1311/6020**	Leache:SW1311 / 30-Oct-2014			Analyst: RPM
Antimony	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Arsenic	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Barium	**0.728**		**0.200**	**mg/L**	1	03-Nov-2014 15:30
Beryllium	ND		0.0200	mg/L	1	03-Nov-2014 15:30
Cadmium	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Chromium	**0.400**		**0.0500**	**mg/L**	1	03-Nov-2014 15:30
Lead	**3.17**		**0.0500**	**mg/L**	1	03-Nov-2014 15:30
Nickel	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Selenium	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Silver	ND		0.0500	mg/L	1	03-Nov-2014 15:30
TCLP MERCURY BY SW7470A		**Method:SW7470**	Leache:SW1311 / 30-Oct-2014	Prep:SW7470 / 31-Oct-2014		Analyst: OFO
Mercury	ND		0.000200	mg/L	1	31-Oct-2014 16:44
PH SOIL BY SW9045D		**Method:SW9045B**				Analyst: JHD
pH	**9.75**	H	**0.100**	**pH Units**	1	03-Nov-2014 14:30
Temp Deg C @pH	**22.2**	H	**0**	**°C**	1	03-Nov-2014 14:30
REACTIVE CYANIDE		**Method:SW7.3.3.2**				Analyst: JML
Reactive Cyanide	ND		100	mg/Kg	1	04-Nov-2014 16:00
REACTIVE SULFIDE		**Method:SW7.3.4.2**				Analyst: JML
Reactive Sulfide	ND		100	mg/Kg	1	04-Nov-2014 16:00
SUBCONTRACT ANALYSIS - FLASHPOINT		**Method:NA**				Analyst: JML
Subcontract Analysis	See Attached				1	05-Nov-2014 09:03

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

Client: Remediation Services, Inc
Project: Cross Manufacturing
WorkOrder: HS14101239

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 87502a	**Test Name :** TCLP METALS BY SW6020A			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 16:00	31 Oct 2014 12:34	03 Nov 2014 15:30	1
Batch ID 87509	**Test Name :** TCLP SEMIVOLATILES			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 17:42	31 Oct 2014 14:19	31 Oct 2014 19:10	1
Batch ID 87521	**Test Name :** TCLP MERCURY BY SW7470A			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 15:53	31 Oct 2014 11:05	31 Oct 2014 16:44	1
Batch ID R244064	**Test Name :** TCLP VOLATILES			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 19:21	30 Oct 2014 19:21	31 Oct 2014 21:16	20
Batch ID R244116	**Test Name :** PH SOIL BY SW9045D			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			03 Nov 2014 14:30	1
Batch ID R244229	**Test Name :** REACTIVE SULFIDE			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			05 Nov 2014 09:03	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			05 Nov 2014 09:03	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			05 Nov 2014 09:03	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

MBLK Sample ID: **MBLKT1-87502** Units: **mg/L** Analysis Date: **03-Nov-2014 14:34**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075276** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.0500								
Arsenic	ND	0.0500								
Barium	ND	0.200								
Beryllium	ND	0.0200								
Cadmium	ND	0.0500								
Chromium	ND	0.0500								
Lead	ND	0.0500								
Nickel	ND	0.0500								
Selenium	ND	0.0500								
Silver	ND	0.0500								

MBLK Sample ID: **MBLK-87502** Units: **mg/L** Analysis Date: **03-Nov-2014 14:37**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075277** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.00500								
Arsenic	ND	0.00500								
Barium	ND	0.0200								
Beryllium	ND	0.00200								
Cadmium	ND	0.00500								
Chromium	ND	0.00500								
Lead	ND	0.00500								
Nickel	ND	0.00500								
Selenium	ND	0.00500								
Silver	ND	0.00500								

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument:** ICPMS05 **Method:** SW1311/6020

LCS Sample ID: **MLCS-87502** Units: **mg/L** Analysis Date: **03-Nov-2014 14:40**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075278** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.04977	0.00500	0.05	0	99.5	80 - 120				
Arsenic	0.04833	0.00500	0.05	0	96.7	80 - 120				
Barium	0.04779	0.0200	0.05	0	95.6	80 - 120				
Beryllium	0.04972	0.00200	0.05	0	99.4	80 - 120				
Cadmium	0.04931	0.00500	0.05	0	98.6	80 - 120				
Chromium	0.04863	0.00500	0.05	0	97.3	80 - 120				
Lead	0.04878	0.00500	0.05	0	97.6	80 - 120				
Nickel	0.05053	0.00500	0.05	0	101	80 - 120				
Selenium	0.04697	0.00500	0.05	0	93.9	80 - 120				
Silver	0.05027	0.00500	0.05	0	101	80 - 120				

MS Sample ID: **HS14101234-01MS** Units: **mg/L** Analysis Date: **03-Nov-2014 14:58**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075285** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.4885	0.0500	0.5	0	97.7	80 - 120				
Arsenic	0.4818	0.0500	0.5	0	96.4	80 - 120				
Barium	0.5984	0.200	0.5	0.1207	95.5	80 - 120				
Beryllium	0.5281	0.0200	0.5	0	106	80 - 120				
Cadmium	0.4902	0.0500	0.5	0	98.0	80 - 120				
Chromium	0.4664	0.0500	0.5	0	93.3	80 - 120				
Lead	0.4906	0.0500	0.5	0	98.1	80 - 120				
Nickel	0.507	0.0500	0.5	0.0119	99.0	80 - 120				
Selenium	0.4957	0.0500	0.5	0	99.1	80 - 120				
Silver	0.4829	0.0500	0.5	0	96.6	80 - 120				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

MSD Sample ID: **HS14101234-01MSD** Units: **mg/L** Analysis Date: **03-Nov-2014 15:01**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075286** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.4984	0.0500	0.5	0	99.7	80 - 120	0.4885	2	20	
Arsenic	0.4942	0.0500	0.5	0	98.8	80 - 120	0.4818	2.53	20	
Barium	0.5986	0.200	0.5	0.1207	95.6	80 - 120	0.5984	0.0251	20	
Beryllium	0.5051	0.0200	0.5	0	101	80 - 120	0.5281	4.45	20	
Cadmium	0.4866	0.0500	0.5	0	97.3	80 - 120	0.4902	0.735	20	
Chromium	0.4929	0.0500	0.5	0	98.6	80 - 120	0.4664	5.53	20	
Lead	0.494	0.0500	0.5	0	98.8	80 - 120	0.4906	0.687	20	
Nickel	0.4977	0.0500	0.5	0.0119	97.2	80 - 120	0.507	1.85	20	
Selenium	0.4988	0.0500	0.5	0	99.8	80 - 120	0.4957	0.619	20	
Silver	0.471	0.0500	0.5	0	94.2	80 - 120	0.4829	2.51	20	

DUP Sample ID: **HS14101234-01DUP** Units: **mg/L** Analysis Date: **03-Nov-2014 14:47**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075281** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.0500					0.00142	0	25	
Arsenic	ND	0.0500					0.0041	0	25	
Barium	ND	0.200					0.1207	0	25	
Beryllium	ND	0.0200					-0.00005	0	25	
Cadmium	ND	0.0500					0.00023	0	25	
Chromium	ND	0.0500					-0.00013	0	25	
Lead	ND	0.0500					0.00302	0	25	
Nickel	ND	0.0500					0.0119	0	25	
Selenium	ND	0.0500					0.00376	0	25	
Silver	ND	0.0500					0.00022	0	25	

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

PDS Sample ID: **HS14101234-01BS** Units: **mg/L** Analysis Date: **03-Nov-2014 15:03**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075287** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	1.011	0.0500	1	0	101	75 - 125				
Arsenic	1.015	0.0500	1	0	101	75 - 125				
Barium	1.121	0.200	1	0.1207	100	75 - 125				
Beryllium	1.006	0.0200	1	0	101	75 - 125				
Cadmium	1.003	0.0500	1	0	100	75 - 125				
Chromium	1.001	0.0500	1	0	100	75 - 125				
Lead	1.021	0.0500	1	0	102	75 - 125				
Nickel	1.027	0.0500	1	0.0119	101	75 - 125				
Selenium	1.036	0.0500	1	0	104	75 - 125				
Silver	0.9445	0.0500	1	0	94.5	75 - 125				

SD Sample ID: **HS14101234-01 DIL SX** Units: **mg/L** Analysis Date: **03-Nov-2014 14:55**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075284** PrepDate: **31-Oct-2014** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.250					0.00142	0	10	
Arsenic	ND	0.250					0.0041	0	10	
Barium	0.1208	1.00					0.1207	0	10	J
Beryllium	ND	0.100					-0.00005	0	10	
Cadmium	ND	0.250					0.00023	0	10	
Chromium	ND	0.250					-0.00013	0	10	
Lead	ND	0.250					0.00302	0	10	
Nickel	ND	0.250					0.0119	0	10	
Selenium	ND	0.250					0.00376	0	10	
Silver	ND	0.250					0.00022	0	10	

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87521 **Instrument: HG03** **Method: SW7470**

MBLK Sample ID: **GBLKW4-103114** Units: **mg/L** Analysis Date: **31-Oct-2014 16:41**
Client ID: Run ID: **HG03_243930** SeqNo: **3072879** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.000200								

MBLK Sample ID: **GBLKT1-103014** Units: **mg/L** Analysis Date: **31-Oct-2014 16:51**
Client ID: Run ID: **HG03_243930** SeqNo: **3072885** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.000200								

LCS Sample ID: **GLCSW4-103114** Units: **mg/L** Analysis Date: **31-Oct-2014 16:42**
Client ID: Run ID: **HG03_243930** SeqNo: **3072880** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00517	0.000200	0.005	0	103	80 - 120				

MS Sample ID: **HS14101239-01MS** Units: **mg/L** Analysis Date: **31-Oct-2014 16:48**
Client ID: **21332-Soil-01** Run ID: **HG03_243930** SeqNo: **3072883** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0051	0.000200	0.005	-0.000007	102	75 - 125				

MSD Sample ID: **HS14101239-01MSD** Units: **mg/L** Analysis Date: **31-Oct-2014 16:49**
Client ID: **21332-Soil-01** Run ID: **HG03_243930** SeqNo: **3072884** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00512	0.000200	0.005	-0.000007	103	75 - 125	0.0051	0.391	20	

DUP Sample ID: **HS14101239-01DUP** Units: **mg/L** Analysis Date: **31-Oct-2014 16:46**
Client ID: **21332-Soil-01** Run ID: **HG03_243930** SeqNo: **3072882** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.000200					-0.000007	0	20	

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

MBLK Sample ID: **MBLK-87509** Units: **ug/L** Analysis Date: **31-Oct-2014 16:34**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074319** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
Cresols, Total	ND	15								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Nitrobenzene	ND	5.0								
Pentachlorophenol	ND	5.0								
Pyridine	ND	5.0								
Surr: 2,4,6-Tribromophenol	*65.99*	*5.0*	*100*	*0*	*66.0*	*39 - 153*				
Surr: 2-Fluorobiphenyl	*65.81*	*5.0*	*100*	*0*	*65.8*	*40 - 147*				
Surr: 2-Fluorophenol	*61.21*	*5.0*	*100*	*0*	*61.2*	*21 - 110*				
Surr: 4-Terphenyl-d14	*72.26*	*5.0*	*100*	*0*	*72.3*	*39 - 141*				
Surr: Nitrobenzene-d5	*62.44*	*5.0*	*100*	*0*	*62.4*	*37 - 140*				
Surr: Phenol-d6	*64.05*	*5.0*	*100*	*0*	*64.0*	*11 - 110*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

LCS Sample ID: **LCS-87509** Units: **ug/L** Analysis Date: **31-Oct-2014 17:41**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074320** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	70.68	5.0	100	0	70.7	55 - 120				
2,4,6-Trichlorophenol	71.88	5.0	100	0	71.9	55 - 120				
2,4-Dinitrotoluene	37.28	5.0	50	0	74.6	55 - 125				
Cresols, Total	192.3	15	250	0	76.9	40 - 120				
Hexachlorobenzene	39.31	5.0	50	0	78.6	55 - 120				
Hexachlorobutadiene	37.54	5.0	50	0	75.1	55 - 120				
Hexachloroethane	34.5	5.0	50	0	69.0	55 - 120				
Nitrobenzene	32.55	5.0	50	0	65.1	55 - 120				
Pentachlorophenol	76.53	5.0	100	0	76.5	50 - 135				
Pyridine	25.11	5.0	50	0	50.2	30 - 120				
Surr: 2,4,6-Tribromophenol	*76.19*	*5.0*	*100*	*0*	*76.2*	*39 - 153*				
Surr: 2-Fluorobiphenyl	*70.02*	*5.0*	*100*	*0*	*70.0*	*40 - 147*				
Surr: 2-Fluorophenol	*73.61*	*5.0*	*100*	*0*	*73.6*	*20 - 110*				
Surr: 4-Terphenyl-d14	*75.47*	*5.0*	*100*	*0*	*75.5*	*39 - 141*				
Surr: Nitrobenzene-d5	*64.79*	*5.0*	*100*	*0*	*64.8*	*37 - 140*				
Surr: Phenol-d6	*71.85*	*5.0*	*100*	*0*	*71.9*	*11 - 110*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

LCSD Sample ID: **LCSD-87509** Units: **ug/L** Analysis Date: **31-Oct-2014 18:03**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074321** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	71.23	5.0	100	0	71.2	55 - 120	70.68	0.771	25	
2,4,6-Trichlorophenol	70.42	5.0	100	0	70.4	55 - 120	71.88	2.06	25	
2,4-Dinitrotoluene	37.11	5.0	50	0	74.2	55 - 125	37.28	0.445	25	
Cresols, Total	186.1	15	250	0	74.5	40 - 120	192.3	3.25	25	
Hexachlorobenzene	38.79	5.0	50	0	77.6	55 - 120	39.31	1.33	25	
Hexachlorobutadiene	35.51	5.0	50	0	71.0	55 - 120	37.54	5.57	25	
Hexachloroethane	33.33	5.0	50	0	66.7	55 - 120	34.5	3.45	25	
Nitrobenzene	32.93	5.0	50	0	65.9	55 - 120	32.55	1.15	25	
Pentachlorophenol	75.8	5.0	100	0	75.8	50 - 135	76.53	0.956	25	
Pyridine	25.27	5.0	50	0	50.5	30 - 120	25.11	0.627	25	
Surr: 2,4,6-Tribromophenol	*73.66*	*5.0*	*100*	*0*	*73.7*	*39 - 153*	*76.19*	*3.38*	*25*	
Surr: 2-Fluorobiphenyl	*68.72*	*5.0*	*100*	*0*	*68.7*	*40 - 147*	*70.02*	*1.87*	*25*	
Surr: 2-Fluorophenol	*72.96*	*5.0*	*100*	*0*	*73.0*	*21 - 110*	*73.61*	*0.881*	*25*	
Surr: 4-Terphenyl-d14	*73.84*	*5.0*	*100*	*0*	*73.8*	*39 - 141*	*75.47*	*2.19*	*25*	
Surr: Nitrobenzene-d5	*62.48*	*5.0*	*100*	*0*	*62.5*	*37 - 140*	*64.79*	*3.64*	*25*	
Surr: Phenol-d6	*70.39*	*5.0*	*100*	*0*	*70.4*	*11 - 110*	*71.85*	*2.06*	*25*	

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

MS Sample ID: **HS14101152-01MS** Units: **ug/L** Analysis Date: **31-Oct-2014 18:48**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074323** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	76.22	5.0	100	0	76.2	55 - 120				
2,4,6-Trichlorophenol	76.4	5.0	100	0	76.4	55 - 120				
2,4-Dinitrotoluene	37.92	5.0	50	0	75.8	55 - 125				
Cresols, Total	192	15	250	0	76.8	40 - 120				
Hexachlorobenzene	37.81	5.0	50	0	75.6	55 - 120				
Hexachlorobutadiene	34.62	5.0	50	0	69.2	55 - 120				
Hexachloroethane	34.78	5.0	50	0	69.6	55 - 120				
Nitrobenzene	34.37	5.0	50	0	68.7	55 - 120				
Pentachlorophenol	79.97	5.0	100	0	80.0	50 - 135				
Pyridine	26.22	5.0	50	0	52.4	30 - 120				
Surr: 2,4,6-Tribromophenol	*73.17*	*5.0*	*100*	*0*	*73.2*	*39 - 153*				
Surr: 2-Fluorobiphenyl	*73.77*	*5.0*	*100*	*0*	*73.8*	*40 - 147*				
Surr: 2-Fluorophenol	*59.53*	*5.0*	*100*	*0*	*59.5*	*21 - 110*				
Surr: 4-Terphenyl-d14	*69.6*	*5.0*	*100*	*0*	*69.6*	*39 - 141*				
Surr: Nitrobenzene-d5	*66.59*	*5.0*	*100*	*0*	*66.6*	*37 - 140*				
Surr: Phenol-d6	*65.41*	*5.0*	*100*	*0*	*65.4*	*11 - 110*				

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MBLK Sample ID: **VBLKW-141031** Units: **ug/L** Analysis Date: **31-Oct-2014 17:34**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074615** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
2-Butanone	ND	10								
Benzene	ND	5.0								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroform	ND	5.0								
Tetrachloroethene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl chloride	ND	2.0								
Surr: 1,2-Dichloroethane-d4	*49.44*	*5.0*	*50*	*0*	*98.9*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*49.07*	*5.0*	*50*	*0*	*98.1*	*72.4 - 125*				
Surr: Dibromofluoromethane	*49.52*	*5.0*	*50*	*0*	*99.0*	*71.2 - 125*				
Surr: Toluene-d8	*51.23*	*5.0*	*50*	*0*	*102*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MBLK Sample ID: **MBLKV1-141030** Units: **ug/L** Analysis Date: **31-Oct-2014 19:39**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074619** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	ND	100								
1,2-Dichloroethane	ND	100								
1,4-Dichlorobenzene	ND	100								
2-Butanone	ND	200								
Benzene	ND	100								
Carbon tetrachloride	ND	100								
Chlorobenzene	ND	100								
Chloroform	ND	100								
Tetrachloroethene	ND	100								
Trichloroethene	ND	100								
Vinyl chloride	ND	40								
Surr: 1,2-Dichloroethane-d4	*963.6*	*100*	*1000*	*0*	*96.4*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*963.5*	*100*	*1000*	*0*	*96.4*	*72.4 - 125*				
Surr: Dibromofluoromethane	*961.8*	*100*	*1000*	*0*	*96.2*	*71.2 - 125*				
Surr: Toluene-d8	*1023*	*100*	*1000*	*0*	*102*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

LCS Sample ID: **VLCSW-141031** Units: **ug/L** Analysis Date: **31-Oct-2014 16:22**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074614** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	55.6	5.0	50	0	111	73 - 124				
1,2-Dichloroethane	50.48	5.0	50	0	101	76 - 120				
1,4-Dichlorobenzene	53.3	5.0	50	0	107	70 - 130				
2-Butanone	110.7	10	100	0	111	70 - 130				
Benzene	50.13	5.0	50	0	100	70 - 128				
Carbon tetrachloride	51.07	5.0	50	0	102	70 - 130				
Chlorobenzene	50.4	5.0	50	0	101	72 - 127				
Chloroform	55.66	5.0	50	0	111	70 - 130				
Tetrachloroethene	49.99	5.0	50	0	100.0	70 - 130				
Trichloroethene	49.64	5.0	50	0	99.3	72 - 129				
Vinyl chloride	52.52	2.0	50	0	105	70 - 130				
Surr: 1,2-Dichloroethane-d4	*50.87*	*5.0*	*50*	*0*	*102*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*50.81*	*5.0*	*50*	*0*	*102*	*72 - 125*				
Surr: Dibromofluoromethane	*50.64*	*5.0*	*50*	*0*	*101*	*71 - 125*				
Surr: Toluene-d8	*49.59*	*5.0*	*50*	*0*	*99.2*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MS Sample ID: **HS14101248-04MS** Units: **ug/L** Analysis Date: **31-Oct-2014 18:27**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074617** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	257.4	25	250	0	103	73 - 124				
1,2-Dichloroethane	259.4	25	250	0	104	76 - 120				
1,4-Dichlorobenzene	265.3	25	250	0	106	70 - 130				
2-Butanone	471	50	500	0	94.2	70 - 130				
Benzene	252.9	25	250	0	101	70 - 128				
Carbon tetrachloride	252.2	25	250	0	101	70 - 130				
Chlorobenzene	252.9	25	250	0	101	72 - 127				
Chloroform	272.4	25	250	0	109	70 - 130				
Tetrachloroethene	518.3	25	250	271.5	98.7	70 - 130				
Trichloroethene	286.9	25	250	41.17	98.3	72 - 129				
Vinyl chloride	202.3	10	250	0	80.9	70 - 130				
Surr: 1,2-Dichloroethane-d4	*241.7*	*25*	*250*	*0*	*96.7*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*256.1*	*25*	*250*	*0*	*102*	*72 - 125*				
Surr: Dibromofluoromethane	*246*	*25*	*250*	*0*	*98.4*	*71 - 125*				
Surr: Toluene-d8	*249.7*	*25*	*250*	*0*	*99.9*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MSD Sample ID: **HS14101248-04MSD** Units: **ug/L** Analysis Date: **31-Oct-2014 18:51**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074618** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1-Dichloroethene	265.4	25	250	0	106	73 - 124	257.4	3.07	20	
1,2-Dichloroethane	263	25	250	0	105	76 - 120	259.4	1.39	20	
1,4-Dichlorobenzene	278.6	25	250	0	111	70 - 130	265.3	4.87	20	
2-Butanone	530.6	50	500	0	106	70 - 130	471	11.9	20	
Benzene	259.5	25	250	0	104	70 - 128	252.9	2.56	20	
Carbon tetrachloride	264	25	250	0	106	70 - 130	252.2	4.56	20	
Chlorobenzene	259.9	25	250	0	104	72 - 127	252.9	2.74	20	
Chloroform	279	25	250	0	112	70 - 130	272.4	2.38	20	
Tetrachloroethene	518.4	25	250	271.5	98.8	70 - 130	518.3	0.0307	20	
Trichloroethene	295.4	25	250	41.17	102	72 - 129	286.9	2.93	20	
Vinyl chloride	212	10	250	0	84.8	70 - 130	202.3	4.71	20	
Surr: 1,2-Dichloroethane-d4	*241.2*	*25*	*250*	*0*	*96.5*	*70 - 125*	*241.7*	*0.185*	*20*	
Surr: 4-Bromofluorobenzene	*255.7*	*25*	*250*	*0*	*102*	*72 - 125*	*256.1*	*0.148*	*20*	
Surr: Dibromofluoromethane	*243.9*	*25*	*250*	*0*	*97.6*	*71 - 125*	*246*	*0.861*	*20*	
Surr: Toluene-d8	*247.7*	*25*	*250*	*0*	*99.1*	*75 - 125*	*249.7*	*0.795*	*20*	

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244116 **Instrument: WetChem_HS** **Method: SW9045B**

LCS Sample ID: **LCS-244116** Units: **pH Units** Analysis Date: **03-Nov-2014 14:30**
Client ID: Run ID: **WetChem_HS_244116** SeqNo: **3075574** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.02	0.100	6	0	100	97 - 103				

DUP Sample ID: **HS14101107-01DUP** Units: **pH Units** Analysis Date: **03-Nov-2014 14:30**
Client ID: Run ID: **WetChem_HS_244116** SeqNo: **3075575** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.87	0.100					6.82	0.73	10	
Temp Deg C @pH	22.4	0					22.4	0		

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
Project: Cross Manufacturing
WorkOrder: **HS14101239**

QUALIFIERS, ACRONYMS, UNITS

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

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

Unit Reported	Description
µg/L	Micrograms per Liter
Date	
pH Units	

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	AR - 2014	27-Mar-2015
California	2919	31-Jul-2015
Dept of Defense	L2231 Rev 3-20-2014	22-Dec-2015
Illinois	003403	09-May-2015
Kansas	E-10352 8/15/2013-2014	30-Nov-2014
Kentucky	KY 2014-2015	30-Apr-2015
Louisiana	03087 2014/2015	30-Jun-2015
North Carolina	624 - 2014	31-Dec-2014
North Dakota	R-193 2025	30-Apr-2015
Oklahoma	2014-128	31-Aug-2015
Texas	T104704231-14-14	30-Apr-2015

Client: Remediation Services, Inc
Project: Cross Manufacturing
Work Order: HS14101239

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	Sub

ALS Group USA, Corp Date: 05-Nov-14

Sample Receipt Checklist

Client Name: RSI - DIRECT
Work Order: HS14101239

Date/Time Received: **29-Oct-2014 09:17**
Received by: **DES**

Checklist completed by: *Raegen Giga* eSignature 29-Oct-2014 Date
Reviewed by: *Bernadette A. Fini* eSignature 30-Oct-2014 Date

Matrices: **soil**
Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c/2.1c c/u	IR 1	
Cooler(s)/Kit(s):	23742		
Date/Time sample(s) sent to storage:	10/29/2014 17:15		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: 0 Regarding:

Comments:

Corrective Action:

ALS Environmental

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

Chain of Custody Form

Page ____ of ____

COC ID: 109530

HS14101239

Remediation Services, Inc
Cross Manufacturing

Customer Information		Project Information		ALS Project Manager:
Purchase Order		Project Name	Cross Manufacturing	
Work Order		Project Number	Cross Manufacturing	
Company Name	Remediation Services, Inc	Bill To Company	Remediation Services, Inc	
Send Report To	Dan Roth	Invoice Attn		
Address	2735 South 10th Street	Address	2735 South 10th Street	
City/State/Zip	Independence	City/State/Zip	Independence	
Phone		Phone	(620) 331-1200	
Fax	(620) 331-6216	Fax		
e-Mail Address	droth@rsi-ks.com	e-Mail Address		

A	TCLP VOC (1311/8260)
B	TCLP SVOC (1311/8270)
C	TCLP Metals (1311/7470) - RCRA 8
D	~~PCBs (8082)~~
E	RCI - Reactive Cyanide, Reactive Sulfide
F	RCI - pH, Ignitability
G	
H	
I	
J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	21332 - Soil - 01	10-28-14	08:00	Soil	None	5	✓	✓	✓		✓	✓					
2																	
3																	
4																	
5																	
6		NA	10-28-14														
7																	
8		COS															
9																	
10																	

Sampler(s) Please Print & Sign: Charles Silicco

Shipment Method:

Required Turnaround Time: (Check Box) [X] Std. 10 WK days [ ] 5 WK Days [ ] 2 WK Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by: Charles Silicco — Date: 10-28-14 — Time: 12:00pm — Received by:

Relinquished by: — Date: — Time: — Received by (Laboratory): R Cain 10/28/14 09:17

Logged by (Laboratory): — Date: — Time: — Checked by (Laboratory):

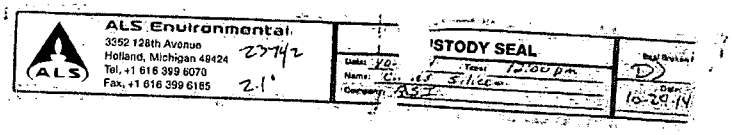
Notes:

Cooler ID: 23242 — Cooler Temp: 2.1

QC Package: (Check One Box Below)
[X] Level 2 Std QC — [ ] TRRP Chk List
[ ] Level 3 Std QC/Raw da — [ ] TRRP Level 4
[ ] Level 4 SW846/CLP
[ ] Other (EDD)

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

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


ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel, +1 616 399 6070
Fax, +1 616 399 6185
23742
2.1°
STODY SEAL
Date: 10-29-14


FedEx
8035 6168 7921
WED - 29 OCT 10:30A
PRIORITY OVERNIGHT
77099
TX-US
IAH
AB SGRA

ALS Environmental

05-Nov-2014

Bernadette Fini
ALS Environmental
10450 Stancliff Rd
Suite 210
Houston, TX 77099

Re: **HS14101239** Work Order: **14101786**

Dear Bernadette,

ALS Environmental received 1 sample on 30-Oct-2014 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 10.

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

Sincerely,

Chad Whelton

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

NELAP ACCREDITED LABORATORY

Certificate No: MN 532786

ALS Group USA, Corp

Date: 05-Nov-14

Client: ALS Environmental
Project: HS14101239
Work Order: **14101786**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
14101786-01	HS14101239-01	Soil	21332-Soil-01	10/28/2014 08:00	10/30/2014 09:30	☐

ALS Group USA, Corp

Date: 05-Nov-14

Client: ALS Environmental
Project: HS14101239
WorkOrder: **14101786**

QUALIFIERS, ACRONYMS, UNITS

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

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
°F	Degrees Fahrenheit
mg/Kg	Milligrams per Kilogram

ALS Group USA, Corp

Date: *05-Nov-14*

Client: ALS Environmental
Project: HS14101239
Sample ID: HS14101239-01
Collection Date: 10/28/2014 08:00 AM

Work Order: 14101786
Lab ID: 14101786-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, REACTIVE			**SW7.3.3.2**			Analyst: **AXL**
Cyanide, Reactive	ND		100	mg/Kg	1	11/4/2014 04:00 PM
FLASHPOINT, OPEN-CUP			**D92**			Analyst: **MB**
Flashpoint, Open-cup	**>200**			°F	1	11/4/2014 09:00 AM
SULFIDE, REACTIVE			**SW7.3.4.2**			Analyst: **AXL**
Sulfide, Reactive	ND		100	mg/Kg	1	11/4/2014 04:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Client: ALS Environmental
Work Order: 14101786
Project: HS14101239

Date: 05-Nov-14

QC BATCH REPORT

Batch ID: **R151788** Instrument ID **WETCHEM** Method: **SW7.3.4.2**

MBLK Sample ID: **MB-R151788-R151788** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_141104H** SeqNo: **3017208** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	ND	100								

LCS Sample ID: **LCS-R151788-R151788** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_141104H** SeqNo: **3017209** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	1776	100	2149	0	82.6	60-120	0			

The following samples were analyzed in this batch: 14101786-01A

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

Client: ALS Environmental
Work Order: 14101786
Project: HS14101239

QC BATCH REPORT

Batch ID: **R151789** Instrument ID **WETCHEM** Method: **SW7.3.3.2**

MBLK Sample ID: **MBLK-R151789-R151789** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_141104I** SeqNo: **3017213** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	ND	100								

LCS Sample ID: **LCS-R151789-R151789** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_141104I** SeqNo: **3017214** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	124.8	100	125	0	99.8	75-125	0			

MS Sample ID: **14101786-01A MS** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: **HS14101239-01** Run ID: **WETCHEM_141104I** SeqNo: **3017217** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	248.1	100	250	0	99.2	50-150	0			

MSD Sample ID: **14101786-01A MSD** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: **HS14101239-01** Run ID: **WETCHEM_141104I** SeqNo: **3017218** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	248.1	100	250	0	99.2	50-150	248.1	0	35	

The following samples were analyzed in this batch: 14101786-01A

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

Client: ALS Environmental
Work Order: 14101786
Project: HS14101239

QC BATCH REPORT

Batch ID: **R151802** Instrument ID **WETCHEM** Method: **D92**

LCS Sample ID: **LCS-R151802-R151802** Units: **°F** Analysis Date: **11/4/2014 09:00 AM**
Client ID: Run ID: **WETCHEM_141104N** SeqNo: **3017495** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Flashpoint, Open-cup	80	0	81	0	98.8	97-103	0			

The following samples were analyzed in this batch: 14101786-01A

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

14101786

CHAIN OF CUSTODY RECORD

ALS Environmental

Date 29 Oct 2014
COC ID 1728
Due date 05 NOV 14

Subcontractor

ALS Laboratory Group
3352 128th Ave.
Holland, MI 494249263

Phone
6163996070
Fax
6163996185

Customer Information		Project Information	
PO		Project Name	HS14101239

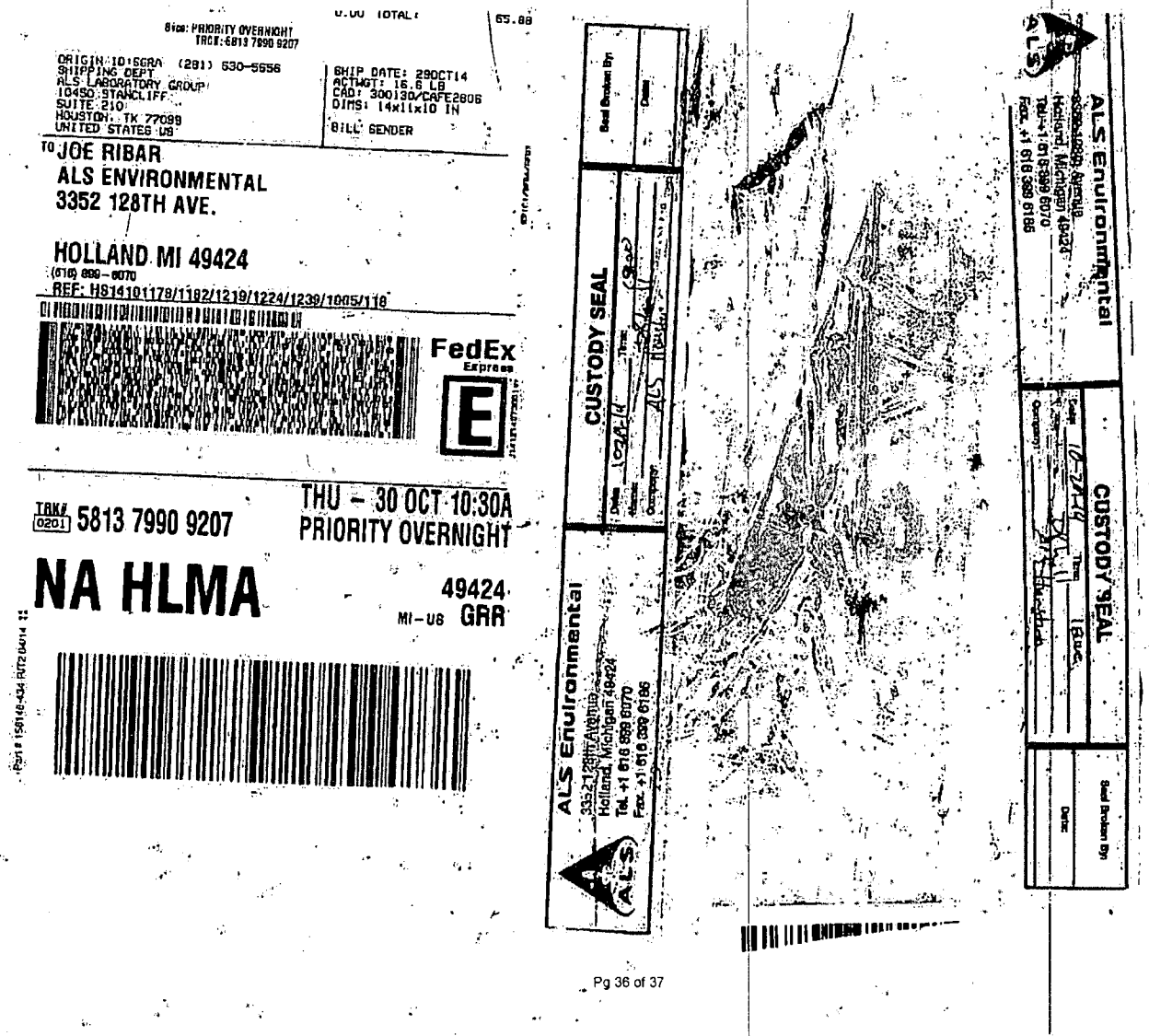
Company Name	ALS Houston	Company Name	ALS Houston
		Inv Attn	Accounts Payable
Address	10450 Stancliff Rd, Ste 210	Address	10450 Stancliff Rd, Ste 210
	Houston, TX 77099		Houston, TX 77099
Phone	281-530-5656	Phone	281-530-5656
Email1	Bernadette.fini@alsglobal.com	Email2	

Lab ID	Client Samp ID	Collection Date	Matrix	Analysis Requested
HS14101239-01	21332-Soil-01	28-Oct-14 08:00 am	Soil	RCN_S
				RS_S
				SUB_FLASHPOINT

Comments Please analyze for the above. Send report to Bernadette.fini@alsglobal.com. CC Jumoke.lawal@alsglobal.com

Relinquished by:	Date/Time:	Received by:	Date/Time:	Cooler IDs:	Report/QC Level
R Giga	10/29/14 18:00				
			10/30/14 0930		

3.8°c



Ship: PRIORITY OVERNIGHT
TRK#: 5813 7990 9207

0.00 TOTAL: 65.88

ORIGIN ID:SGRA (281) 530-5656
SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 29OCT14
ACTWGT: 16.6 LB
CAD: 3001130/CAFE2806
DIMS: 14x11x10 IN
BILL SENDER

TO JOE RIBAR
ALS ENVIRONMENTAL
3352 128TH AVE.

HOLLAND MI 49424
(616) 399-6070
REF: HS14101178/1182/1219/1224/1239/1005/110

FedEx Express

TRK# 0201 5813 7990 9207

THU - 30 OCT 10:30A
PRIORITY OVERNIGHT

NA HLMA

49424
MI-US GRR

Part # 150148-434 RITZ 04.14

CUSTODY SEAL
Date
Time
Courier
Seal Broken By
Date

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL
Date
Time
Courier
Seal Broken By
Date

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **ALS - HOUSTON** Date/Time Received: **30-Oct-14 09:30**

Work Order: **14101786** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 30-Oct-14 (Date) Reviewed by: Chad Whilton (eSignature) 30-Oct-14 (Date)

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.8 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/30/2014 4:40:41 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

Plumb Thicket Landfill
440 NE 150th Road
Harper, KS 67058
PH: 620.896.2229
FX: 620.896.2294

SPECIAL WASTE APPLICATION

FOR OFFICE USE ONLY
APPROVAL NUMBER:
EXPIRATION DATE:
APPROVED BY:

Information utilized for completion of this form must originate from an authorized representative of the generator of the waste material.
The information on this form must be **COMPLETELY FILLED OUT, TYPE WRITTEN,** and the form must be **SIGNED BY AUTHORIZED REPRESENTATIVE.**

A. PROFILE INFORMATION

1. ☒ Initial ☐ Recertification, list prior approval number(s):

2. Have there been any changes to the composition of, or process generating this waste stream that would alter the characteristics of the waste stream?
☐ YES ☒ NO (Updated analysis may be required even if no change to process or composition.)

B. GENERATOR INFORMATION

1. Generator Name: Cross Manufacturing, Inc.
2. Address: 100 James Cross Boulevard
City: Lewis | County: Edwards
State: Kansas | Zip: 67552
3. Site Location (if different):
4. Contact Name: Raymond Law
5. Phone Number: (620) 324-5525 | 6. Fax Number: (620) 324-5737
7. Email Address: raymond.law@crossmfg.com
8. State Facility ID # (if applicable):
9. State Waste Code (if applicable):

C. CUSTOMER/BILLING INFORMATION

1. Billing Name: Remediation Services, Inc.
2. Address: P.O. Box 587
City: Independence | County: Montgomery
State: Kansas | Zip: 67301
3. Contact Name: Butch Holum
4. Phone Number: (620) 331-1200 | 5. Fax Number: (620) 331-6216
6. Email Address: bholum@rsi-ks.com
7. Is there a service agreement on file? ☐ YES ☒ NO
8. Agent / Consultant:
9. Letter of Authorization: ☒ YES ☐ NO

D. TRANSPORTER/SHIPPING INFORMATION

1. Name: TBD
2. Street Address:
City: | State: | Zip:
3. Phone Number: | 4. Fax Number:
5. Contact Name:
6. EPA or State Transporter ID #:
7. Designated Landfill(s):
8. Packaging: ☐ Bulk Solids ☐ Bulk Liquids ☒ Drums ☐ Roll-Off
☐ Dump Truck ☐ Tank Truck ☐ Vacuum Box ☐ Bagged
9. Estimated Volume: 1
☐ Tons ☐ Cubic Yards ☒ Drums ☐ Gallons ☐ Other: _____
10. Shipping Frequency: _____ per: ☒ One Time Project
☐ Month ☐ Quarter ☐ Year ☐ Other: _____

E. WASTE STREAM INFORMATION

1. Common Name of Material or Waste Stream:
Non hazardous contaminated soil
2. Detailed Description of Process or How Generated (Attach additional sheet if needed):
IDW
3. Physical State at 70°F: ☒ Solid ☐ Semi-Solid ☐ Sludge
☐ Liquid ☐ Powder ☐ Other _____
4. Free Liquids: ☒ NO ☐ YES % Liquids:
5. Color: Black | 6. pH Range: 9.75
7. Odor: ☒ None ☐ Mild ☐ Significant Describe:
8. Flash Point: NA ☐ °F ☐ °C
9. Reactive: ☒ NO ☐ YES with:
10. State Required Information (if applicable):

F. NON-HAZARDOUS DETERMINATION

1. Attached Document(s) (check all that apply): ☐ Not Applicable ☐ Process Knowledge ☐ MSDS ☒ Certified Analytical Report ☐ Exempt Waste
2. If Process Knowledge, provide details:
3. If analytical data is attached, is the data derived from testing a representative sample in accordance with 40 CFR 261 and/or other applicable laws?
☒ YES ☐ NO Type of Sample: ☒ Composite ☐ Grab Analysis Provided: ALS - HS14101239-01
4. If Exempt Waste, check applicable item below: ☐ UST Corrective Action – 40 CFR 261.4(b)(10) ☐ PCB Bulk Product Waste – 40 CFR 761.62
☐ Oil & Gas E&P Waste – 40 CFR 261.4(b)(5) ☐ RCRA-Empty Containers – 40 CFR 261.7 ☐ Other (provide reference):

G. GENERATOR CERTIFICATION STATEMENT:

I hereby certify that all information contained herein is true and correct, and the material described is properly identified, classified, packaged, labeled, and prepared as indicated. I certify this waste is not hazardous or dangerous as defined by the U.S. EPA, or the state or province of origin. I certify this waste does not contain any regulated radioactive materials, that all known and suspected hazards have been disclosed, and that the waste is not a regulated hazardous waste by government or local authority, and does not contain PCB's regulated by TSCA or any other regulatory authority. I certify that all samples used for this analysis are representative of the materials described herein. I understand that all wastes may undergo inspection upon arrival at the designated facility and may be refused if the delivered material does not conform to the description herein. Notification will be provided immediately if there is a change in the composition of, or process generating this waste stream, prior to offering the waste for shipment or management.

Raymond Law - EH&S Corporate Coordinator
AUTHORIZED REPRESENTATIVE NAME/TITLE

Raymond Law
AUTHORIZED REPRESENTATIVE SIGNATURE

Cross Manufacturing, Inc.
COMPANY NAME

November 13, 2015
DATE COMPLETED

ALS Environmental

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

November 05, 2014

Grant Sherwwood
Remediation Services, Inc
2735 South 10th Street
Independence, KS 67301

Work Order: **HS14101239**

Laboratory Results for: **Cross Manufacturing**

Dear Grant,

ALS Environmental received 1 sample(s) on Oct 29, 2014 for the analysis presented in the following report.

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

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

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

Sincerely,

Generated By: Jumoke.Lawal
Bernadette A. Fini
Project Manager

Client: Remediation Services, Inc
Project: Cross Manufacturing
Work Order: HS14101239

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS14101239-01	21332-Soil-01	Soil		28-Oct-2014 08:00	29-Oct-2014 09:17	☐

Client: Remediation Services, Inc **CASE NARRATIVE**
Project: Cross Manufacturing
Work Order: HS14101239

Work Order Comments

- Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.

  The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 °C.

- The analyses for Reactive Cyanide, Reactive Sulfide and Flashpoint were subcontracted to ALS Environmental in Holland, MI.

GCMS Semivolatiles by Method SW1311/8270

Batch ID: 87509

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW1311/8260B

Batch ID: R244064

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW7470

Batch ID: 87521

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW1311/6020

Batch ID: 87502a

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9045B

Batch ID: R244116

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Remediation Services, Inc
Project: Cross Manufacturing
Sample ID: 21332-Soil-01
Collection Date: 28-Oct-2014 08:00

ANALYTICAL REPORT
WorkOrder:HS14101239
Lab ID:HS14101239-01
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP VOLATILES	**Method:SW1311/8260B**	Leache:SW1311 / 30-Oct-2014	Prep:SW1311 / 30-Oct-2014			Analyst: PC
1,1-Dichloroethene	ND		100	ug/L	20	31-Oct-2014 21:16
1,2-Dichloroethane	ND		100	ug/L	20	31-Oct-2014 21:16
1,4-Dichlorobenzene	ND		100	ug/L	20	31-Oct-2014 21:16
2-Butanone	ND		200	ug/L	20	31-Oct-2014 21:16
Benzene	ND		100	ug/L	20	31-Oct-2014 21:16
Carbon tetrachloride	ND		100	ug/L	20	31-Oct-2014 21:16
Chlorobenzene	ND		100	ug/L	20	31-Oct-2014 21:16
Chloroform	ND		100	ug/L	20	31-Oct-2014 21:16
Tetrachloroethene	ND		100	ug/L	20	31-Oct-2014 21:16
Trichloroethene	ND		100	ug/L	20	31-Oct-2014 21:16
Vinyl chloride	ND		40	ug/L	20	31-Oct-2014 21:16
Surr: 1,2-Dichloroethane-d4	*94.4*		*70-125*	*%REC*	*20*	*31-Oct-2014 21:16*
Surr: 4-Bromofluorobenzene	*104*		*72-125*	*%REC*	*20*	*31-Oct-2014 21:16*
Surr: Dibromofluoromethane	*98.1*		*71-125*	*%REC*	*20*	*31-Oct-2014 21:16*
Surr: Toluene-d8	*105*		*75-125*	*%REC*	*20*	*31-Oct-2014 21:16*
TCLP SEMIVOLATILES	**Method:SW1311/8270**	Leache:SW1311 / 30-Oct-2014	Prep:SW3510 / 31-Oct-2014			Analyst: GEY
2,4,5-Trichlorophenol	ND		5.0	ug/L	1	31-Oct-2014 19:10
2,4,6-Trichlorophenol	ND		5.0	ug/L	1	31-Oct-2014 19:10
2,4-Dinitrotoluene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Cresols, Total	ND		15	ug/L	1	31-Oct-2014 19:10
Hexachlorobenzene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Hexachlorobutadiene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Hexachloroethane	ND		5.0	ug/L	1	31-Oct-2014 19:10
Nitrobenzene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Pentachlorophenol	ND		5.0	ug/L	1	31-Oct-2014 19:10
Pyridine	ND		5.0	ug/L	1	31-Oct-2014 19:10
Surr: 2,4,6-Tribromophenol	*57.4*		*39-153*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: 2-Fluorobiphenyl	*61.9*		*40-147*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: 2-Fluorophenol	*60.9*		*21-110*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: 4-Terphenyl-d14	*77.6*		*39-141*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: Nitrobenzene-d5	*63.8*		*37-140*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: Phenol-d6	*65.0*		*11-110*	*%REC*	*1*	*31-Oct-2014 19:10*

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

Client: Remediation Services, Inc
Project: Cross Manufacturing
Sample ID: 21332-Soil-01
Collection Date: 28-Oct-2014 08:00

ANALYTICAL REPORT
WorkOrder:HS14101239
Lab ID:HS14101239-01
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP METALS BY SW6020A	**Method:SW1311/6020**		Leache:SW1311 / 30-Oct-2014			Analyst: RPM
Antimony	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Arsenic	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Barium	**0.728**		**0.200**	**mg/L**	1	03-Nov-2014 15:30
Beryllium	ND		0.0200	mg/L	1	03-Nov-2014 15:30
Cadmium	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Chromium	**0.400**		**0.0500**	**mg/L**	1	03-Nov-2014 15:30
Lead	**3.17**		**0.0500**	**mg/L**	1	03-Nov-2014 15:30
Nickel	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Selenium	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Silver	ND		0.0500	mg/L	1	03-Nov-2014 15:30
TCLP MERCURY BY SW7470A	**Method:SW7470**		Leache:SW1311 / 30-Oct-2014	Prep SW7470 / 31-Oct-2014		Analyst: OFO
Mercury	ND		0.000200	mg/L	1	31-Oct-2014 16:44
PH SOIL BY SW9045D	**Method:SW9045B**					Analyst: JHD
pH	**9.75**	H	**0.100**	**pH Units**	1	03-Nov-2014 14:30
Temp Deg C @pH	**22.2**	H	**0**	**°C**	1	03-Nov-2014 14:30
REACTIVE CYANIDE	**Method:SW7.3.3.2**					Analyst: JML
Reactive Cyanide	ND		100	mg/Kg	1	04-Nov-2014 16:00
REACTIVE SULFIDE	**Method:SW7.3.4.2**					Analyst: JML
Reactive Sulfide	ND		100	mg/Kg	1	04-Nov-2014 16:00
SUBCONTRACT ANALYSIS - FLASHPOINT	**Method:NA**					Analyst: JML
Subcontract Analysis	See Attached				1	05-Nov-2014 09:03

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

Client: Remediation Services, Inc
Project: Cross Manufacturing
WorkOrder: HS14101239

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 87502a	**Test Name :** TCLP METALS BY SW6020A			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 16:00	31 Oct 2014 12:34	03 Nov 2014 15:30	1
Batch ID 87509	**Test Name :** TCLP SEMIVOLATILES			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 17:42	31 Oct 2014 14:19	31 Oct 2014 19:10	1
Batch ID 87521	**Test Name :** TCLP MERCURY BY SW7470A			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 15:53	31 Oct 2014 11:05	31 Oct 2014 16:44	1
Batch ID R244064	**Test Name :** TCLP VOLATILES			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 19:21	30 Oct 2014 19:21	31 Oct 2014 21:16	20
Batch ID R244116	**Test Name :** PH SOIL BY SW9045D			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			03 Nov 2014 14:30	1
Batch ID R244229	**Test Name :** REACTIVE SULFIDE			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			05 Nov 2014 09:03	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			05 Nov 2014 09:03	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			05 Nov 2014 09:03	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

MBLK Sample ID: **MBLKT1-87502** Units: **mg/L** Analysis Date: **03-Nov-2014 14:34**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075276** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.0500								
Arsenic	ND	0.0500								
Barium	ND	0.200								
Beryllium	ND	0.0200								
Cadmium	ND	0.0500								
Chromium	ND	0.0500								
Lead	ND	0.0500								
Nickel	ND	0.0500								
Selenium	ND	0.0500								
Silver	ND	0.0500								

MBLK Sample ID: **MBLK-87502** Units: **mg/L** Analysis Date: **03-Nov-2014 14:37**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075277** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.00500								
Arsenic	ND	0.00500								
Barium	ND	0.0200								
Beryllium	ND	0.00200								
Cadmium	ND	0.00500								
Chromium	ND	0.00500								
Lead	ND	0.00500								
Nickel	ND	0.00500								
Selenium	ND	0.00500								
Silver	ND	0.00500								

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

LCS Sample ID: **MLCS-87502** Units: **mg/L** Analysis Date: **03-Nov-2014 14:40**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075278** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.04977	0.00500	0.05	0	99.5	80 - 120				
Arsenic	0.04833	0.00500	0.05	0	96.7	80 - 120				
Barium	0.04779	0.0200	0.05	0	95.6	80 - 120				
Beryllium	0.04972	0.00200	0.05	0	99.4	80 - 120				
Cadmium	0.04931	0.00500	0.05	0	98.6	80 - 120				
Chromium	0.04863	0.00500	0.05	0	97.3	80 - 120				
Lead	0.04878	0.00500	0.05	0	97.6	80 - 120				
Nickel	0.05053	0.00500	0.05	0	101	80 - 120				
Selenium	0.04697	0.00500	0.05	0	93.9	80 - 120				
Silver	0.05027	0.00500	0.05	0	101	80 - 120				

MS Sample ID: **HS14101234-01MS** Units: **mg/L** Analysis Date: **03-Nov-2014 14:58**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075285** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.4885	0.0500	0.5	0	97.7	80 - 120				
Arsenic	0.4818	0.0500	0.5	0	96.4	80 - 120				
Barium	0.5984	0.200	0.5	0.1207	95.5	80 - 120				
Beryllium	0.5281	0.0200	0.5	0	106	80 - 120				
Cadmium	0.4902	0.0500	0.5	0	98.0	80 - 120				
Chromium	0.4664	0.0500	0.5	0	93.3	80 - 120				
Lead	0.4906	0.0500	0.5	0	98.1	80 - 120				
Nickel	0.507	0.0500	0.5	0.0119	99.0	80 - 120				
Selenium	0.4957	0.0500	0.5	0	99.1	80 - 120				
Silver	0.4829	0.0500	0.5	0	96.6	80 - 120				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

MSD Sample ID: **HS14101234-01MSD** Units: **mg/L** Analysis Date: **03-Nov-2014 15:01**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075286** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.4984	0.0500	0.5	0	99.7	80 - 120	0.4885	2	20	
Arsenic	0.4942	0.0500	0.5	0	98.8	80 - 120	0.4818	2.53	20	
Barium	0.5986	0.200	0.5	0.1207	95.6	80 - 120	0.5984	0.0251	20	
Beryllium	0.5051	0.0200	0.5	0	101	80 - 120	0.5281	4.45	20	
Cadmium	0.4866	0.0500	0.5	0	97.3	80 - 120	0.4902	0.735	20	
Chromium	0.4929	0.0500	0.5	0	98.6	80 - 120	0.4664	5.53	20	
Lead	0.494	0.0500	0.5	0	98.8	80 - 120	0.4906	0.687	20	
Nickel	0.4977	0.0500	0.5	0.0119	97.2	80 - 120	0.507	1.85	20	
Selenium	0.4988	0.0500	0.5	0	99.8	80 - 120	0.4957	0.619	20	
Silver	0.471	0.0500	0.5	0	94.2	80 - 120	0.4829	2.51	20	

DUP Sample ID: **HS14101234-01DUP** Units: **mg/L** Analysis Date: **03-Nov-2014 14:47**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075281** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.0500					0.00142	0	25	
Arsenic	ND	0.0500					0.0041	0	25	
Barium	ND	0.200					0.1207	0	25	
Beryllium	ND	0.0200					-0.00005	0	25	
Cadmium	ND	0.0500					0.00023	0	25	
Chromium	ND	0.0500					-0.00013	0	25	
Lead	ND	0.0500					0.00302	0	25	
Nickel	ND	0.0500					0.0119	0	25	
Selenium	ND	0.0500					0.00376	0	25	
Silver	ND	0.0500					0.00022	0	25	

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

PDS Sample ID: **HS14101234-01BS** Units: **mg/L** Analysis Date: **03-Nov-2014 15:03**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075287** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	1.011	0.0500	1	0	101	75 - 125				
Arsenic	1.015	0.0500	1	0	101	75 - 125				
Barium	1.121	0.200	1	0.1207	100	75 - 125				
Beryllium	1.006	0.0200	1	0	101	75 - 125				
Cadmium	1.003	0.0500	1	0	100	75 - 125				
Chromium	1.001	0.0500	1	0	100	75 - 125				
Lead	1.021	0.0500	1	0	102	75 - 125				
Nickel	1.027	0.0500	1	0.0119	101	75 - 125				
Selenium	1.036	0.0500	1	0	104	75 - 125				
Silver	0.9445	0.0500	1	0	94.5	75 - 125				

SD Sample ID: **HS14101234-01 DIL SX** Units: **mg/L** Analysis Date: **03-Nov-2014 14:55**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075284** PrepDate: **31-Oct-2014** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.250					0.00142	0	10	
Arsenic	ND	0.250					0.0041	0	10	
Barium	0.1208	1.00					0.1207	0	10	J
Beryllium	ND	0.100					-0.00005	0	10	
Cadmium	ND	0.250					0.00023	0	10	
Chromium	ND	0.250					-0.00013	0	10	
Lead	ND	0.250					0.00302	0	10	
Nickel	ND	0.250					0.0119	0	10	
Selenium	ND	0.250					0.00376	0	10	
Silver	ND	0.250					0.00022	0	10	

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87521 **Instrument: HG03** **Method: SW7470**

MBLK Sample ID: **GBLKW4-103114** Units: **mg/L** Analysis Date: **31-Oct-2014 16:41**
Client ID: Run ID: **HG03_243930** SeqNo: **3072879** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.000200								

MBLK Sample ID: **GBLKT1-103014** Units: **mg/L** Analysis Date: **31-Oct-2014 16:51**
Client ID: Run ID: **HG03_243930** SeqNo: **3072885** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.000200								

LCS Sample ID: **GLCSW4-103114** Units: **mg/L** Analysis Date: **31-Oct-2014 16:42**
Client ID: Run ID: **HG03_243930** SeqNo: **3072880** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00517	0.000200	0.005	0	103	80 - 120				

MS Sample ID: **HS14101239-01MS** Units: **mg/L** Analysis Date: **31-Oct-2014 16:48**
Client ID: **21332-Soil-01** Run ID: **HG03_243930** SeqNo: **3072883** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0051	0.000200	0.005	-0.000007	102	75 - 125				

MSD Sample ID: **HS14101239-01MSD** Units: **mg/L** Analysis Date: **31-Oct-2014 16:49**
Client ID: **21332-Soil-01** Run ID: **HG03_243930** SeqNo: **3072884** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00512	0.000200	0.005	-0.000007	103	75 - 125	0.0051	0.391	20	

DUP Sample ID: **HS14101239-01DUP** Units: **mg/L** Analysis Date: **31-Oct-2014 16:46**
Client ID: **21332-Soil-01** Run ID: **HG03_243930** SeqNo: **3072882** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.000200					-0.000007	0	20	

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

MBLK Sample ID: **MBLK-87509** Units: **ug/L** Analysis Date: **31-Oct-2014 16:34**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074319** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
Cresols, Total	ND	15								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Nitrobenzene	ND	5.0								
Pentachlorophenol	ND	5.0								
Pyridine	ND	5.0								
Surr: 2,4,6-Tribromophenol	*65.99*	*5.0*	*100*	*0*	*66.0*	*39 - 153*				
Surr: 2-Fluorobiphenyl	*65.81*	*5.0*	*100*	*0*	*65.8*	*40 - 147*				
Surr: 2-Fluorophenol	*61.21*	*5.0*	*100*	*0*	*61.2*	*21 - 110*				
Surr: 4-Terphenyl-d14	*72.26*	*5.0*	*100*	*0*	*72.3*	*39 - 141*				
Surr: Nitrobenzene-d5	*62.44*	*5.0*	*100*	*0*	*62.4*	*37 - 140*				
Surr: Phenol-d6	*64.05*	*5.0*	*100*	*0*	*64.0*	*11 - 110*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

LCS Sample ID: **LCS-87509** Units: **ug/L** Analysis Date: **31-Oct-2014 17:41**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074320** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	70.68	5.0	100	0	70.7	55 - 120				
2,4,6-Trichlorophenol	71.88	5.0	100	0	71.9	55 - 120				
2,4-Dinitrotoluene	37.28	5.0	50	0	74.6	55 - 125				
Cresols, Total	192.3	15	250	0	76.9	40 - 120				
Hexachlorobenzene	39.31	5.0	50	0	78.6	55 - 120				
Hexachlorobutadiene	37.54	5.0	50	0	75.1	55 - 120				
Hexachloroethane	34.5	5.0	50	0	69.0	55 - 120				
Nitrobenzene	32.55	5.0	50	0	65.1	55 - 120				
Pentachlorophenol	76.53	5.0	100	0	76.5	50 - 135				
Pyridine	25.11	5.0	50	0	50.2	30 - 120				
Surr: 2,4,6-Tribromophenol	*76.19*	*5.0*	*100*	*0*	*76.2*	*39 - 153*				
Surr: 2-Fluorobiphenyl	*70.02*	*5.0*	*100*	*0*	*70.0*	*40 - 147*				
Surr: 2-Fluorophenol	*73.61*	*5.0*	*100*	*0*	*73.6*	*20 - 110*				
Surr: 4-Terphenyl-d14	*75.47*	*5.0*	*100*	*0*	*75.5*	*39 - 141*				
Surr: Nitrobenzene-d5	*64.79*	*5.0*	*100*	*0*	*64.8*	*37 - 140*				
Surr: Phenol-d6	*71.85*	*5.0*	*100*	*0*	*71.9*	*11 - 110*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

LCSD Sample ID: **LCSD-87509** Units: **ug/L** Analysis Date: **31-Oct-2014 18:03**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074321** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	71.23	5.0	100	0	71.2	55 - 120	70.68	0.771	25	
2,4,6-Trichlorophenol	70.42	5.0	100	0	70.4	55 - 120	71.88	2.06	25	
2,4-Dinitrotoluene	37.11	5.0	50	0	74.2	55 - 125	37.28	0.445	25	
Cresols, Total	186.1	15	250	0	74.5	40 - 120	192.3	3.25	25	
Hexachlorobenzene	38.79	5.0	50	0	77.6	55 - 120	39.31	1.33	25	
Hexachlorobutadiene	35.51	5.0	50	0	71.0	55 - 120	37.54	5.57	25	
Hexachloroethane	33.33	5.0	50	0	66.7	55 - 120	34.5	3.45	25	
Nitrobenzene	32.93	5.0	50	0	65.9	55 - 120	32.55	1.15	25	
Pentachlorophenol	75.8	5.0	100	0	75.8	50 - 135	76.53	0.956	25	
Pyridine	25.27	5.0	50	0	50.5	30 - 120	25.11	0.627	25	
Surr: 2,4,6-Tribromophenol	*73.66*	*5.0*	*100*	*0*	*73.7*	*39 - 153*	*76.19*	*3.38*	*25*	
Surr: 2-Fluorobiphenyl	*68.72*	*5.0*	*100*	*0*	*68.7*	*40 - 147*	*70.02*	*1.87*	*25*	
Surr: 2-Fluorophenol	*72.96*	*5.0*	*100*	*0*	*73.0*	*21 - 110*	*73.61*	*0.881*	*25*	
Surr: 4-Terphenyl-d14	*73.84*	*5.0*	*100*	*0*	*73.8*	*39 - 141*	*75.47*	*2.19*	*25*	
Surr: Nitrobenzene-d5	*62.48*	*5.0*	*100*	*0*	*62.5*	*37 - 140*	*64.79*	*3.64*	*25*	
Surr: Phenol-d6	*70.39*	*5.0*	*100*	*0*	*70.4*	*11 - 110*	*71.85*	*2.06*	*25*	

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

MS Sample ID: **HS14101152-01MS** Units: **ug/L** Analysis Date: **31-Oct-2014 18:48**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074323** PrepDate: **31-Oct-2014** DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	76.22	5.0	100	0	76.2	55 - 120				
2,4,6-Trichlorophenol	76.4	5.0	100	0	76.4	55 - 120				
2,4-Dinitrotoluene	37.92	5.0	50	0	75.8	55 - 125				
Cresols, Total	192	15	250	0	76.8	40 - 120				
Hexachlorobenzene	37.81	5.0	50	0	75.6	55 - 120				
Hexachlorobutadiene	34.62	5.0	50	0	69.2	55 - 120				
Hexachloroethane	34.78	5.0	50	0	69.6	55 - 120				
Nitrobenzene	34.37	5.0	50	0	68.7	55 - 120				
Pentachlorophenol	79.97	5.0	100	0	80.0	50 - 135				
Pyridine	26.22	5.0	50	0	52.4	30 - 120				
Surr: 2,4,6-Tribromophenol	*73.17*	*5.0*	*100*	*0*	*73.2*	*39 - 153*				
Surr: 2-Fluorobiphenyl	*73.77*	*5.0*	*100*	*0*	*73.8*	*40 - 147*				
Surr: 2-Fluorophenol	*59.53*	*5.0*	*100*	*0*	*59.5*	*21 - 110*				
Surr: 4-Terphenyl-d14	*69.6*	*5.0*	*100*	*0*	*69.6*	*39 - 141*				
Surr: Nitrobenzene-d5	*66.59*	*5.0*	*100*	*0*	*66.6*	*37 - 140*				
Surr: Phenol-d6	*65.41*	*5.0*	*100*	*0*	*65.4*	*11 - 110*				

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MBLK Sample ID: **VBLKW-141031** Units: **ug/L** Analysis Date: **31-Oct-2014 17:34**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074615** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
2-Butanone	ND	10								
Benzene	ND	5.0								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroform	ND	5.0								
Tetrachloroethene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl chloride	ND	2.0								
Surr: 1,2-Dichloroethane-d4	*49.44*	*5.0*	*50*	*0*	*98.9*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*49.07*	*5.0*	*50*	*0*	*98.1*	*72.4 - 125*				
Surr: Dibromofluoromethane	*49.52*	*5.0*	*50*	*0*	*99.0*	*71.2 - 125*				
Surr: Toluene-d8	*51.23*	*5.0*	*50*	*0*	*102*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MBLK Sample ID: **MBLKV1-141030** Units: **ug/L** Analysis Date: **31-Oct-2014 19:39**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074619** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	ND	100								
1,2-Dichloroethane	ND	100								
1,4-Dichlorobenzene	ND	100								
2-Butanone	ND	200								
Benzene	ND	100								
Carbon tetrachloride	ND	100								
Chlorobenzene	ND	100								
Chloroform	ND	100								
Tetrachloroethene	ND	100								
Trichloroethene	ND	100								
Vinyl chloride	ND	40								
Surr: 1,2-Dichloroethane-d4	*963.6*	*100*	*1000*	*0*	*96.4*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*963.5*	*100*	*1000*	*0*	*96.4*	*72.4 - 125*				
Surr: Dibromofluoromethane	*961.8*	*100*	*1000*	*0*	*96.2*	*71.2 - 125*				
Surr: Toluene-d8	*1023*	*100*	*1000*	*0*	*102*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

LCS Sample ID: **VLCSW-141031** Units: **ug/L** Analysis Date: **31-Oct-2014 16:22**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074614** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	55.6	5.0	50	0	111	73 - 124				
1,2-Dichloroethane	50.48	5.0	50	0	101	76 - 120				
1,4-Dichlorobenzene	53.3	5.0	50	0	107	70 - 130				
2-Butanone	110.7	10	100	0	111	70 - 130				
Benzene	50.13	5.0	50	0	100	70 - 128				
Carbon tetrachloride	51.07	5.0	50	0	102	70 - 130				
Chlorobenzene	50.4	5.0	50	0	101	72 - 127				
Chloroform	55.66	5.0	50	0	111	70 - 130				
Tetrachloroethene	49.99	5.0	50	0	100.0	70 - 130				
Trichloroethene	49.64	5.0	50	0	99.3	72 - 129				
Vinyl chloride	52.52	2.0	50	0	105	70 - 130				
Surr: 1,2-Dichloroethane-d4	*50.87*	*5.0*	*50*	*0*	*102*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*50.81*	*5.0*	*50*	*0*	*102*	*72 - 125*				
Surr: Dibromofluoromethane	*50.64*	*5.0*	*50*	*0*	*101*	*71 - 125*				
Surr: Toluene-d8	*49.59*	*5.0*	*50*	*0*	*99.2*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MS Sample ID: **HS14101248-04MS** Units: **ug/L** Analysis Date: **31-Oct-2014 18:27**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074617** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	257.4	25	250	0	103	73 - 124				
1,2-Dichloroethane	259.4	25	250	0	104	76 - 120				
1,4-Dichlorobenzene	265.3	25	250	0	106	70 - 130				
2-Butanone	471	50	500	0	94.2	70 - 130				
Benzene	252.9	25	250	0	101	70 - 128				
Carbon tetrachloride	252.2	25	250	0	101	70 - 130				
Chlorobenzene	252.9	25	250	0	101	72 - 127				
Chloroform	272.4	25	250	0	109	70 - 130				
Tetrachloroethene	518.3	25	250	271.5	98.7	70 - 130				
Trichloroethene	286.9	25	250	41.17	98.3	72 - 129				
Vinyl chloride	202.3	10	250	0	80.9	70 - 130				
Surr: 1,2-Dichloroethane-d4	*241.7*	*25*	*250*	*0*	*96.7*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*256.1*	*25*	*250*	*0*	*102*	*72 - 125*				
Surr: Dibromofluoromethane	*246*	*25*	*250*	*0*	*98.4*	*71 - 125*				
Surr: Toluene-d8	*249.7*	*25*	*250*	*0*	*99.9*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MSD Sample ID: **HS14101248-04MSD** Units: **ug/L** Analysis Date: **31-Oct-2014 18:51**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074618** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1-Dichloroethene	265.4	25	250	0	106	73 - 124	257.4	3.07	20	
1,2-Dichloroethane	263	25	250	0	105	76 - 120	259.4	1.39	20	
1,4-Dichlorobenzene	278.6	25	250	0	111	70 - 130	265.3	4.87	20	
2-Butanone	530.6	50	500	0	106	70 - 130	471	11.9	20	
Benzene	259.5	25	250	0	104	70 - 128	252.9	2.56	20	
Carbon tetrachloride	264	25	250	0	106	70 - 130	252.2	4.56	20	
Chlorobenzene	259.9	25	250	0	104	72 - 127	252.9	2.74	20	
Chloroform	279	25	250	0	112	70 - 130	272.4	2.38	20	
Tetrachloroethene	518.4	25	250	271.5	98.8	70 - 130	518.3	0.0307	20	
Trichloroethene	295.4	25	250	41.17	102	72 - 129	286.9	2.93	20	
Vinyl chloride	212	10	250	0	84.8	70 - 130	202.3	4.71	20	
Surr: 1,2-Dichloroethane-d4	*241.2*	*25*	*250*	*0*	*96.5*	*70 - 125*	*241.7*	*0.185*	*20*	
Surr: 4-Bromofluorobenzene	*255.7*	*25*	*250*	*0*	*102*	*72 - 125*	*256.1*	*0.148*	*20*	
Surr: Dibromofluoromethane	*243.9*	*25*	*250*	*0*	*97.6*	*71 - 125*	*246*	*0.861*	*20*	
Surr: Toluene-d8	*247.7*	*25*	*250*	*0*	*99.1*	*75 - 125*	*249.7*	*0.795*	*20*	

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244116 **Instrument: WetChem_HS** **Method: SW9045B**

LCS Sample ID: **LCS-244116** Units: **pH Units** Analysis Date: **03-Nov-2014 14:30**
Client ID: Run ID: **WetChem_HS_244116** SeqNo: **3075574** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.02	0.100	6	0	100	97 - 103				

DUP Sample ID: **HS14101107-01DUP** Units: **pH Units** Analysis Date: **03-Nov-2014 14:30**
Client ID: Run ID: **WetChem_HS_244116** SeqNo: **3075575** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.87	0.100					6.82	0.73	10	
Temp Deg C @pH	22.4	0					22.4	0		

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
Project: Cross Manufacturing
WorkOrder: HS14101239

QUALIFIERS, ACRONYMS, UNITS

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

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

Unit Reported	Description
µg/L	Micrograms per Liter
Date	
pH Units	

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	AR - 2014	27-Mar-2015
California	2919	31-Jul-2015
Dept of Defense	L2231 Rev 3-20-2014	22-Dec-2015
Illinois	003403	09-May-2015
Kansas	E-10352 8/15/2013-2014	30-Nov-2014
Kentucky	KY 2014-2015	30-Apr-2015
Louisiana	03087 2014/2015	30-Jun-2015
North Carolina	624 - 2014	31-Dec-2014
North Dakota	R-193 2025	30-Apr-2015
Oklahoma	2014-128	31-Aug-2015
Texas	T104704231-14-14	30-Apr-2015

Client: Remediation Services, Inc
Project: Cross Manufacturing
Work Order: HS14101239

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	Sub

ALS Group USA, Corp Date: 05-Nov-14

Sample Receipt Checklist

Client Name: RSI - DIRECT
Work Order: HS14101239

Date/Time Received: **29-Oct-2014 09:17**
Received by: **DES**

Checklist completed by: *Raegen Giga* eSignature 29-Oct-2014 Date

Reviewed by: *Bernadette A. Fini* eSignature 30-Oct-2014 Date

Matrices: **soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c/2.1c c/u	IR 1	
Cooler(s)/Kit(s):	23742		
Date/Time sample(s) sent to storage:	10/29/2014 17:15		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: 0 Regarding:

Comments:

Corrective Action:

ALS Environmental

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

Chain of Custody Form

Page ____ of ____

COC ID: 109530

HS14101239

Remediation Services, Inc
Cross Manufacturing

Customer Information		Project Information		ALS Project Manager:
Purchase Order		Project Name	Cross Manufacturing	
Work Order		Project Number	Cross Manufacturing	
Company Name	Remediation Services, Inc	Bill To Company	Remediation Services, Inc	
Send Report To	Dan Roth	Invoice Attn		
Address	2735 South 10th Street	Address	2735 South 10th Street	
City/State/Zip	Independence	City/State/Zip	Independence	
Phone		Phone	(620) 331-1200	
Fax	(620) 331-6216	Fax		
e-Mail Address	droth@rsi-ks.com	e-Mail Address		

A	TCLP VOC (1311/8260)
B	TCLP SVOC (1311/8270)
C	TCLP Metals (1311/7470) - RCRA 8
D	~~PCBs (8082)~~
E	RCI - Reactive Cyanide, Reactive Sulfide
F	RCI - pH, Ignitability
G	
H	
I	
J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	21332 - Soil - 01	10-28-14	08:00	Soil	None	5	✓	✓	✓		✓	✓					
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

NA 10-28-14
COS

Sampler(s) Please Print & Sign: Charles Silicco

Shipment Method:

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] 2 WK Days [ ] 3 HOW [ ] Other

Results Due Date:

Relinquished by: Charles Silicco Date: 10-28-14 Time: 12:00PM Received by:

Relinquished by: Date: Time: Received by (Laboratory): R Cisco 10/29/14 09:17

Logged by (Laboratory): Date: Time: Checked by (Laboratory):

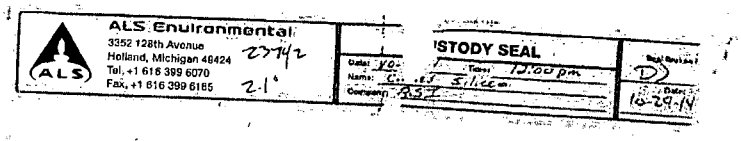
Notes:

Cooler ID	Cooler Temp.
23742	2.1°

QC Package: (Check One Box Below)
[X] Level 2 Std QC [ ] TRRP Checklist
[ ] Level 3 Std QC/Raw da [ ] TRRP Level 4
[ ] Level 4 SW846/CLP
[ ] Other/EDD

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

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


ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185
23742
2.1°
STODY SEAL
Date: 10-
Name:
Company:
Time: 13:00 pm
D
Date:
10-29-14


FedEx
8035 6168 7921
WED - 29 OCT 10:30A
PRIORITY OVERNIGHT
77099
TX-US
IAH
AB SGRA
FID 88927 28OCT14 MPRA 522C1/DF64/65CD

ALS Environmental

05-Nov-2014

Bernadette Fini
ALS Environmental
10450 Stancliff Rd
Suite 210
Houston, TX 77099

Re: **HS14101239** Work Order: **14101786**

Dear Bernadette,

ALS Environmental received 1 sample on 30-Oct-2014 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 10.

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

Sincerely,

Chad Whelton

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

NELAP ACCREDITED LABORATORY

Certificate No: MN 532786

Report of Laboratory Analysis

ALS Group USA, Corp

Date: 05-Nov-14

Client: ALS Environmental
Project: HS14101239
Work Order: **14101786**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
14101786-01	HS14101239-01	Soil	21332-Soil-01	10/28/2014 08:00	10/30/2014 09:30	☐

ALS Group USA, Corp

Date: 05-Nov-14

Client: ALS Environmental
Project: HS14101239
WorkOrder: **14101786**

QUALIFIERS, ACRONYMS, UNITS

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

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
°F	Degrees Fahrenheit
mg/Kg	Milligrams per Kilogram

ALS Group USA, Corp

Date: *05-Nov-14*

Client: ALS Environmental
Project: HS14101239
Sample ID: HS14101239-01
Collection Date: 10/28/2014 08:00 AM

Work Order: 14101786
Lab ID: 14101786-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, REACTIVE			**SW7.3.3.2**			Analyst: **AXL**
Cyanide, Reactive	ND		100	mg/Kg	1	11/4/2014 04:00 PM
FLASHPOINT, OPEN-CUP			**D92**			Analyst: **MB**
Flashpoint, Open-cup	**>200**			°F	1	11/4/2014 09:00 AM
SULFIDE, REACTIVE			**SW7.3.4.2**			Analyst: **AXL**
Sulfide, Reactive	ND		100	mg/Kg	1	11/4/2014 04:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Client: ALS Environmental
Work Order: 14101786
Project: HS14101239

Date: 05-Nov-14

QC BATCH REPORT

Batch ID: **R151788** Instrument ID **WETCHEM** Method: **SW7.3.4.2**

MBLK Sample ID: **MB-R151788-R151788** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_141104H** SeqNo: **3017208** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	ND	100								

LCS Sample ID: **LCS-R151788-R151788** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_141104H** SeqNo: **3017209** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	1776	100	2149	0	82.6	60-120	0			

The following samples were analyzed in this batch: 14101786-01A

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

Client: ALS Environmental
Work Order: 14101786
Project: HS14101239

QC BATCH REPORT

Batch ID: **R151789** Instrument ID **WETCHEM** Method: **SW7.3.3.2**

MBLK Sample ID: **MBLK-R151789-R151789** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_141104I** SeqNo: **3017213** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	ND	100								

LCS Sample ID: **LCS-R151789-R151789** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_141104I** SeqNo: **3017214** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	124.8	100	125	0	99.8	75-125	0			

MS Sample ID: **14101786-01A MS** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: **HS14101239-01** Run ID: **WETCHEM_141104I** SeqNo: **3017217** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	248.1	100	250	0	99.2	50-150	0			

MSD Sample ID: **14101786-01A MSD** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: **HS14101239-01** Run ID: **WETCHEM_141104I** SeqNo: **3017218** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	248.1	100	250	0	99.2	50-150	248.1	0	35	

The following samples were analyzed in this batch: 14101786-01A

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

Client: ALS Environmental
Work Order: 14101786
Project: HS14101239

QC BATCH REPORT

Batch ID: **R151802** Instrument ID **WETCHEM** Method: **D92**

LCS Sample ID: **LCS-R151802-R151802** Units: **°F** Analysis Date: **11/4/2014 09:00 AM**
Client ID: Run ID: **WETCHEM_141104N** SeqNo: **3017495** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Flashpoint, Open-cup	80	0	81	0	98.8	97-103	0			

The following samples were analyzed in this batch: 14101786-01A

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

14101786

CHAIN OF CUSTODY RECORD

ALS Environmental

Page 1 of 1

Date 29 Oct 2014
COC ID 1728
Due date 05 NOV 14

Subcontractor

ALS Laboratory Group
3352 128th Ave.
Holland, MI 494249263

Phone
6163996070
Fax
6163996185

Customer Information		Project Information	
PO		Project Name	HS14101239

Company Name	ALS Houston	Company Name	ALS Houston
		Inv Attn	Accounts Payable
Address	10450 Stancliff Rd, Ste 210	Address	10450 Stancliff Rd, Ste 210
	Houston, TX 77099		Houston, TX 77099
Phone	281-530-5656	Phone	281-530-5656
Email1	Bernadette.fini@alsglobal.com	Email2	

Lab ID	Client Samp ID	Collection Date	Matrix	Analysis Requested
HS14101239-01	21332-Soil-01	28-Oct-14 08:00 am	Soil	RCN_S
				RS_S
				SUB_FLASHPOINT

Comments Please analyze for the above. Send report to Bernadette.fini@alsglobal.com. CC Jumoke.lawal@alsglobal.com

Relinquished by:	Date/Time:	Received by:	Date/Time:	Cooler IDs:	Report/QC Level
R Giga	10/29/14 18:00				
			10/30/14 0930		

3.8°c

Sis: PRIORITY OVERNIGHT
TRCK: 5813 7990 9207

0.00 TOTAL: 65.88

ORIGIN ID: SGRA (281) 530-5656
SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 29OCT14
ACTWGT: 16.6 LB
CAD: 300130/CAFE2806
DIMS: 14x11x10 IN
BILL SENDER

TO JOE RIBAR
ALS ENVIRONMENTAL
3352 128TH AVE.

HOLLAND MI 49424
(616) 399-6070
REF: H814101178/1182/1219/1224/1239/1005/118

FedEx Express
E

TRK# 0201 5813 7990 9207

THU - 30 OCT 10:30A
PRIORITY OVERNIGHT

NA HLMA

49424
MI-US GRR

CUSTODY SEAL

Date: 10/28/14
Time:
Name:
Company: ALS

Seal Broken By:
Date:

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL

Date: 10-29-14
Time:
Name:
Company:

Seal Broken By:
Date:

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **ALS - HOUSTON** Date/Time Received: **30-Oct-14 09:30**

Work Order: **14101786** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 30-Oct-14 (Date) Reviewed by: Chad Whelton (eSignature) 30-Oct-14 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.8 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/30/2014 4:40:41 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

Bureau of Waste Management
Curtis State Office Building
1000 SW Jackson, Suite 320
Topeka, KS 66612-1366

Kansas

Phone: 785-296-1600
Fax: 785-296-8909
bwmweb@kdheks.gov
www.kdheks.gov/waste

Susan Mosier, MD, Secretary — Department of Health & Environment — Sam Brownback, Governor

November 19, 2015

Mr. Raymond Law
Cross Manufacturing, Inc.
100 James H. Cross Blvd.
Lewis, KS 67552

RE: Special Waste Disposal Authorization Number 15-1618

THIS AUTHORIZATION EXPIRES April 19, 2016.

Dear Mr. Law:

We have considered your request for disposal of one (1) drum of IDW purge water from Cross Manufacturing, Inc., 100 James H. Cross Blvd., Lewis, KS. (Analysis provided)

Based solely on the analysis provided, the waste is not a characteristic hazardous waste with respect to the constituents tested. As stated in K.A.R.28-31-261, it is the responsibility of the generator to determine whether or not a waste is a hazardous waste by either knowledge of process or by proper testing by a K.D.H.E. certified lab. If there are questions as to the status of this waste, the department suggests the facility contact the Kansas Department of Health and Environment at telephone 316-337-6020. **If Cross Manufacturing, Inc. is confident the material for disposal is not a hazardous waste for any characteristic or listed constituent not included in the testing, the following applies.**

Approval is given to dispose of this waste at the Plumb Thicket landfill, operating under Kansas Permit 0842, provided the following conditions are met:

1. Approval to deliver the waste must be obtained from the landfill operator prior to transporting the waste to the landfill. The final decision on whether to accept or reject the waste rests with the landfill operator. Please contact Shad Pletcher, Site Manager, telephone 620-896-2229, to obtain approval. If the landfill operator refuses to accept this waste, you should contact us to determine alternate disposal options.

2. The waste must be transported separately to the landfill and be identified to the operator upon delivery.

3. Kansas Administrative Regulation 28-29-108(r) (12) and (13) requires solid waste disposal facilities to maintain a log of commercial or industrial wastes received such as sludges, barreled wastes, and special wastes. The log must indicate the source and quantity of waste and the disposal location thereof. The special waste authorization number should be used as identification when entering the shipment into the log.

4. This approval is valid for disposal of the waste described and in the amount shown above. If additional shipments are required, you must contact us to receive another disposal authorization.

5. This special waste may only be disposed at this subtitle D landfill that has been approved per K.A.R.28-29-2 (b) to receive non-hazardous liquid waste.

6. Any change in the process producing this waste, any change in the materials used in producing this waste or any other change to this waste stream requires that a new Special Waste Disposal Authorization be obtained prior to disposal.

If you have any questions, feel free to contact me at 785-296-0681.

Sincerely,

Tony Guy
Environmental Scientist
Special Waste Coordinator
KDHE/Bureau of Waste Management

ABG

C Shad Pletcher
e-file

Requester phone: 620-338-6066

SPECIAL WASTE APPROVAL
(This Page for OFFICE USE ONLY)

FOR OFFICE USE ONLY
APPROVAL NUMBER: PT15174
EXPIRATION DATE: 04/19/2016
APPROVED BY: AWS

H. ENVIRONMENTAL COMPLIANCE SUPERVISOR DECISION

1. ☒ Acceptable ☐ Not Acceptable Reason IDW purge water; 1 drum; Cross Manufacturing (Remediation Services); 15-1618; lab

2. Name: Aaron W Smith	3. Date: 12/01/2015
4. Signature: Aaron W Smith	5. Phone: (303) 867-5513

I. INSTRUCTIONS/HANDLING PROCEDURES

This Section is to be completed by BOTH the Environmental Compliance Supervisor and the Facility Manager.

1. Disposal Method(s): ☒ Landfill ☐ Solidification ☐ Approved ADC ☐ Bioremediation ☐ Other:

2. Review and approval of waste is based upon a submitted documentation from generator/customer. Approval is granted subject to the enforcement of the following conditions. Failure to comply may result in rejection of the wastes.

A. Customer/Generator shall receive a copy of this sheet upon approval and shall conform to all instructions/limitations noted herein.
B. Loads may be randomly inspected upon receipt at the landfill to ensure wastes conform to description on Application.
C. This material must be properly contained, bagged, or covered prior to and during shipment and disposal.
D. The customer must contact the respective landfill to schedule the waste shipment 24 hours prior to delivery or alternative arrangements agreed upon by the facility management.

3. The conditions marked below apply to this waste stream.

APPROVAL CONDITION(S):

☐ BLANKET APPROVAL: The manifest accompanying each load of waste shall denote the specific waste generation address/location(s) for that load.

☐ CONDITIONAL APPROVAL: This is a conditional approval/extension. Upon receipt of additional analyses, this approval may be extended up to three (3) years from the original approval date. SPECIFIC CONDITION:

WASTE CONDITION(S):

☐ ABSORBENT MATERIALS: Absorbent material (pads, booms, diapers, socks, soils, etc.) must not be supersaturated so as to release free liquids on handling. Wastes that would not pass a paint filter test must be solidified prior to placement in the landfill.

☐ ASBESTOS CONTAINING MATERIAL (ACM): ☐ Friable ☐ Non-Friable

☐ CARE UNLOADING: Maintain integrity of container/packaging.

☐ FREE LIQUIDS/SLUDGE: Free liquids are prohibited from landfill disposal. Wastes containing free liquids must be solidified and able to pass a paint filter test prior to placement at active face.

☐ OTHER:

LANDFILL SPECIAL HANDLING PROCEDURES:

☐ DISPOSAL LOCATION RESTRICTION: Dispose at least ___ feet from edge of slope or boundary.

☐ DUST: Materials may become airborne. Use appropriate control measures to prevent the material from becoming airborne.

☐ IRRITANT DUST: Materials may be dusty and are likely to cause irritation to skin and/or eyes. Use appropriate dust control measures and PPE as needed to prevent airborne dust and/or employee exposure. See MSDS for additional information.

☐ HOT: Potential Hot Load. Isolate from combustible materials. ☐ See MSDS for proper handling procedures:

☐ ODOR: Bury immediately upon arrival. ☐ ADDITIONAL HANDLING INSTRUCTIONS:

☐ SLUDGE: Potential traction issue on work face.

☐ SPECIAL BURIAL REQUIREMENTS: Immediately cover waste ☐ MSW ☐ Dirt prior to compaction.

☐ SURVEY REQUIREMENT: Materials must be surveyed in or indicated on a grid.

Special Waste Disposal Request

Kansas Department of Health and Environment

Bureau of Waste Management
Waste Reduction, Compliance and Enforcement Section
1000 SW Jackson, Suite 320, Topeka, Kansas 66612-1366

You may FAX this form to: 785- 296-8909 or 785-296-8721

Please type or clearly print - See page 2 for instructions

I. REQUESTER INFORMATION (*This is where the Disposal Authorization letter will be sent.*)

Name: Remediation Services, Inc.

Address: P.O. Box 587

City: Independence State: Kansas Zip Code: 67301

Contact Person: Butch Holum Telephone Number: (620) 331-1200

E-Mail Address, if applicable: bholum@rsi-ks,com Fax Number: (620) 331-6216

II. POINT/LOCATION OF GENERATION INFORMATION *(only if different from the information in Section I above)*

Name: Cross Manufacturing, Inc.

Address: 100 James Cross Boulevard

City: Lewis State: Kansas Zip Code: 67552

Contact Person: Raymond Law Telephone Number: (620) 324-5525

III. WASTE INFORMATION - *Use back of form if additional space is required*

Waste Description: Purged Groundwater

Process Producing Waste: IDW

Physical Characteristics of Waste: Clear liquid

Quantity for Disposal: 1 (Please Select One) ○ Lbs. ○ Tons ○ Cubic Yards ◉ Containers/Drums ○ Bags

Frequency (Select One): ◉ One Time ○ Week ○ Month ○ Year

Laboratory Analyses Attached: ◉ Yes ○ No Material Safety Data Sheets (MSDS) Attached: ○ Yes ◉ No

Renewal of Previous Authorization: Previous Authorization No: N/A Date Issued: N/A

IV. DISPOSAL INFORMATION

Landfill Proposed for Disposal: Plumb Thicket Landfill 440 NE 150th Road Harper, Kansas 67058

Solid Waste Transfer Station Proposed: N/A

V. CERTIFICATION

I hereby certify that I am a d uly authorized representative of the generator identified above. I further certify that, to the best of my knowledge, the following items are true:

1. The waste identified for disposal is not a hazardous waste as defined by K.A.R. 28-31-261.
2. All analytical analyses provided are from a Kansas Department of Health and Environment (KDHE) certified laboratory and are representative of the waste identified for disposal.
3. All information provided in any attached profile, re-certification, or other document completed by the authorized representative accurately characterizes the waste.
4. If this is a renewal, the materials and processes that generate the waste have not changed since the last disposal authorization indicated above, and the information previously provided to KDHE is still valid.

Raymond Law — Signature

Raymond Law - EH&S Corporate Coordinator — Printed Name

November 13, 2015 — Date

Form sw600-specialwaste.pdf

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

August 22, 2013

Dave Carstons
WSP Environment & Energy
300 Trade Center, Suite 4690
Woburn, MA 01801

RE: Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Dear Dave Carstons:
Enclosed are the analytical results for sample(s) received by the laboratory on August 08, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sherri Rosenstangle

Sherri Rosenstangle

sherri.rosenstangle@pacelabs.com
Project Manager

Enclosures

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60150682001	WC080713-WT	Water	08/07/13 08:00	08/08/13 22:50
60150682002	WC080713-SL	Solid	08/07/13 08:00	08/08/13 22:50

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60150682001	**WC080713-WT**	EPA 6010	JGP	7
		EPA 7470	TJT	1
		SM 4500-H+B	JML	1
60150682002	**WC080713-SL**	EPA 6010	JGP	7
		EPA 7470	TJT	1
		EPA 9045	DJR	1

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Sample: WC080713-WT **Lab ID: 60150682001** Collected: 08/07/13 08:00 Received: 08/08/13 22:50 Matrix: Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 08/20/13 00:00								
Arsenic	ND	mg/L	0.50	5	1	08/20/13 14:00	08/21/13 10:15	7440-38-2	
Barium	ND	mg/L	2.5	100	1	08/20/13 14:00	08/21/13 10:15	7440-39-3	
Cadmium	ND	mg/L	0.050	1	1	08/20/13 14:00	08/21/13 10:15	7440-43-9	
Chromium	ND	mg/L	0.10	5	1	08/20/13 14:00	08/21/13 10:15	7440-47-3	
Lead	ND	mg/L	0.50	5	1	08/20/13 14:00	08/21/13 10:15	7439-92-1	
Selenium	ND	mg/L	0.50	1	1	08/20/13 14:00	08/21/13 10:15	7782-49-2	
Silver	ND	mg/L	0.10	5	1	08/20/13 14:00	08/21/13 10:15	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 08/20/13 00:00								
Mercury	ND	mg/L	0.0020	.2	1	08/21/13 12:15	08/21/13 15:48	7439-97-6	
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**7.4**	Std. Units	0.10		1		08/09/13 15:00		H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Sample: WC080713-SL **Lab ID: 60150682002** Collected: 08/07/13 08:00 Received: 08/08/13 22:50 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 08/20/13 00:00								
Arsenic	ND	mg/L	0.50	5	1	08/20/13 14:00	08/21/13 10:18	7440-38-2	
Barium	ND	mg/L	2.5	100	1	08/20/13 14:00	08/21/13 10:18	7440-39-3	
Cadmium	ND	mg/L	0.050	1	1	08/20/13 14:00	08/21/13 10:18	7440-43-9	
Chromium	ND	mg/L	0.10	5	1	08/20/13 14:00	08/21/13 10:18	7440-47-3	
Lead	ND	mg/L	0.50	5	1	08/20/13 14:00	08/21/13 10:18	7439-92-1	
Selenium	ND	mg/L	0.50	1	1	08/20/13 14:00	08/21/13 10:18	7782-49-2	
Silver	ND	mg/L	0.10	5	1	08/20/13 14:00	08/21/13 10:18	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
	Leachate Method/Date: EPA 1311; 08/20/13 00:00								
Mercury	ND	mg/L	0.0020	.2	1	08/21/13 12:15	08/21/13 15:50	7439-97-6	
9045 pH Soil	Analytical Method: EPA 9045								
pH at 25 Degrees C	**6.9**	Std. Units	0.10		1		08/20/13 13:50		

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QUALITY CONTROL DATA

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

QC Batch: MERP/7622 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 60150682001, 60150682002

METHOD BLANK: 1239337 Matrix: Water
Associated Lab Samples: 60150682001, 60150682002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	08/21/13 15:43	

LABORATORY CONTROL SAMPLE: 1239338

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.005	0.0049	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1239339 1239340

Parameter	Units	60151175001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.015	.015	.0016J	.0014J	10	9	75-125		20	M1

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QUALITY CONTROL DATA

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

QC Batch: MPRP/23906
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET TCLP
Associated Lab Samples: 60150682001, 60150682002

METHOD BLANK: 1238819
Matrix: Water
Associated Lab Samples: 60150682001, 60150682002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.50	08/21/13 10:11	
Barium	mg/L	ND	2.5	08/21/13 10:11	
Cadmium	mg/L	ND	0.050	08/21/13 10:11	
Chromium	mg/L	ND	0.10	08/21/13 10:11	
Lead	mg/L	ND	0.50	08/21/13 10:11	
Selenium	mg/L	ND	0.50	08/21/13 10:11	
Silver	mg/L	ND	0.10	08/21/13 10:11	

LABORATORY CONTROL SAMPLE: 1238820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	1	0.94	94	80-120	
Barium	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	1	0.96	96	80-120	
Chromium	mg/L	1	0.99	99	80-120	
Lead	mg/L	1	1.0	100	80-120	
Selenium	mg/L	1	0.93	93	80-120	
Silver	mg/L	.5	0.48	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1238821 1238822

Parameter	Units	60151175001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	10.2	10.1	101	100	75-125	1	20	
Barium	mg/L	9.5	10	10	21.1	20.8	116	113	75-125	1	20	
Cadmium	mg/L	ND	10	10	10.2	10.1	101	101	75-125	1	20	
Chromium	mg/L	ND	10	10	9.9	9.8	98	98	75-125	0	20	
Lead	mg/L	ND	10	10	9.3	9.2	93	92	75-125	0	20	
Selenium	mg/L	ND	10	10	9.7	9.7	97	97	75-125	0	20	
Silver	mg/L	ND	5	5	5.3	5.2	105	104	75-125	1	20	

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QUALITY CONTROL DATA

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

QC Batch: WET/42809
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60150682001

SAMPLE DUPLICATE: 1234046

Parameter	Units	60150688001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	10.1	10.0	0	5	H6

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QUALITY CONTROL DATA

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

QC Batch: WET/42970
QC Batch Method: EPA 9045
Analysis Method: EPA 9045
Analysis Description: 9045 pH
Associated Lab Samples: 60150682002

SAMPLE DUPLICATE: 1238942

Parameter	Units	60150905001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.0	0	3	

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QUALIFIERS

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CROSS MANUFACTURING
Pace Project No.: 60150682

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60150682001	**WC080713-WT**	EPA 3010	MPRP/23906	EPA 6010	ICP/18719
60150682002	**WC080713-SL**	EPA 3010	MPRP/23906	EPA 6010	ICP/18719
60150682001	**WC080713-WT**	EPA 7470	MERP/7622	EPA 7470	MERC/7579
60150682002	**WC080713-SL**	EPA 7470	MERP/7622	EPA 7470	MERC/7579
60150682001	**WC080713-WT**	SM 4500-H+B	WET/42809		
60150682002	**WC080713-SL**	EPA 9045	WET/42970		

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Sample Condition Upon Receipt

WO#: 60150682

60150682

Client Name: WSP Env. & Energy

Optional
Proj Due Date:
Proj Name:

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☑ Exp

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T-112 / T-194 **Type of Ice:** Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 1.3

Temperature should be above freezing to 6°C

Date and Initials of person examining contents: 8/9/13 (S)

Chain of Custody present:	☑Yes ☐No ☐N/A	1.	
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.	
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.	
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	6.	ph
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.	
Sufficient volume:	☑Yes ☐No ☐N/A	8.	
Correct containers used:	☑Yes ☐No ☐N/A		
Pace containers used:	☑Yes ☐No ☐N/A	9.	
Containers intact:	☑Yes ☐No ☐N/A	10.	
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.	
Sample labels match COC:	☑Yes ☐No ☐N/A		
Includes date/time/ID/analyses Matrix: WT / SL		13.	
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A		
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	14.	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes ☑No	Initial when completed	Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☑N/A		
Pace Trip Blank lot # (if purchased):		15.	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.	
Project sampled in USDA Regulated Area:	☐Yes ☑No ☐N/A	17. List State: MA	

Client Notification/ Resolution: Copy COC to Client? (Y) / N Field Data Required? Y / (N)

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: SH2 Date: 8.9.13

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	WSP Environment & Energy	Report To:	Dave Carstens	Attention:	Accounts Payable
Address:	300 Trade Center, Suite 4690	Copy To:	Matt Burns	Company Name:	WSP Environment & Energy
	Woburn, MA 01801			Address:	
Email To:	dave.carstens@wspgroup.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	(781) 933-7340 Fax: (781) 933-7369	Project Name:	Cross Manufacturing, Inc	Pace Project Manager:	Sherri Rosenstangle
Requested Due Date/TAT:	STANDARD	Project Number:	00036483/03	Pace Profile #:	6986.1

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: KS

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	#OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	pH	TCLP Metals	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	WC080713-WT	WT	C	8/7/13	0800				2	X									X	X		60150682 BP3U, BP3C (C)
2	WC080713-SL	SL	C	8/7/13	0800				2	X									X	X		250ml WGKU, WGKU (C)
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	WSP	8/8/13	1210	Pace/1st	8/8	1210				
				E Brackett / Pace	8/8	2250	1.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: David Carstens

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 8/8/13

WASTE MATERIAL PROFILE SHEET

Clean Harbors Profile No. CH893139

A. GENERAL INFORMATION

GENERATOR EPA ID #/REGISTRATION # *KSD007240286* GENERATOR NAME: *Cross Manufacturing, Inc*

GENERATOR CODE (Assigned by Clean Harbors) *CR21699* CITY *Lewis* STATE/PROVINCE *KS* ZIP/POSTAL CODE *67552*

ADDRESS ~~*100 Factory Street*~~ *140 JAMES HCROSS BLVD* PHONE: (316) 324-5525

CUSTOMER CODE (Assigned by Clean Harbors) *REM0538* CUSTOMER NAME: *Remediation Services Inc*

ADDRESS *2735 South 10th Street PO Box 587* CITY *Independence* STATE/PROVINCE *KS* ZIP/POSTAL CODE *67301*

B. WASTE DESCRIPTION

WASTE DESCRIPTION: Broken concrete

PROCESS GENERATING WASTE: Removal of concrete floor and tank pit areas.

IS THIS WASTE CONTAINED IN SMALL PACKAGING CONTAINED WITHIN A LARGER SHIPPING CONTAINER? No

C. PHYSICAL PROPERTIES (at 25C or 77F)

PHYSICAL STATE
- [x] SOLID WITHOUT FREE LIQUID
- [ ] POWDER
- [ ] MONOLITHIC SOLID
- [ ] LIQUID WITH NO SOLIDS
- [ ] LIQUID/SOLID MIXTURE
  - % FREE LIQUID
  - % SETTLED SOLID
  - % TOTAL SUSPENDED SOLID
- [ ] SLUDGE
- [ ] GAS/AEROSOL

NUMBER OF PHASES/LAYERS: 1 2 3

% BY VOLUME (Approx.): TOP *0.00*, MIDDLE *0.00*, BOTTOM *0.00*

VISCOSITY (If liquid present)
- 1 - 100 (e.g. Water)
- 101 - 500 (e.g. Motor Oil)
- 501 - 10,000 (e.g. Molasses)
- > 10,000

COLOR: Greyish

ODOR
- [x] NONE
- [ ] MILD
- [ ] STRONG

Describe:

BOILING POINT °F (°C)
- <= 95 (<=35)
- 95 - 100 (35-38)
- 101 - 129 (38-54)
- >= 130 (>54)

MELTING POINT °F (°C)
- < 140 (<60)
- 140-200 (60-93)
- [x] > 200 (>93)

TOTAL ORGANIC CARBON
- [x] <= 1%
- 1-9%
- >= 10%

FLASH POINT °F (°C)
- < 73 (<23)
- 73 - 100 (23-38)
- 101 -140 (38-60)
- 141 -200 (60-93)
- > 200 (>93)

pH
- <= 2
- 2.1 - 6.9
- [x] 7 (Neutral)
- 7.1 - 12.4
- >= 12.5

SPECIFIC GRAVITY
- < 0.8 (e.g. Gasoline)
- 0.8-1.0 (e.g. Ethanol)
- 1.0 (e.g. Water)
- 1.0-1.2 (e.g. Antifreeze)
- [x] > 1.2 (e.g. Methylene Chloride)

ASH
- < 0.1
- 0.1 - 1.0
- 1.1 - 5.0
- 5.1 - 20.0
- > 20
- [x] Unknown

BTU/LB (MJ/kg)
- [x] < 2,000 (<4.6)
- 2,000-5,000 (4.6-11.6)
- 5,000-10,000 (11.6-23.2)
- > 10,000 (>23.2)

Actual:

D. COMPOSITION (List the complete composition of the waste, include any inert components and/or debris. Ranges for individual components are acceptable. If a trade name is used, please supply an MSDS. Please do not use abbreviations.)

CHEMICAL	MIN	--	MAX	UOM
CHROMIUM	50.0000000	--	200.0000000	PPM
DEBRIS, PPE	30.0000000	--	60.0000000	%
Concrete	70.0000000	--	95.0000000	%

DOES THIS WASTE CONTAIN ANY HEAVY GAUGE METAL DEBRIS OR OTHER LARGE OBJECTS (EX., METAL PLATE OR PIPING >1/4" THICK OR >12" LONG, METAL REINFORCED HOSE >12" LONG, METAL WIRE >12" LONG, METAL VALVES, PIPE FITTINGS, CONCRETE REINFORCING BAR OR PIECES OF CONCRETE >3")? [x] YES X NO

If yes, describe, including dimensions: *Poly tank ,10ft dia., 5 tall top cutoff also metal ducting*

DOES THIS WASTE CONTAIN ANY METALS IN POWDERED OR OTHER FINELY DIVIDED FORM? YES [x] NO

DOES THIS WASTE CONTAIN OR HAS IT CONTACTED ANY OF THE FOLLOWING: ANIMAL WASTES, HUMAN BLOOD, BLOOD PRODUCTS, BODY FLUIDS, MICROBIOLOGICAL WASTE, PATHOLOGICAL WASTE, HUMAN OR ANIMAL DERIVED SERUMS OR PROTEINS OR ANY OTHER POTENTIALLY INFECTIOUS MATERIAL? YES [x] NO

I acknowledge that this waste material is neither infectious nor does it contain any organism known to be a threat to human health. This certification is based on my knowledge of the material. Select the answer below that applies:

The waste was never exposed to potentially infectious material. YES NO

Chemical disinfection or some other form of sterilization has been applied to the waste. YES NO

I ACKNOWLEDGE THAT THIS PROFILE MEETS THE CLEAN HARBORS BATTERY PACKAGING REQUIREMENTS. YES NO

I ACKNOWLEDGE THAT MY FRIABLE ASBESTOS WASTE IS DOUBLE BAGGED AND WETTED. YES NO

SPECIFY THE SOURCE CODE ASSOCIATED WITH THE WASTE. *G15* SPECIFY THE FORM CODE ASSOCIATED WITH THE WASTE. *W307*

HAZ WASTE 2 LOADS = 20.17 TONS

E. CONSTITUENTS

Are these values based on testing or knowledge? ☑ Knowledge ☐ Testing

If based on knowledge, please describe in detail, the rationale applied to identify and characterize the waste material. Please include reference to Material Safety Data Sheets (MSDS) when applicable. Include the chemical or trade name represented by the MSDS, and or detailed process or operating procedures which generate the waste.

Concrete floor removal from former plating room area and pit.

Please indicate which constituents below apply. Concentrations must be entered when applicable to assist in accurate review and expedited approval of your waste profile. Please note that the total regulated metals and other constituents sections require answers.

RCRA	REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL	UOM	NOT APPLICABLE
D004	ARSENIC	5.0				☑
D005	BARIUM	100.0				☑
D006	CADMIUM	1.0				☑
D007	CHROMIUM	5.0	50.0000	50000.0000000	PPM	
D008	LEAD	5.0				☑
D009	MERCURY	0.2				☑
D010	SELENIUM	1.0				☑
D011	SILVER	5.0				☑

	VOLATILE COMPOUNDS		
D018	BENZENE	0.5	
D019	CARBON TETRACHLORIDE	0.5	
D021	CHLOROBENZENE	100.0	
D022	CHLOROFORM	6.0	
D028	1,2-DICHLOROETHANE	0.5	
D029	1,1-DICHLOROETHYLENE	0.7	
D035	METHYL ETHYL KETONE	200.0	
D039	TETRACHLOROETHYLENE	0.7	
D040	TRICHLOROETHYLENE	0.5	
D043	VINYL CHLORIDE	0.2	
	SEMI-VOLATILE COMPOUNDS		
D023	o-CRESOL	200.0	
D024	m-CRESOL	200.0	
D025	p-CRESOL	200.0	
D026	CRESOL (TOTAL)	200.0	
D027	1,4-DICHLOROBENZENE	7.5	
D030	2,4-DINITROTOLUENE	0.13	
D032	HEXACHLOROBENZENE	0.13	
D033	HEXACHLOROBUTADIENE	0.5	
D034	HEXACHLOROETHANE	3.0	
D036	NITROBENZENE	2.0	
D037	PENTACHLOROPHENOL	100.0	
D038	PYRIDINE	5.0	
D041	2,4,5-TRICHLOROPHENOL	400.0	
D042	2,4,6-TRICHLOROPHENOL	2.0	
	PESTICIDES AND HERBICIDES		
D012	ENDRIN	0.02	
D013	LINDANE	0.4	
D014	METHOXYCHLOR	10.0	
D015	TOXAPHENE	0.5	
D016	2,4-D	10.0	
D017	2,4,5-TP (SILVEX)	1.0	
D020	CHLORDANE	0.03	
D031	HEPTACHLOR (AND ITS EPOXIDE)	0.008	

OTHER CONSTITUENTS	MAX	UOM	NOT APPLICABLE
BROMINE			☑
CHLORINE			☑
FLUORINE			☑
IODINE			☑
SULFUR			☑
POTASSIUM			☑
SODIUM			☑
AMMONIA			☑
CYANIDE AMENABLE			☑
CYANIDE REACTIVE			☑
CYANIDE TOTAL			☑
SULFIDE REACTIVE			☑

HOCs

☑ NONE
☐ < 1000 PPM
☐ >= 1000 PPM

PCBs

☑ NONE
☐ < 50 PPM
☐ >=50 PPM

IF PCBS ARE PRESENT, IS THE WASTE REGULATED BY TSCA 40 CFR 761?

☐ YES ☑ NO

ADDITIONAL HAZARDS

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED?

☐ YES ☑ NO (If yes, explain)

CHOOSE ALL THAT APPLY

☐ DEA REGULATED SUBSTANCE	☐ EXPLOSIVE	☐ FUMING	☐ OSHA REGULATED CARCINOGENS
☐ POLYMERIZABLE	☐ RADIOACTIVE	☐ REACTIVE MATERIAL	☑ NONE OF THE ABOVE

CleanHarbors

Clean Harbors Profile No. CH893139

F. REGULATORY STATUS

- [x] YES [ ] NO USEPA HAZARDOUS WASTE?
  D007 D008
- [ ] YES [x] NO DO ANY STATE WASTE CODES APPLY?
  Texas Waste Code
- [ ] YES [x] NO DO ANY CANADIAN PROVINCIAL WASTE CODES APPLY?
- [x] YES [ ] NO IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?
  LDR CATEGORY: This is subject to LDR.
  VARIANCE INFO:
- [ ] YES [x] NO IS THIS A UNIVERSAL WASTE?
- [ ] YES [x] NO IS THE GENERATOR OF THE WASTE CLASSIFIED AS CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR (CESQG)?
- [ ] YES [x] NO IS THIS MATERIAL GOING TO BE MANAGED AS A RCRA EXEMPT COMMERCIAL PRODUCT, WHICH IS FUEL (40 CFR 261.2 (C)(2)(II))?
- [ ] YES [x] NO DOES TREATMENT OF THIS WASTE GENERATE A F006 OR F019 SLUDGE?
- [ ] YES [x] NO IS THIS WASTE STREAM SUBJECT TO THE INORGANIC METAL BEARING WASTE PROHIBITION FOUND AT 40 CFR 268,3(C)?
- [ ] YES [x] NO DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS >=500 PPM?
- [ ] YES [x] NO DOES THE WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE >= .3KPA (.044 PSIA)?
- [ ] YES [x] NO DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE > 77 KPA (11.2 PSIA)?
- [ ] YES [x] NO IS THIS CERCLA REGULATED (SUPERFUND) WASTE ?
- [ ] YES [x] NO IS THE WASTE SUBJECT TO ONE OF THE FOLLOWING NESHAP RULES?
  [ ] Hazardous Organic NESHAP (HON) rule (subpart G) [ ] Pharmaceuticals production (subpart GGG)
- [ ] YES [x] NO IF THIS IS A US EPA HAZARDOUS WASTE, DOES THIS WASTE STREAM CONTAIN BENZENE?
  - [ ] YES [ ] NO Does the waste stream come from a facility with one of the SIC codes listed under benzene NESHAP or is this waste regulated under the benzene NESHAP rules because the original source of the waste is from a chemical manufacturing, coke by-product recovery, or petroleum refinery process?
  - [ ] YES [ ] NO Is the generating source of this waste stream a facility with Total Annual Benzene (TAB) >10 Mg/year?

  What is the TAB quantity for your facility? [ ] Megagram/year (1 Mg = 2,200 lbs)

  The basis for this determination is: Knowledge of the Waste Or Test Data [ ] Knowledge [ ] Testing

  Describe the knowledge:

G. DOT/TDG INFORMATION

DOT/TDG PROPER SHIPPING NAME:

NA3077, HAZARDOUS WASTE, SOLID, N.O.S., (CHROMIUM, DEBRIS), 9, PG III

H. TRANSPORTATION REQUIREMENTS

ESTIMATED SHIPMENT FREQUENCY [x] ONE TIME [ ] WEEKLY [ ] MONTHLY [ ] QUARTERLY [ ] YEARLY [ ] OTHER *Other*

CONTAINERIZED

0-0 CONTAINERS/SHIPMENT

STORAGE CAPACITY:

CONTAINER TYPE:

[ ] CUBIC YARD BOX [ ] PALLET

[ ] TOTE TANK [ ] DRUM

OTHER:

DRUM SIZE:

BULK LIQUID

GALLONS/SHIPMENT: *0 Min -0 Max*

[x] BULK SOLID

GAL.

SHIPMENT UOM: TON [x] YARD

TONS/YARDS/SHIPMENT: *10.00 Min - 25.00 Max*

I. SPECIAL REQUEST

COMMENTS OR REQUESTS:

GENERATOR'S CERTIFICATION

I certify that I am authorized to execute this document as an authorized agent. I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to amend the profile, as Clean Harbors deems necessary, to reflect the discrepancy.

AUTHORIZED SIGNATURE	NAME (PRINT)	TITLE	DATE
Raymond Law	Raymond Law	EHS Corporate Coordinator	October 21, 2014

HM2 SOIL / Concrete
Lead /

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) DK 1402826463 SC PPW 9/30/2014 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: KSD007240286
2. Page 1 of: 1
3. Emergency Response Phone: (800) 483-3718
4. Manifest Tracking Number: 007567739 FLE

GENERATOR

5. Generator's Name and Mailing Address
Cross Manufacturing, Inc
100 James Cross Boulevard
Lewis, KS 67552
Generator's Phone: (316) 324-5525

Generator's Site Address (if different than mailing address): SAME

6. Transporter 1 Company Name: Action Resources Incorporated
U.S. EPA ID Number: ALR000007237

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Lone Mountain LLC
40355 S County Road 236
Wagoner, OK 73860
Facility's Phone: (800) 697-3500
U.S. EPA ID Number: OKD065438376

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
	1. X NA3077, HAZARDOUS WASTE, SOLID, N.O.S., (CHROMIUM), 9, PG III	1	CM AD	15 tn	T	D007	
	2. Box # 25659						
	3.						
	4.						

14. Special Handling Instructions and Additional Information
1. CK893139 ERG#171

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Raymond Law EHS Corporate Coordinator
Signature: Raymond Law
Month: 11 Day: 3 Year: 14

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Ray Rutherford
Signature:
Month: 11 Day: 3 Year: 14
Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Brandi Collier
Signature: Brandi Collier
Month: 11 Day: 3 Year: 14

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

Generator Cross

LM # CH893139E

Manifest # 007567739FLE

Order # ~~[illegible]~~ 140286 26463

Container # 25539

Hauler Allied R. 102

GROSS

TARE 10.9

NET

DIGITAL WEIGHT INDICATOR & PRINTER

Load No. 5588

LONE MOUNTAIN

1426 63580

OUTBOUND
15:27 11 03 14

TARE WEIGHT 41780 lb

NET WEIGHT 21800 lb

HM2 Soil/Concrete
Load 2

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) OK 1402826463 SC PPW 9/30/2014 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	KSD007240286	1	(800) 483-3718	007567740 FLE

5. Generator's Name and Mailing Address
Cross Manufacturing, Inc
100 James Cross Boulevard
Lewis, KS 67552
Generator's Phone: (316) 324-5525

Generator's Site Address (if different than mailing address)
SAME

6. Transporter 1 Company Name: Action Resources Incorporated — U.S. EPA ID Number: ALR000007237

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Lone Mountain LLC
40355 S County Road 238
Wynnoka, OK 73860
Facility's Phone: (580) 697-3500
U.S. EPA ID Number: OKD065438376

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3077, HAZARDOUS WASTE, SOLID, N.O.S., (CHROMIUM), 9, PG III	1	CM RO	15	Tons	D007
	2.					
	3.					
	4.					

Bof 2553

14. Special Handling Instructions and Additional Information
1.CM893139 ERG#171

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.
Generator's/Offeror's Printed/Typed Name: Raymond Lee, EH&S Corporate Coordinator — Signature: Raymond Lee — Month 11 Day 4 Year 14

INTL
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Ray Rutherford — Signature: Ray Rutherford — Month 11 Day 4 Year 14
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
18b. Alternate Facility (or Generator) — Manifest Reference Number: — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Brandy Collier — Signature: Brandy Collier — Month 11 Day 04 Year 14

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

Clean Harbors has the appropriate permits for and will accept the waste the Generator is shipping.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Generator Cross

LM # CN893139B

Manifest # 007067140FLE

Order # 1402826463

Container # 25839

Haule ACT Ros 102

@ 25¢

GROSS 10.08

TARE

NET

DIGITAL WEIGHT INDICATOR & PRINTER

Load No. 5623

LONE MOUNTAIN

CleanHarbors LLC
Lone Mountain Facility
Waynoka, Oklahoma

INBOUND
13:43 11 04 14
VEHICLE 5623 62080 lb

OUTBOUND
14:24 11 04 14
TARE WEIGHT 41920 lb
NET WEIGHT 20160 lb

Bureau of Waste Management
Curtis State Office Building
1000 SW Jackson, Suite 320
Topeka, KS 66612-1366

Robert Moser, MD, Secretary

Kansas
Department of Health & Environment

phone: 785-296-1600
fax: 785-296-8909
email: bwmweb@kdheks.gov
www.kdheks.gov/waste

Sam Brownback, Governor

November 6, 2014

Mr. Raymond Law
Cross Manufacturing, Inc.
100 James H. Cross Blvd.
Lewis, KS 67562

RE: Special Waste Disposal Authorization Number 14-1438

THIS AUTHORIZATION EXPIRES May 6, 2015.

Dear Mr. Law:

We have considered your request for disposal of one hundred (100) tons of soil from Cross Manufacturing, 100 James H. Cross Blvd., Lewis, KS. (Analysis provided)

Based solely on the analysis provided, the waste is not a characteristic hazardous waste with respect to the constituents tested. As stated in K.A.R.28-31-261, it is the responsibility of the generator to determine whether or not a waste is a hazardous waste by either knowledge of process or by proper testing by a K.D.H.E. certified lab. If there are questions as to the status of this waste, the department suggests the facility contact the Kansas Department of Health and Environment at telephone 620-225-0596. **If Cross Manufacturing, Inc. is confident the material for disposal is not a hazardous waste for any characteristic or listed constituent not included in the testing, the following applies.**

Approval is given to dispose of this waste at the Ford County landfill, operating under Kansas Permit 0718, provided the following conditions are met:

1. Approval to deliver the waste must be obtained from the landfill operator prior to transporting the waste to the landfill. The final decision on whether to accept or reject the waste rests with the landfill operator. Please contact Sevena Koehn, Office Manager, telephone 620-225-5288, to obtain approval. If the landfill operator refuses to accept this waste, you should contact us to determine alternate disposal options.

2. The waste must be transported separately to the landfill and be identified to the operator upon delivery.

3. Kansas Administrative Regulation 28-29-108(r) (12) and (13) requires solid waste disposal facilities to maintain a log of commercial or industrial wastes received such as sludges, barreled wastes, and special wastes. The log must indicate the source and quantity of waste and the disposal location thereof. The special waste authorization number should be used as identification when entering the shipment into the log.

4. This approval is valid for disposal of the waste described and in the amount shown above. If additional shipments are required, you must contact us to receive another disposal authorization.

5. Operating standards as defined by K.A.R. 28-29-108(k) prohibit the disposal of liquid waste. "Liquid waste" means any waste material that is determined to contain "free liquids" as defined by method 9095A, revision 1, paint filter liquids test, as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Pub. No. SW-846 dated December 1996. **For purposes of this disposal authorization, all waste for disposal must be able to pass the "paint filter test".**

6. Any change in the process producing this waste, any change in the materials used in producing this waste or any other change to this waste stream requires that a new Special Waste Disposal Authorization be obtained prior to disposal.

If you have any questions, feel free to contact me at 785-296-0681.

Sincerely,

Tony Guy
Environmental Scientist
Special Waste Coordinator
KDHE/Bureau of Waste Management

ABG

C Sevena Koehn
e-file

Requester phone: 620-338-6066

Special Waste Disposal Request

Kansas Department of Health and Environment

Bureau of Waste Management
Waste Reduction, Compliance and Enforcement Section
1000 SW Jackson, Suite 320, Topeka, Kansas 66612-1366

You may FAX this form to: 785- 296-8909 or 785-296-8721

Please type or clearly print - See page 2 for instructions

I. REQUESTER INFORMATION (***This is where the Disposal Authorization letter will be sent.***)

Name: Cross Manufacturing, Inc.

Address: 100 James Cross Boulevard

City: Lewis State: Kansas Zip Code: 67552

Contact Person: Raymond Law Telephone Number: 620-324-5525

E-Mail Address, if applicable: raymond.law@crossmfg.com> Fax Number: 620-324-5737

II. POINT OF GENERATION INFORMATION *(only if different from the information in Section I above)*

Name:

Address:

City: State: Zip Code:

Contact Person: Telephone Number:

III. WASTE INFORMATION - *Use back of form if additional space is required*

Waste Description: Non Hazardous Soil

Process Producing Waste: Excavation of soil during installation of injection gallery

Physical Characteristics of Waste: Dark black soil, no odor

Quantity for Disposal: ~100 (Please Select One) __Lbs. X Tons __Cubic Yards __Containers __Bags

Frequency (Select One): X One Time __Week __Month __Year

Laboratory Analyses Attached: X Yes __No Material Safety Data Sheets (MSDS) Attached: __Yes X No

Renewal of Previous Authorization: Previous Authorization No: N/A Date Issued: N/A

IV. DISPOSAL INFORMATION

Landfill Proposed for Disposal: Ford County Landfill

Solid Waste Transfer Station Proposed:

V. CERTIFICATION

I hereby certify that I am a d uly authorized representative of the generator identified above. I further certify that, to the best of my knowledge, the following items are true:

1. The waste identified for disposal is not a hazardous waste as defined by K.A.R. 28-31-261.
2. All analytical analyses provided are from a Kansas Department of Health and Environment (KDHE) certified laboratory and are representative of the waste identified for disposal.
3. All information provided in any attached profile, re-certification, or other document completed by the authorized representative accurately characterizes the waste.
4. If this is a renewal, the materials and processes that generate the waste have not changed since the last disposal authorization indicated above, and the information previously provided to KDHE is still valid.

X Raymond Law
Signature

Raymond Law, EH&S Corporate Coordinator
Printed Name

11/05/2014
Date

Instructions

If you have any questions about information required to complete this form, please contact the Special Waste Coordinator at 785-296-1600 or send an e-mail to: swda@kdhe.state.ks.us

I. **Requester Information** - Requester information must be provided for the individual taking responsibility for the waste disposal request. This could be the actual generator of the waste, or a contractor or consultant managing the waste for a client. KDHE will e-mail you a copy of the special waste disposal authorization letter as a portable document file (pdf) if you provide your e-mail address. If you do not provide your e-mail address, we will mail or fax you a copy of the SWDA letter. Please note that you may complete this form on-line at our website; however, you must print the form and submit a signed copy via fax or regular mail.

II. **Point of Generation Information** - Point of generation information must be provided for the location where the waste is generated. If this information is identical to the information provided in Section I, this section may be left blank or marked "Same".

III. **Waste Information** - The following information must be provided concerning the waste:

Waste description - Provide a brief description of the waste. For example, "contaminated soil", "wastewater sludge", etc.

Process producing waste - Provide a brief description of the process that produced the waste. For example, "grinding operation", "wastewater treatment plant", "product spill", etc.

Physical Characteristics of Waste - Provide a brief description of the physical make-up of the waste. For example, "gray sludge", or "dark soils with petroleum odor", etc.

Quantity for Disposal - Estimate the quantity of the waste for disposal in units of pounds, tons, cubic yards, containers, or bags. It is best to slightly overestimate.

Frequency - Indicate approximately how often the waste is to be disposed. If the request is for a one-time-only disposal, indicate "One Time" even though you may need to make more than one trip to the landfill to complete the disposal.

Laboratory Analyses Attached - Indicate whether laboratory analyses performed by a KDHE certified laboratory are attached. If you have questions whether analyses are required or what analyses are required, please contact the Special Waste Coordinator at 785-296-1600 or send an e-mail to: swda@kdhe.state.ks.us.

Material Safety Data Sheet (MSDS) Attached - Indicate whether an MSDS for the waste is attached. If you are using an MSDS to support your determination that the waste is not a hazardous waste, the MSDS must be attached.

Renewal of Previous Authorization – If you wish to renew a disposal authorization issued in the prior year, you must complete this section. Be sure to review the previous information (analyses, MSDS, etc.) provided to KDHE to make sure it is still valid.

IV. **Disposal Information** - The following information must be provided concerning the disposal site for the waste:

Landfill Proposed for Disposal - Indicate the landfill where you wish to dispose the waste. You should contact the landfill for tentative approval of acceptance prior to submitting this form.

Solid Waste Transfer Station Proposed - If the waste will be shipped through transfer station, indicate the name of that station. If the waste will be shipped directly to a landfill, leave this line blank or indicate "NA" for *not applicable.*

V. **Certification** - The certification statement must be signed by an authorized representative of the generator/owner of the waste. This may be a consultant or contractor authorized to sign on behalf of the generator/owner of the waste.

ALS Environmental

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

November 05, 2014

Grant Sherwwood
Remediation Services, Inc
2735 South 10th Street
Independence, KS 67301

Work Order: **HS14101239**

Laboratory Results for: **Cross Manufacturing**

Dear Grant,

ALS Environmental received 1 sample(s) on Oct 29, 2014 for the analysis presented in the following report.

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

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

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

Sincerely,

Bernadette Fini

Generated By: Jumoke.Lawal
Bernadette A. Fini
Project Manager

Client: Remediation Services, Inc
Project: Cross Manufacturing
Work Order: HS14101239

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS14101239-01	21332-Soil-01	Soil		28-Oct-2014 08:00	29-Oct-2014 09:17	☐

Client: Remediation Services, Inc **CASE NARRATIVE**
Project: Cross Manufacturing
Work Order: HS14101239

Work Order Comments

- Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier. The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 °C.
- The analyses for Reactive Cyanide, Reactive Sulfide and Flashpoint were subcontracted to ALS Environmental in Holland, MI.

GCMS Semivolatiles by Method SW1311/8270

Batch ID: 87509

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW1311/8260B

Batch ID: R244064

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW7470

Batch ID: 87521

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW1311/6020

Batch ID: 87502a

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9045B

Batch ID: R244116

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Remediation Services, Inc
Project: Cross Manufacturing
Sample ID: 21332-Soil-01
Collection Date: 28-Oct-2014 08:00

ANALYTICAL REPORT
WorkOrder:HS14101239
Lab ID:HS14101239-01
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP VOLATILES	**Method:SW1311/8260B**	Leache:SW1311 / 30-Oct-2014	Prep:SW1311 / 30-Oct-2014			Analyst: PC
1,1-Dichloroethene	ND		100	ug/L	20	31-Oct-2014 21:16
1,2-Dichloroethane	ND		100	ug/L	20	31-Oct-2014 21:16
1,4-Dichlorobenzene	ND		100	ug/L	20	31-Oct-2014 21:16
2-Butanone	ND		200	ug/L	20	31-Oct-2014 21:16
Benzene	ND		100	ug/L	20	31-Oct-2014 21:16
Carbon tetrachloride	ND		100	ug/L	20	31-Oct-2014 21:16
Chlorobenzene	ND		100	ug/L	20	31-Oct-2014 21:16
Chloroform	ND		100	ug/L	20	31-Oct-2014 21:16
Tetrachloroethene	ND		100	ug/L	20	31-Oct-2014 21:16
Trichloroethene	ND		100	ug/L	20	31-Oct-2014 21:16
Vinyl chloride	ND		40	ug/L	20	31-Oct-2014 21:16
Surr: 1,2-Dichloroethane-d4	*94.4*		*70-125*	*%REC*	*20*	*31-Oct-2014 21:16*
Surr: 4-Bromofluorobenzene	*104*		*72-125*	*%REC*	*20*	*31-Oct-2014 21:16*
Surr: Dibromofluoromethane	*98.1*		*71-125*	*%REC*	*20*	*31-Oct-2014 21:16*
Surr: Toluene-d8	*105*		*75-125*	*%REC*	*20*	*31-Oct-2014 21:16*
TCLP SEMIVOLATILES	**Method:SW1311/8270**	Leache:SW1311 / 30-Oct-2014	Prep:SW3510 / 31-Oct-2014			Analyst: GEY
2,4,5-Trichlorophenol	ND		5.0	ug/L	1	31-Oct-2014 19:10
2,4,6-Trichlorophenol	ND		5.0	ug/L	1	31-Oct-2014 19:10
2,4-Dinitrotoluene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Cresols, Total	ND		15	ug/L	1	31-Oct-2014 19:10
Hexachlorobenzene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Hexachlorobutadiene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Hexachloroethane	ND		5.0	ug/L	1	31-Oct-2014 19:10
Nitrobenzene	ND		5.0	ug/L	1	31-Oct-2014 19:10
Pentachlorophenol	ND		5.0	ug/L	1	31-Oct-2014 19:10
Pyridine	ND		5.0	ug/L	1	31-Oct-2014 19:10
Surr: 2,4,6-Tribromophenol	*57.4*		*39-153*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: 2-Fluorobiphenyl	*61.9*		*40-147*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: 2-Fluorophenol	*60.9*		*21-110*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: 4-Terphenyl-d14	*77.6*		*39-141*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: Nitrobenzene-d5	*63.8*		*37-140*	*%REC*	*1*	*31-Oct-2014 19:10*
Surr: Phenol-d6	*65.0*		*11-110*	*%REC*	*1*	*31-Oct-2014 19:10*

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

ALS Group USA, Corp Date: 05-Nov-14

Client: Remediation Services, Inc
Project: Cross Manufacturing
Sample ID: 21332-Soil-01
Collection Date: 28-Oct-2014 08:00

ANALYTICAL REPORT
WorkOrder:HS14101239
Lab ID:HS14101239-01
Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP METALS BY SW6020A	**Method:SW1311/6020**		Leache:SW1311 / 30-Oct-2014			Analyst: RPM
Antimony	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Arsenic	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Barium	**0.728**		**0.200**	**mg/L**	1	03-Nov-2014 15:30
Beryllium	ND		0.0200	mg/L	1	03-Nov-2014 15:30
Cadmium	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Chromium	**0.400**		**0.0500**	**mg/L**	1	03-Nov-2014 15:30
Lead	**3.17**		**0.0500**	**mg/L**	1	03-Nov-2014 15:30
Nickel	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Selenium	ND		0.0500	mg/L	1	03-Nov-2014 15:30
Silver	ND		0.0500	mg/L	1	03-Nov-2014 15:30
TCLP MERCURY BY SW7470A	**Method:SW7470**		Leache:SW1311 / 30-Oct-2014	Prep:SW7470 / 31-Oct-2014		Analyst: OFO
Mercury	ND		0.000200	mg/L	1	31-Oct-2014 16:44
PH SOIL BY SW9045D	**Method:SW9045B**					Analyst: JHD
pH	**9.75**	H	**0.100**	**pH Units**	1	03-Nov-2014 14:30
Temp Deg C @pH	**22.2**	H	**0**	**°C**	1	03-Nov-2014 14:30
REACTIVE CYANIDE	**Method:SW7.3.3.2**					Analyst: JML
Reactive Cyanide	ND		100	mg/Kg	1	04-Nov-2014 16:00
REACTIVE SULFIDE	**Method:SW7.3.4.2**					Analyst: JML
Reactive Sulfide	ND		100	mg/Kg	1	04-Nov-2014 16:00
SUBCONTRACT ANALYSIS - FLASHPOINT	**Method:NA**					Analyst: JML
Subcontract Analysis	See Attached				1	05-Nov-2014 09:03

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

Client: Remediation Services, Inc
Project: Cross Manufacturing
WorkOrder: HS14101239

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 87502a	**Test Name :** TCLP METALS BY SW6020A			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 16:00	31 Oct 2014 12:34	03 Nov 2014 15:30	1
Batch ID 87509	**Test Name :** TCLP SEMIVOLATILES			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 17:42	31 Oct 2014 14:19	31 Oct 2014 19:10	1
Batch ID 87521	**Test Name :** TCLP MERCURY BY SW7470A			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 15:53	31 Oct 2014 11:05	31 Oct 2014 16:44	1
Batch ID R244064	**Test Name :** TCLP VOLATILES			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00	30 Oct 2014 19:21	30 Oct 2014 19:21	31 Oct 2014 21:16	20
Batch ID R244116	**Test Name :** PH SOIL BY SW9045D			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			03 Nov 2014 14:30	1
Batch ID R244229	**Test Name :** REACTIVE SULFIDE			**Matrix:** Soil		
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			05 Nov 2014 09:03	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			05 Nov 2014 09:03	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			05 Nov 2014 09:03	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1
HS14101239-01	21332-Soil-01	28 Oct 2014 08:00			04 Nov 2014 16:00	1

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

MBLK Sample ID: **MBLKT1-87502** Units: **mg/L** Analysis Date: **03-Nov-2014 14:34**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075276** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.0500								
Arsenic	ND	0.0500								
Barium	ND	0.200								
Beryllium	ND	0.0200								
Cadmium	ND	0.0500								
Chromium	ND	0.0500								
Lead	ND	0.0500								
Nickel	ND	0.0500								
Selenium	ND	0.0500								
Silver	ND	0.0500								

MBLK Sample ID: **MBLK-87502** Units: **mg/L** Analysis Date: **03-Nov-2014 14:37**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075277** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.00500								
Arsenic	ND	0.00500								
Barium	ND	0.0200								
Beryllium	ND	0.00200								
Cadmium	ND	0.00500								
Chromium	ND	0.00500								
Lead	ND	0.00500								
Nickel	ND	0.00500								
Selenium	ND	0.00500								
Silver	ND	0.00500								

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

LCS Sample ID: **MLCS-87502** Units: **mg/L** Analysis Date: **03-Nov-2014 14:40**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075278** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.04977	0.00500	0.05	0	99.5	80 - 120				
Arsenic	0.04833	0.00500	0.05	0	96.7	80 - 120				
Barium	0.04779	0.0200	0.05	0	95.6	80 - 120				
Beryllium	0.04972	0.00200	0.05	0	99.4	80 - 120				
Cadmium	0.04931	0.00500	0.05	0	98.6	80 - 120				
Chromium	0.04863	0.00500	0.05	0	97.3	80 - 120				
Lead	0.04878	0.00500	0.05	0	97.6	80 - 120				
Nickel	0.05053	0.00500	0.05	0	101	80 - 120				
Selenium	0.04697	0.00500	0.05	0	93.9	80 - 120				
Silver	0.05027	0.00500	0.05	0	101	80 - 120				

MS Sample ID: **HS14101234-01MS** Units: **mg/L** Analysis Date: **03-Nov-2014 14:58**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075285** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.4885	0.0500	0.5	0	97.7	80 - 120				
Arsenic	0.4818	0.0500	0.5	0	96.4	80 - 120				
Barium	0.5984	0.200	0.5	0.1207	95.5	80 - 120				
Beryllium	0.5281	0.0200	0.5	0	106	80 - 120				
Cadmium	0.4902	0.0500	0.5	0	98.0	80 - 120				
Chromium	0.4664	0.0500	0.5	0	93.3	80 - 120				
Lead	0.4906	0.0500	0.5	0	98.1	80 - 120				
Nickel	0.507	0.0500	0.5	0.0119	99.0	80 - 120				
Selenium	0.4957	0.0500	0.5	0	99.1	80 - 120				
Silver	0.4829	0.0500	0.5	0	96.6	80 - 120				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

MSD Sample ID: **HS14101234-01MSD** Units: **mg/L** Analysis Date: **03-Nov-2014 15:01**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075286** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.4984	0.0500	0.5	0	99.7	80 - 120	0.4885	2	20	
Arsenic	0.4942	0.0500	0.5	0	98.8	80 - 120	0.4818	2.53	20	
Barium	0.5986	0.200	0.5	0.1207	95.6	80 - 120	0.5984	0.0251	20	
Beryllium	0.5051	0.0200	0.5	0	101	80 - 120	0.5281	4.45	20	
Cadmium	0.4866	0.0500	0.5	0	97.3	80 - 120	0.4902	0.735	20	
Chromium	0.4929	0.0500	0.5	0	98.6	80 - 120	0.4664	5.53	20	
Lead	0.494	0.0500	0.5	0	98.8	80 - 120	0.4906	0.687	20	
Nickel	0.4977	0.0500	0.5	0.0119	97.2	80 - 120	0.507	1.85	20	
Selenium	0.4988	0.0500	0.5	0	99.8	80 - 120	0.4957	0.619	20	
Silver	0.471	0.0500	0.5	0	94.2	80 - 120	0.4829	2.51	20	

DUP Sample ID: **HS14101234-01DUP** Units: **mg/L** Analysis Date: **03-Nov-2014 14:47**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075281** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.0500					0.00142	0	25	
Arsenic	ND	0.0500					0.0041	0	25	
Barium	ND	0.200					0.1207	0	25	
Beryllium	ND	0.0200					-0.00005	0	25	
Cadmium	ND	0.0500					0.00023	0	25	
Chromium	ND	0.0500					-0.00013	0	25	
Lead	ND	0.0500					0.00302	0	25	
Nickel	ND	0.0500					0.0119	0	25	
Selenium	ND	0.0500					0.00376	0	25	
Silver	ND	0.0500					0.00022	0	25	

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87502a **Instrument: ICPMS05** **Method: SW1311/6020**

PDS Sample ID: **HS14101234-01BS** Units: **mg/L** Analysis Date: **03-Nov-2014 15:03**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075287** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	1.011	0.0500	1	0	101	75 - 125				
Arsenic	1.015	0.0500	1	0	101	75 - 125				
Barium	1.121	0.200	1	0.1207	100	75 - 125				
Beryllium	1.006	0.0200	1	0	101	75 - 125				
Cadmium	1.003	0.0500	1	0	100	75 - 125				
Chromium	1.001	0.0500	1	0	100	75 - 125				
Lead	1.021	0.0500	1	0	102	75 - 125				
Nickel	1.027	0.0500	1	0.0119	101	75 - 125				
Selenium	1.036	0.0500	1	0	104	75 - 125				
Silver	0.9445	0.0500	1	0	94.5	75 - 125				

SD Sample ID: **HS14101234-01 DIL SX** Units: **mg/L** Analysis Date: **03-Nov-2014 14:55**
Client ID: Run ID: **ICPMS05_244100** SeqNo: **3075284** PrepDate: **31-Oct-2014** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	ND	0.250					0.00142	0	10	
Arsenic	ND	0.250					0.0041	0	10	
Barium	0.1208	1.00					0.1207	0	10	J
Beryllium	ND	0.100					-0.00005	0	10	
Cadmium	ND	0.250					0.00023	0	10	
Chromium	ND	0.250					-0.00013	0	10	
Lead	ND	0.250					0.00302	0	10	
Nickel	ND	0.250					0.0119	0	10	
Selenium	ND	0.250					0.00376	0	10	
Silver	ND	0.250					0.00022	0	10	

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87521 **Instrument: HG03** **Method: SW7470**

MBLK Sample ID: **GBLKW4-103114** Units: **mg/L** Analysis Date: **31-Oct-2014 16:41**
Client ID: Run ID: **HG03_243930** SeqNo: **3072879** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.000200								

MBLK Sample ID: **GBLKT1-103014** Units: **mg/L** Analysis Date: **31-Oct-2014 16:51**
Client ID: Run ID: **HG03_243930** SeqNo: **3072885** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.000200								

LCS Sample ID: **GLCSW4-103114** Units: **mg/L** Analysis Date: **31-Oct-2014 16:42**
Client ID: Run ID: **HG03_243930** SeqNo: **3072880** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00517	0.000200	0.005	0	103	80 - 120				

MS Sample ID: **HS14101239-01MS** Units: **mg/L** Analysis Date: **31-Oct-2014 16:48**
Client ID: **21332-Soil-01** Run ID: **HG03_243930** SeqNo: **3072883** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0051	0.000200	0.005	-0.000007	102	75 - 125				

MSD Sample ID: **HS14101239-01MSD** Units: **mg/L** Analysis Date: **31-Oct-2014 16:49**
Client ID: **21332-Soil-01** Run ID: **HG03_243930** SeqNo: **3072884** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00512	0.000200	0.005	-0.000007	103	75 - 125	0.0051	0.391	20	

DUP Sample ID: **HS14101239-01DUP** Units: **mg/L** Analysis Date: **31-Oct-2014 16:46**
Client ID: **21332-Soil-01** Run ID: **HG03_243930** SeqNo: **3072882** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.000200					-0.000007	0	20	

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

MBLK Sample ID: **MBLK-87509** Units: **ug/L** Analysis Date: **31-Oct-2014 16:34**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074319** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
Cresols, Total	ND	15								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Nitrobenzene	ND	5.0								
Pentachlorophenol	ND	5.0								
Pyridine	ND	5.0								
Surr: 2,4,6-Tribromophenol	*65.99*	*5.0*	*100*	*0*	*66.0*	*39 - 153*				
Surr: 2-Fluorobiphenyl	*65.81*	*5.0*	*100*	*0*	*65.8*	*40 - 147*				
Surr: 2-Fluorophenol	*61.21*	*5.0*	*100*	*0*	*61.2*	*21 - 110*				
Surr: 4-Terphenyl-d14	*72.26*	*5.0*	*100*	*0*	*72.3*	*39 - 141*				
Surr: Nitrobenzene-d5	*62.44*	*5.0*	*100*	*0*	*62.4*	*37 - 140*				
Surr: Phenol-d6	*64.05*	*5.0*	*100*	*0*	*64.0*	*11 - 110*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

LCS Sample ID: **LCS-87509** Units: **ug/L** Analysis Date: **31-Oct-2014 17:41**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074320** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	70.68	5.0	100	0	70.7	55 - 120				
2,4,6-Trichlorophenol	71.88	5.0	100	0	71.9	55 - 120				
2,4-Dinitrotoluene	37.28	5.0	50	0	74.6	55 - 125				
Cresols, Total	192.3	15	250	0	76.9	40 - 120				
Hexachlorobenzene	39.31	5.0	50	0	78.6	55 - 120				
Hexachlorobutadiene	37.54	5.0	50	0	75.1	55 - 120				
Hexachloroethane	34.5	5.0	50	0	69.0	55 - 120				
Nitrobenzene	32.55	5.0	50	0	65.1	55 - 120				
Pentachlorophenol	76.53	5.0	100	0	76.5	50 - 135				
Pyridine	25.11	5.0	50	0	50.2	30 - 120				
Surr: 2,4,6-Tribromophenol	*76.19*	*5.0*	*100*	*0*	*76.2*	*39 - 153*				
Surr: 2-Fluorobiphenyl	*70.02*	*5.0*	*100*	*0*	*70.0*	*40 - 147*				
Surr: 2-Fluorophenol	*73.61*	*5.0*	*100*	*0*	*73.6*	*20 - 110*				
Surr: 4-Terphenyl-d14	*75.47*	*5.0*	*100*	*0*	*75.5*	*39 - 141*				
Surr: Nitrobenzene-d5	*64.79*	*5.0*	*100*	*0*	*64.8*	*37 - 140*				
Surr: Phenol-d6	*71.85*	*5.0*	*100*	*0*	*71.9*	*11 - 110*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

LCSD Sample ID: **LCSD-87509** Units: **ug/L** Analysis Date: **31-Oct-2014 18:03**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074321** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	71.23	5.0	100	0	71.2	55 - 120	70.68	0.771	25	
2,4,6-Trichlorophenol	70.42	5.0	100	0	70.4	55 - 120	71.88	2.06	25	
2,4-Dinitrotoluene	37.11	5.0	50	0	74.2	55 - 125	37.28	0.445	25	
Cresols, Total	186.1	15	250	0	74.5	40 - 120	192.3	3.25	25	
Hexachlorobenzene	38.79	5.0	50	0	77.6	55 - 120	39.31	1.33	25	
Hexachlorobutadiene	35.51	5.0	50	0	71.0	55 - 120	37.54	5.57	25	
Hexachloroethane	33.33	5.0	50	0	66.7	55 - 120	34.5	3.45	25	
Nitrobenzene	32.93	5.0	50	0	65.9	55 - 120	32.55	1.15	25	
Pentachlorophenol	75.8	5.0	100	0	75.8	50 - 135	76.53	0.956	25	
Pyridine	25.27	5.0	50	0	50.5	30 - 120	25.11	0.627	25	
Surr: 2,4,6-Tribromophenol	*73.66*	*5.0*	*100*	*0*	*73.7*	*39 - 153*	*76.19*	*3.38*	*25*	
Surr: 2-Fluorobiphenyl	*68.72*	*5.0*	*100*	*0*	*68.7*	*40 - 147*	*70.02*	*1.87*	*25*	
Surr: 2-Fluorophenol	*72.96*	*5.0*	*100*	*0*	*73.0*	*21 - 110*	*73.61*	*0.881*	*25*	
Surr: 4-Terphenyl-d14	*73.84*	*5.0*	*100*	*0*	*73.8*	*39 - 141*	*75.47*	*2.19*	*25*	
Surr: Nitrobenzene-d5	*62.48*	*5.0*	*100*	*0*	*62.5*	*37 - 140*	*64.79*	*3.64*	*25*	
Surr: Phenol-d6	*70.39*	*5.0*	*100*	*0*	*70.4*	*11 - 110*	*71.85*	*2.06*	*25*	

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: 87509 **Instrument: SV-5** **Method: SW1311/8270**

MS Sample ID: **HS14101152-01MS** Units: **ug/L** Analysis Date: **31-Oct-2014 18:48**
Client ID: Run ID: **SV-5_244048** SeqNo: **3074323** PrepDate: **31-Oct-2014** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	76.22	5.0	100	0	76.2	55 - 120				
2,4,6-Trichlorophenol	76.4	5.0	100	0	76.4	55 - 120				
2,4-Dinitrotoluene	37.92	5.0	50	0	75.8	55 - 125				
Cresols, Total	192	15	250	0	76.8	40 - 120				
Hexachlorobenzene	37.81	5.0	50	0	75.6	55 - 120				
Hexachlorobutadiene	34.62	5.0	50	0	69.2	55 - 120				
Hexachloroethane	34.78	5.0	50	0	69.6	55 - 120				
Nitrobenzene	34.37	5.0	50	0	68.7	55 - 120				
Pentachlorophenol	79.97	5.0	100	0	80.0	50 - 135				
Pyridine	26.22	5.0	50	0	52.4	30 - 120				
Surr: 2,4,6-Tribromophenol	*73.17*	*5.0*	*100*	*0*	*73.2*	*39 - 153*				
Surr: 2-Fluorobiphenyl	*73.77*	*5.0*	*100*	*0*	*73.8*	*40 - 147*				
Surr: 2-Fluorophenol	*59.53*	*5.0*	*100*	*0*	*59.5*	*21 - 110*				
Surr: 4-Terphenyl-d14	*69.6*	*5.0*	*100*	*0*	*69.6*	*39 - 141*				
Surr: Nitrobenzene-d5	*66.59*	*5.0*	*100*	*0*	*66.6*	*37 - 140*				
Surr: Phenol-d6	*65.41*	*5.0*	*100*	*0*	*65.4*	*11 - 110*				

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MBLK Sample ID: **VBLKW-141031** Units: **ug/L** Analysis Date: **31-Oct-2014 17:34**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074615** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
2-Butanone	ND	10								
Benzene	ND	5.0								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroform	ND	5.0								
Tetrachloroethene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl chloride	ND	2.0								
Surr: 1,2-Dichloroethane-d4	*49.44*	*5.0*	*50*	*0*	*98.9*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*49.07*	*5.0*	*50*	*0*	*98.1*	*72.4 - 125*				
Surr: Dibromofluoromethane	*49.52*	*5.0*	*50*	*0*	*99.0*	*71.2 - 125*				
Surr: Toluene-d8	*51.23*	*5.0*	*50*	*0*	*102*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MBLK Sample ID: **MBLKV1-141030** Units: **ug/L** Analysis Date: **31-Oct-2014 19:39**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074619** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1-Dichloroethene	ND	100								
1,2-Dichloroethane	ND	100								
1,4-Dichlorobenzene	ND	100								
2-Butanone	ND	200								
Benzene	ND	100								
Carbon tetrachloride	ND	100								
Chlorobenzene	ND	100								
Chloroform	ND	100								
Tetrachloroethene	ND	100								
Trichloroethene	ND	100								
Vinyl chloride	ND	40								
Surr: 1,2-Dichloroethane-d4	*963.6*	*100*	*1000*	*0*	*96.4*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*963.5*	*100*	*1000*	*0*	*96.4*	*72.4 - 125*				
Surr: Dibromofluoromethane	*961.8*	*100*	*1000*	*0*	*96.2*	*71.2 - 125*				
Surr: Toluene-d8	*1023*	*100*	*1000*	*0*	*102*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

LCS Sample ID: **VLCSW-141031** Units: **ug/L** Analysis Date: **31-Oct-2014 16:22**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074614** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	55.6	5.0	50	0	111	73 - 124				
1,2-Dichloroethane	50.48	5.0	50	0	101	76 - 120				
1,4-Dichlorobenzene	53.3	5.0	50	0	107	70 - 130				
2-Butanone	110.7	10	100	0	111	70 - 130				
Benzene	50.13	5.0	50	0	100	70 - 128				
Carbon tetrachloride	51.07	5.0	50	0	102	70 - 130				
Chlorobenzene	50.4	5.0	50	0	101	72 - 127				
Chloroform	55.66	5.0	50	0	111	70 - 130				
Tetrachloroethene	49.99	5.0	50	0	100.0	70 - 130				
Trichloroethene	49.64	5.0	50	0	99.3	72 - 129				
Vinyl chloride	52.52	2.0	50	0	105	70 - 130				
Surr: 1,2-Dichloroethane-d4	*50.87*	*5.0*	*50*	*0*	*102*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*50.81*	*5.0*	*50*	*0*	*102*	*72 - 125*				
Surr: Dibromofluoromethane	*50.64*	*5.0*	*50*	*0*	*101*	*71 - 125*				
Surr: Toluene-d8	*49.59*	*5.0*	*50*	*0*	*99.2*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MS Sample ID: **HS14101248-04MS** Units: **ug/L** Analysis Date: **31-Oct-2014 18:27**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074617** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	257.4	25	250	0	103	73 - 124				
1,2-Dichloroethane	259.4	25	250	0	104	76 - 120				
1,4-Dichlorobenzene	265.3	25	250	0	106	70 - 130				
2-Butanone	471	50	500	0	94.2	70 - 130				
Benzene	252.9	25	250	0	101	70 - 128				
Carbon tetrachloride	252.2	25	250	0	101	70 - 130				
Chlorobenzene	252.9	25	250	0	101	72 - 127				
Chloroform	272.4	25	250	0	109	70 - 130				
Tetrachloroethene	518.3	25	250	271.5	98.7	70 - 130				
Trichloroethene	286.9	25	250	41.17	98.3	72 - 129				
Vinyl chloride	202.3	10	250	0	80.9	70 - 130				
Surr: 1,2-Dichloroethane-d4	*241.7*	*25*	*250*	*0*	*96.7*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*256.1*	*25*	*250*	*0*	*102*	*72 - 125*				
Surr: Dibromofluoromethane	*246*	*25*	*250*	*0*	*98.4*	*71 - 125*				
Surr: Toluene-d8	*249.7*	*25*	*250*	*0*	*99.9*	*75 - 125*				

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244064 **Instrument: VOA6** **Method: SW1311/8260B**

MSD Sample ID: **HS14101248-04MSD** Units: **ug/L** Analysis Date: **31-Oct-2014 18:51**
Client ID: Run ID: **VOA6_244064** SeqNo: **3074618** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1-Dichloroethene	265.4	25	250	0	106	73 - 124	257.4	3.07	20	
1,2-Dichloroethane	263	25	250	0	105	76 - 120	259.4	1.39	20	
1,4-Dichlorobenzene	278.6	25	250	0	111	70 - 130	265.3	4.87	20	
2-Butanone	530.6	50	500	0	106	70 - 130	471	11.9	20	
Benzene	259.5	25	250	0	104	70 - 128	252.9	2.56	20	
Carbon tetrachloride	264	25	250	0	106	70 - 130	252.2	4.56	20	
Chlorobenzene	259.9	25	250	0	104	72 - 127	252.9	2.74	20	
Chloroform	279	25	250	0	112	70 - 130	272.4	2.38	20	
Tetrachloroethene	518.4	25	250	271.5	98.8	70 - 130	518.3	0.0307	20	
Trichloroethene	295.4	25	250	41.17	102	72 - 129	286.9	2.93	20	
Vinyl chloride	212	10	250	0	84.8	70 - 130	202.3	4.71	20	
Surr: 1,2-Dichloroethane-d4	*241.2*	*25*	*250*	*0*	*96.5*	*70 - 125*	*241.7*	*0.185*	*20*	
Surr: 4-Bromofluorobenzene	*255.7*	*25*	*250*	*0*	*102*	*72 - 125*	*256.1*	*0.148*	*20*	
Surr: Dibromofluoromethane	*243.9*	*25*	*250*	*0*	*97.6*	*71 - 125*	*246*	*0.861*	*20*	
Surr: Toluene-d8	*247.7*	*25*	*250*	*0*	*99.1*	*75 - 125*	*249.7*	*0.795*	*20*	

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
WorkOrder: HS14101239
Project: Cross Manufacturing

QC BATCH REPORT

Batch ID: R244116 **Instrument: WetChem_HS** **Method: SW9045B**

LCS Sample ID: **LCS-244116** Units: **pH Units** Analysis Date: **03-Nov-2014 14:30**
Client ID: Run ID: **WetChem_HS_244116** SeqNo: **3075574** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.02	0.100	6	0	100	97 - 103				

DUP Sample ID: **HS14101107-01DUP** Units: **pH Units** Analysis Date: **03-Nov-2014 14:30**
Client ID: Run ID: **WetChem_HS_244116** SeqNo: **3075575** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.87	0.100					6.82	0.73	10	
Temp Deg C @pH	22.4	0					22.4	0		

The following samples were anayzed in this batch: HS14101239-01

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

Client: Remediation Services, Inc
Project: Cross Manufacturing
WorkOrder: HS14101239

QUALIFIERS, ACRONYMS, UNITS

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

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

Unit Reported	Description
µg/L	Micrograms per Liter
Date	
pH Units	

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	AR - 2014	27-Mar-2015
California	2919	31-Jul-2015
Dept of Defense	L2231 Rev 3-20-2014	22-Dec-2015
Illinois	003403	09-May-2015
Kansas	E-10352 8/15/2013-2014	30-Nov-2014
Kentucky	KY 2014-2015	30-Apr-2015
Louisiana	03087 2014/2015	30-Jun-2015
North Carolina	624 - 2014	31-Dec-2014
North Dakota	R-193 2025	30-Apr-2015
Oklahoma	2014-128	31-Aug-2015
Texas	T104704231-14-14	30-Apr-2015

Client: Remediation Services, Inc
Project: Cross Manufacturing
Work Order: HS14101239

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	11D
HS14101239-01	21332-Soil-01	Login	10/29/2014 5:07:12 PM	RPG	Sub

ALS Group USA, Corp Date: 05-Nov-14

Sample Receipt Checklist

Client Name: RSI - DIRECT
Work Order: HS14101239

Date/Time Received: **29-Oct-2014 09:17**
Received by: **DES**

Checklist completed by: *Raegen Giga* eSignature — 29-Oct-2014 Date
Reviewed by: *Bernadette A. Fini* eSignature — 30-Oct-2014 Date

Matrices: **soil**
Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c/2.1c c/u	IR 1	
Cooler(s)/Kit(s):	23742		
Date/Time sample(s) sent to storage:	10/29/2014 17:15		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: 0 Regarding:

Comments:

Corrective Action:

ALS Environmental

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

Chain of Custody Form

Page ____ of ____

COC ID: 109530

HS14101239

Remediation Services, Inc
Cross Manufacturing

Customer Information		Project Information		ALS Project Manager:	
Purchase Order		Project Name	Cross Manufacturing	A	TCLP VOC (1311/8260)
Work Order		Project Number	Cross Manufacturing	B	TCLP SVOC (1311/8270)
Company Name	Remediation Services, Inc	Bill To Company	Remediation Services, Inc	C	TCLP Metals (1311/7470) - RCRA 8
Send Report To	Dan Roth	Invoice Attn		D	~~PCBs (8082)~~
Address	2735 South 10th Street	Address	2735 South 10th Street	E	RCI - Reactive Cyanide, Reactive Sulfide
City/State/Zip	Independence	City/State/Zip	Independence	F	RCI - pH, Ignitability
Phone		Phone	(620) 331-1200	G	
Fax	(620) 331-6216	Fax		H	
e-Mail Address	droth@rsi-ks.com	e-Mail Address		I	
				J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	21332 - Soil - 01	10-28-14	08:00	Soil	None	5	✓	✓	✓		✓	✓					
2																	
3																	
4																	
5																	
6		NA	10-28-14														
7		COC															
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Charles Silicco

Shipment Method:

Required Turnaround Time: (Check Box) [X] Std 10 WK days [ ] 5 WK Days [ ] 2 WK Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by: Charles Silicco Date: 10-28-14 Time: 12:00pm

Received by:

Relinquished by: Date: Time:

Received by (Laboratory): R. Cuna 10/28/14 09:17

Logged by (Laboratory): Date: Time:

Checked by (Laboratory):

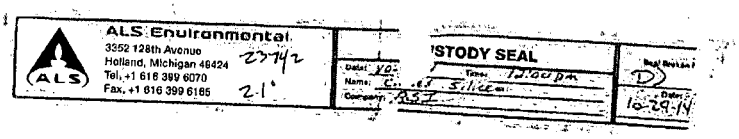
Notes:

Cooler ID	Cooler Temp.
23542	2.1°

QC Package: (Check One Box Below)
[X] Level 2 Std QC [ ] Level 3 Std QC/Raw da [ ] Level 4 SW846/CLP [ ] Other/EDD [ ] TRRP ChkList [ ] TRRP Level 4

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

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


ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel, +1 616 399 6070
Fax, +1 616 399 6165
23742
2.1
STODY SEAL
Time: 12:30 pm
Name:
Company: ASI
Date: 10-29-14


FedEx
TRK# 8035 6168 7921
WED - 29 OCT 10:30A
PRIORITY OVERNIGHT
77099
TX-US
IAH
AB SGRA

ALS Environmental

05-Nov-2014

Bernadette Fini
ALS Environmental
10450 Stancliff Rd
Suite 210
Houston, TX 77099

Re: **HS14101239** Work Order: **14101786**

Dear Bernadette,

ALS Environmental received 1 sample on 30-Oct-2014 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 10.

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

Sincerely,

Chad Whelton

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

NELAP ACCREDITED ENVIRONMENTAL LABORATORY

Certificate No: MN 532786

ALS Group USA, Corp

Date: 05-Nov-14

Client: ALS Environmental
Project: HS14101239
Work Order: **14101786**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
14101786-01	HS14101239-01	Soil	21332-Soil-01	10/28/2014 08:00	10/30/2014 09:30	☐

Client: ALS Environmental
Project: HS14101239
WorkOrder: **14101786**

QUALIFIERS, ACRONYMS, UNITS

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

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
°F	Degrees Fahrenheit
mg/Kg	Milligrams per Kilogram

ALS Group USA, Corp

Date: *05-Nov-14*

Client: ALS Environmental
Project: HS14101239
Sample ID: HS14101239-01
Collection Date: 10/28/2014 08:00 AM

Work Order: 14101786
Lab ID: 14101786-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, REACTIVE			**SW7.3.3.2**			Analyst: **AXL**
Cyanide, Reactive	ND		100	mg/Kg	1	11/4/2014 04:00 PM
FLASHPOINT, OPEN-CUP			**D92**			Analyst: **MB**
Flashpoint, Open-cup	**>200**			°F	1	11/4/2014 09:00 AM
SULFIDE, REACTIVE			**SW7.3.4.2**			Analyst: **AXL**
Sulfide, Reactive	ND		100	mg/Kg	1	11/4/2014 04:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 05-Nov-14

Client: ALS Environmental

Work Order: 14101786

Project: HS14101239

QC BATCH REPORT

Batch ID: **R151788** Instrument ID **WETCHEM** Method: **SW7.3.4.2**

MBLK Sample ID: **MB-R151788-R151788** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**

Client ID: Run ID: **WETCHEM_141104H** SeqNo: **3017208** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	ND	100								

LCS Sample ID: **LCS-R151788-R151788** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**

Client ID: Run ID: **WETCHEM_141104H** SeqNo: **3017209** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	1776	100	2149	0	82.6	60-120	0			

The following samples were analyzed in this batch: 14101786-01A

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

Client: ALS Environmental
Work Order: 14101786
Project: HS14101239

QC BATCH REPORT

Batch ID: **R151789** Instrument ID **WETCHEM** Method: **SW7.3.3.2**

MBLK Sample ID: **MBLK-R151789-R151789** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_141104I** SeqNo: **3017213** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	ND	100								

LCS Sample ID: **LCS-R151789-R151789** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: Run ID: **WETCHEM_141104I** SeqNo: **3017214** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	124.8	100	125	0	99.8	75-125	0			

MS Sample ID: **14101786-01A MS** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: **HS14101239-01** Run ID: **WETCHEM_141104I** SeqNo: **3017217** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	248.1	100	250	0	99.2	50-150	0			

MSD Sample ID: **14101786-01A MSD** Units: **mg/Kg** Analysis Date: **11/4/2014 04:00 PM**
Client ID: **HS14101239-01** Run ID: **WETCHEM_141104I** SeqNo: **3017218** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	248.1	100	250	0	99.2	50-150	248.1	0	35	

The following samples were analyzed in this batch: 14101786-01A

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

Client: ALS Environmental
Work Order: 14101786
Project: HS14101239

QC BATCH REPORT

Batch ID: **R151802** Instrument ID **WETCHEM** Method: **D92**

LCS Sample ID: **LCS-R151802-R151802** Units: **°F** Analysis Date: **11/4/2014 09:00 AM**
Client ID: Run ID: **WETCHEM_141104N** SeqNo: **3017495** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Flashpoint, Open-cup	80	0	81	0	98.8	97-103	0			

The following samples were analyzed in this batch: 14101786-01A

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

14101786

CHAIN OF CUSTODY RECORD

ALS Environmental

Page 1 of 1

Date 29 Oct 2014
COC ID 1728
Due date 05 NOV 14

Subcontractor

ALS Laboratory Group
3352 128th Ave.
Holland, MI 494249263

Phone 6163996070
Fax 6163996185

Customer Information		Project Information	
PO		Project Name	HS14101239

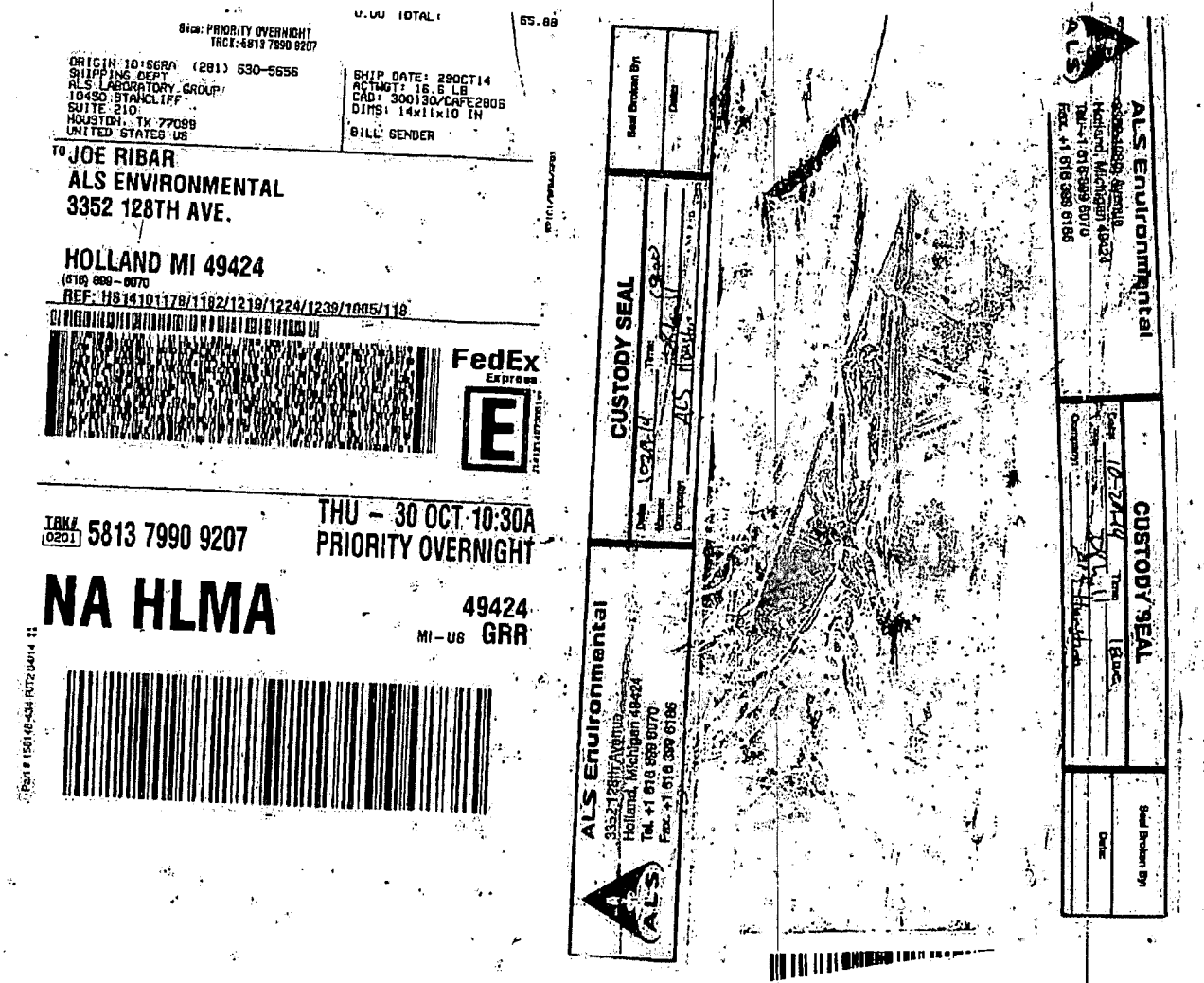
Company Name	ALS Houston	Company Name	ALS Houston
		Inv Attn	Accounts Payable
Address	10450 Stancliff Rd, Ste 210	Address	10450 Stancliff Rd, Ste 210
	Houston, TX 77099		Houston, TX 77099
Phone	281-530-5656	Phone	281-530-5656
Email1	Bernadette.finl@alsglobal.com	Email2	

Lab ID	Client Samp ID	Collection Date	Matrix	Analysis Requested
HS14101239-01	21332-Soil-01	28-Oct-14 08:00 am	Soil	RCN_S
				RS_S
				SUB_FLASHPOINT

Comments Please analyze for the above. Send report to Bernadette.finl@alsglobal.com. CC jumoke.lawal@alsglobal.com

Relinquished by:	Date/Time:	Received by:	Date/Time:	Cooler IDs:	Report/QC Level
R Giga	10/29/14 18:00				
			10/30/14 0930		

3.8°c



Ship: PRIORITY OVERNIGHT
TRK#: 5813 7990 9207

55.88

ORIGIN ID:16GRA (281) 530-5656
SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 29OCT14
ACTWGT: 16.6 LB
CAD: 3001307CAFE2805
DIMS: 14x11x10 IN
BILL SENDER

TO JOE RIBAR
ALS ENVIRONMENTAL
3352 128TH AVE.

HOLLAND MI 49424
(616) 399-6070
REF: HS14101178/1182/1219/1224/1239/1685/118

FedEx Express

TRK# 0201 5813 7990 9207

THU - 30 OCT 10:30A
PRIORITY OVERNIGHT

NA HLMA

49424
MI-US GRR

Part # 158148-434 RITC 04/14

CUSTODY SEAL
Date 10/24/14
Time 9:30
Number
Company ALS Holland
Seal Broken By
Date

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL
Date 10-24-14
Time 1800
Number
Company ALS Holland
Seal Broken By
Date

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **ALS - HOUSTON** Date/Time Received: **30-Oct-14 09:30**

Work Order: **14101786** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 30-Oct-14 (Date) Reviewed by: Chad Whelton (eSignature) 30-Oct-14 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.8 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/30/2014 4:40:41 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

NH Concrete
Load 1

FORD COUNTY LANDFILL

100 Gunsmoke
Dodge City, KS 67801
(620) 225-5268

DRIVER COPY

RECEIPT DOCUMENT NUMBER

43222221

Bill To:

000680 NORTHEND DISPOSAL
PO BOX 428

DODGE CITY KS 67801

Hauler:

000680 NORTHEND DISPOSAL
PO BOX 428

DODGE CITY KS 67801

Date	Entry Time	Operator	Exit Time	Operator	Gross Weight	Tare Weight	Net Weight
11/07/2014	09:12		09:28		(56620 LB)	(34480 LB)	(22160 LB)
00224356	Scale 01		Scale 01		Scale 01	Scale 01	
Vehicle No:	Type	Plate			(28.31 T)	(17.23 T)	(11.08 T)
NE416	Rolloff 1				Transaction Type		

Quantity	WC	Description/Origin	Units	Unit Price	Normal Amount
11.0800	1000	CONC-SOIL FORD COUNTY ALL ORIGINS	TON 100.00%		

20 Disco

I hereby certify that the information on this form is true to the best of my knowledge.

DRIVER NAME

PRINT: _____ SIGNATURE: CJL

Document Total

Lewis

LAST

G. Additional Descriptions for Materials Listed Above

3 LOADS NH CONCRETE = 28.66 TONS

NH concrete
LOAD 2

FORD COUNTY LANDFILL

100 Gunsmoke
Dodge City, KS 67801
(620) 225-5286

DRIVER COPY

RECEIPT DOCUMENT NUMBER

43222239

Bill To:

000680 NORTHEND DISPOSAL
PO BOX 428

DODGE CITY KS 67801

Hauler:

000680 NORTHEND DISPOSAL
PO BOX 428

DODGE CITY KS 67801

Date	Entry Time	Operator	Exit Time	Operator	Gross Weight	Tare Weight	Net Weight
11/07/2014	12:09		12:28		(66640 LB)	(35520 LB)	(33120 LB)
00224375	Scale 01		Scale 01		Scale 01	Scale 01	
					(34.32 T)	(17.76 T)	(16.56 T)

Vehicle No.	Type	Plate	Transaction Type
NE416	Rolloff 1		Normal

Quantity	WC	Description/Origin	Units	Unit Price	Amount
16.5600	1000	COND-SOIL FORD COUNTY ALL ORIGINS	TON 100.00%		

30 DISCO

I hereby certify that the information on this form is true to the best of my knowledge.

DRIVER NAME

PRINT: _____ SIGNATURE: CJH

Document Total	

Remediation Services IN LEWIS

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. IG-001

2. Page 1 of 1

3. Generator's Name and Mailing Address
Cross Manufacturing
100 James H. Cross Blvd.
Lewis, KS 67552 (620) 324-5525

4. Generator's Phone ( )

5. Transporter 1 Company Name: Nuttcal Disposal Services

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone 620 227 3371

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
Ford County Landfill
13049 110 Road – Dodge City, KS 67801

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone 620-225-5263

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-Hazardous Soil From Installation of Injection Gallery	1	RO	10-12	Tons
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
KS SWDA No. [illegible]38
This Authorization Expires – _____
Weighed in at Ford

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.
On behalf of Cross Manufacturing

Printed/Typed Name: [illegible] Signature: [signature] Date: Month 11 Day 17 Year 14

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: [illegible] Signature: [signature] Date: Month 11 Day 17 Year 14

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name Signature Date: Month Day Year

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. IG-002

2. Page 1 of 1

3. Generator's Name and Mailing Address
Cross Manufacturing
100 James H. Cross Blvd.
Lewis, KS 67552 (620) 324-5525

4. Generator's Phone ( )

5. Transporter 1 Company Name: Nordmeier Disposal Services

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
Ford County Landfill
13049 110 Road - Dodge City, KS 67801

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone 620-225-5288

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-Hazardous Soil From Installation of Injection Gallery	1	RO	10-12	Tons
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
KS SWDA No. 11438
This Authorization Expires - May 6, 2015

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.
On behalf of Cross Manufacturing

Date

Printed/Typed Name: Raymond Law, EHS Compliance Coordinator | Signature | Month 11 | Day 7 | Year 14

17. Transporter 1 Acknowledgement of Receipt of Materials

Date

Printed/Typed Name | Signature | Month 11 | Day 7 | Year 14

18. Transporter 2 Acknowledgement of Receipt of Materials

Date

Printed/Typed Name | Signature | Month | Day | Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Date

Printed/Typed Name | Signature | Month | Day | Year

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE

Appendix B – Environmental Use Controls

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
BUREAU OF ENVIRONMENTAL REMEDIATION
Application for an
ENVIRONMENTAL USE CONTROL
For property located in the State of Kansas

Application Form Instructions: *Please type or print legibly. Incomplete applications may be returned to the applicant. If any of the information requested is not applicable, please enter "NA" in the blank.*
Please refer to Appendix A for additional instructions.

SECTION I. PROPERTY INFORMATION

Name of Site: Cross Manufacturing Facility
Property Address: 100 James H Cross Blvd
City (or Township): Lewis County: Edwards Zip Code: 67552
Township: 24 South Range: 18W (E/W) Section: 25 Quarter(s): SE/4NE/4
Tax Lot #: Portion of Lot #003 Property Size (in acres): .25
Has a legal survey been conducted on the portion of property subject to this application?
☒ Yes ☐ No
Please include a copy of the legal survey and a map that clearly depicts the property boundaries.
Current use of property: Cross manufactures hydraulic cylinders at this facility.
Future use of property (if known): Same
Land use surrounding property (check most applicable description or combination of descriptions):
☒ Residential ☒ Industrial ☐ Commercial ☒ Agricultural ☐ Other (explain)
Current zoning of property: No zoning in Lewis.
Local governmental entity responsible for zoning this property: N/A
Are there mineral rights associated with this property? ☒ *Yes ☐ No
Is there an easement(s) associated with this property? ☐ *Yes ☒ No
**Please attach contact information for the holder(s) of any mineral rights and/or easement(s).*
Do you have a copy of the current deed? ☒ *Yes ☐ No **If yes, please provide a copy.*
Is there more than one owner of the property? ☐ *Yes ☒ No **If yes, please provide each Owners information.*
Property Owner's Name: Cross Mfg,, Inc. Organization: Cross Manufacturing, Inc.
Owner's Mailing Address: 11011 King Street, Suite 210
City: Overland Park State: Kansas Zip Code: 66210
Telephone: (913) 451-1233 Fax: (913) 451-1235 Email: aaron.carriker@crossmfg.com

SECTION II. APPLICANT INFORMATION

Is the Owner of the Property the applicant? ☒ Yes ☐ *No
**If an Authorized Representative of the Owner(s) is submitting the application please provide the following information.*
Authorized Representative: John H. Cross, CEO, Cross Manufactuing, Inc.
Application Contact: Raymond Law Title: EH&S Corporate Coordinator
Mailing Address: 100 James H Cross Blvd
City: Lewis State: Kansas Zip Code: 67552
Telephone: (620) 324-5525 Fax: (620) 324-5737 Email: raymond.law@crossmfg.com
Please attach a notarized letter of authorization, provided in appendix B, for each owner.

Kansas Department of Health and Environment/Bureau of Environmental Remediation
APPLICATION FOR AN ENVIRONMENTAL USE CONTROL

SECTION III. NATURE OF POTENTIAL CONTAMINATION

Contaminant Type identified at the property (check all that you are aware of):

- ☐ Solvents/degreasers
- ☐ Pesticides (herbicides, insecticides, etc.)
- ☒ Metals
- ☐ Petroleum products
- ☐ Inorganics (salt, soda ash, etc.)
- ☐ PCBs
- ☐ Acids/bases
- ☐ Fertilizer (nitrate, ammonia)
- ☐ Sludge
- ☐ Paint/paint wastes
- ☒ Other (list) limited to hexavalent chromium

Contaminated media on property:

- ☒ Surface Soil
- ☒ Subsurface Soil
- ☐ Groundwater
- ☐ Surface Water
- ☐ Sediments
- ☐ Air

Please reference any relevant documents that will provide the department with a detailed description of the contamination and the proposed remedy. Attach a list of additional references if necessary.

Title/Date: KDHE Voluntary Agreement 12VCP0006 February 23, 2015
Title/Date:
Title/Date:

Identify the KDHE Cleanup Program currently addressing the property:

- ☐ State Cooperative
- ☒ Voluntary Cleanup
- ☐ Brownfields
- ☐ State Water Plan
- ☐ Dry Cleaner Trust Fund
- ☐ Above/Underground Storage Tank
- ☐ Other:

Please describe the remedy for the contamination on the property:

Hexavalent chromium contamination in soils treated in situ to less than Tier II industrial/commercial cleanup levels. Reference KDHE VC Plan for details.

Is active remediation occurring at the property? ☐ Yes ☒ No

Will contamination be left on the subject property at concentrations above levels allowing unrestricted residential use following a KDHE approved remediation? ☒ Yes ☐ No ☐ Unknown

SECTION IV. REQUESTED RESTRICTIONS/REQUIREMENTS/FREQUENCY

REQUESTED RESTRICTIONS:
Please check all that apply:

- ☐ Restrict excavation, dredging, construction, or digging activities
- ☐ Restrict drilling or using water wells for domestic or other purposes
- ☐ Restrict or limit access to property
- ☒ Restrict land use
- ☐ Restrict the type of plant growth or vegetative cover
- ☒ Other Restrictions – Please specify: _____

Please note the restrictions applied for in this application will be specified in a property-specific Environmental Use Control Agreement approved by the department and filed with the Register of Deeds in the county where the subject property is located.

POST-REMEDIATION REQUIREMENTS:
Please check all that apply:

- ☐ Posting notices, maintaining postings
- ☐ Groundwater monitoring
- ☐ Protective structure maintenance (patching, erosion control, regrading, etc.)
- ☐ Vegetative maintenance (mowing, watering, planting, etc.)
- ☐ Fence maintenance
- ☒ Other Requirements – Please specify: NONE

MONITORING/INSPECTION:

Monitoring Responsibility: ☐ Owner ☐ Authorized Representative ☐ KDHE ☒ N/A

Frequency: ☐ Every five years ☐ Annual ☐ Semi-annual ☐ Quarterly ☒ Other - Please specify: N/A

Inspection Responsibility: ☐ Owner ☐ Authorized Representative ☐ KDHE

Frequency: ☐ Every five years ☐ Annual ☐ Semi-annual ☐ Quarterly ☒ Other - Please specify: N/A

Upon approval of an Environmental Use Control Agreement, does the applicant agree to allow access to KDHE personnel or contractors for the purpose of inspecting the property to ensure the requested restrictions are being maintained?

☒ Yes ☐ No*

*Please note this application will not be approved if the response to this question is "NO."

Please indicate the preferred payment schedule for the proposed Environmental Use Control?

- ☐ One-time payment
- ☐ Long-Term Care Agreement (The agreement will specify the amount and frequency of payment).

SECTION V. APPLICATION TO PARTICIPATE TERMS/APPLICATION SIGNATURE

The undersigned has voluntarily applied to the Kansas Department of Health and Environment/Bureau of Environmental Remediation (KDHE/BER) to restrict the use of, or activities on, the property defined in this application due to residual contamination remaining on the subject property above regulatory limits for unrestricted "residential" use. The undersigned agrees that based on this application the KDHE/BER shall issue an Environmental Use Control Agreement to restrict specific use of, or activities on, the subject property. The Environmental Use Control Agreement will contain property-specific restrictions identified in this application as approved by the department, inspection frequencies, access provisions, maintenance requirements, funding requirements, and any other requirements associated with this application. The applicant agrees to register an approved, notarized Environmental Use Control Agreement with the Register of Deeds in the county in which the property is located.

BER shall determine, and notify the undersigned accordingly, if the subject property is eligible for an Environmental Use Control. If the subject property is determined eligible, the undersigned shall sign an Environmental Use Control Agreement describing the voluntary restrictions requested by the applicant, register the Environmental Use Control Agreement with the Register of Deeds, and submit a notarized copy to the KDHE/BER within 90 days of KDHE/BER approval of this application.

Execution of this application form does not constitute an Environmental Use Control, and the undersigned shall not be bound to proceed with the voluntary restrictions. By completing and signing this application, the undersigned does not admit or assume liability for contamination at the property. The undersigned may terminate this application at any time by notifying KDHE/BER.

The application should be submitted to :

Environmental Use Control Program
Remedial Section
Kansas Department of Health and Environment
Bureau of Environmental Remediation
1000 SW Jackson, Suite 410 Topeka, Kansas 66612-1367

Name: (print or type) Raymond Law Title: EH&S Corp. Coordinator

Signature: Raymond Law Date: December 14, 2015

CROSS MANUFACTURING, INC.
Dependable Hydraulics
11011 King Street • Suite 210 • Overland Park, Kansas 66210
Phone: (913) 451-1233 Fax: (913) 451-1235

December 11, 2015

VIA U.S. MAIL AND E-MAIL: KWHEELER@KDHEKS.GOV

Environmental Use Control Program
Remedial Section
Attn: Kelsee Wheeler
Kansas Department of Health and Environment
Bureau of Environmental Remediation
1000 SW Jackson, Suite 540
Topeka, KS 66612-1367

RE: Authorization for Environmental Use Control Application

Dear Ms. Wheeler:

I, John H. Cross, President of Cross Manufacturing, Inc. ("CMI"), am familiar with environmental work performed on CMI's property through the VCP, under KDHR Voluntary Agreement 12VCP0006 February 23, 2015, which is on file at KDHE. I am aware that the activities contemplated herein may restrict certain activities on CMI's property and are being performed voluntarily pursuant to the Environmental Use Control (EUC) Act ("K.S.A. 65-1,221 et seq.).

Raymond Law of CMI is hereby authorized to make application on behalf of CMI to the EUC program.

I understand that, with my approval, I will be the signatory of any EUC Agreement applied to CMI property.

CROSS MANUFACTURING, INC.

John H. Cross, Pres.
John H. Cross, President

State of Kansas)
County of Johnson)

This instrument was acknowledged before me on December 11th 2015 by John H. Cross whose identity was proved to me on the basis of satisfactory evidence.

Sondra Todd
Notary Public

NOTARY PUBLIC
STATE OF KANSAS
SONDRA TODD
My Appointment Expires 7-18-18

My appointment expires: 7-18-18

Garber Surveying Service, P.A.

2908 North Plum St.
Hutchinson, Kansas 67502
Phone 620 663-7032 • FAX 620 663-7401

511 North Poplar St.
Newton, Kansas 67114
Phone 316 283-5053 • FAX 316 283-5073

115 East Marlin
McPherson, Kansas 67460
Phone 620 241-4441 • FAX 620 241-4458

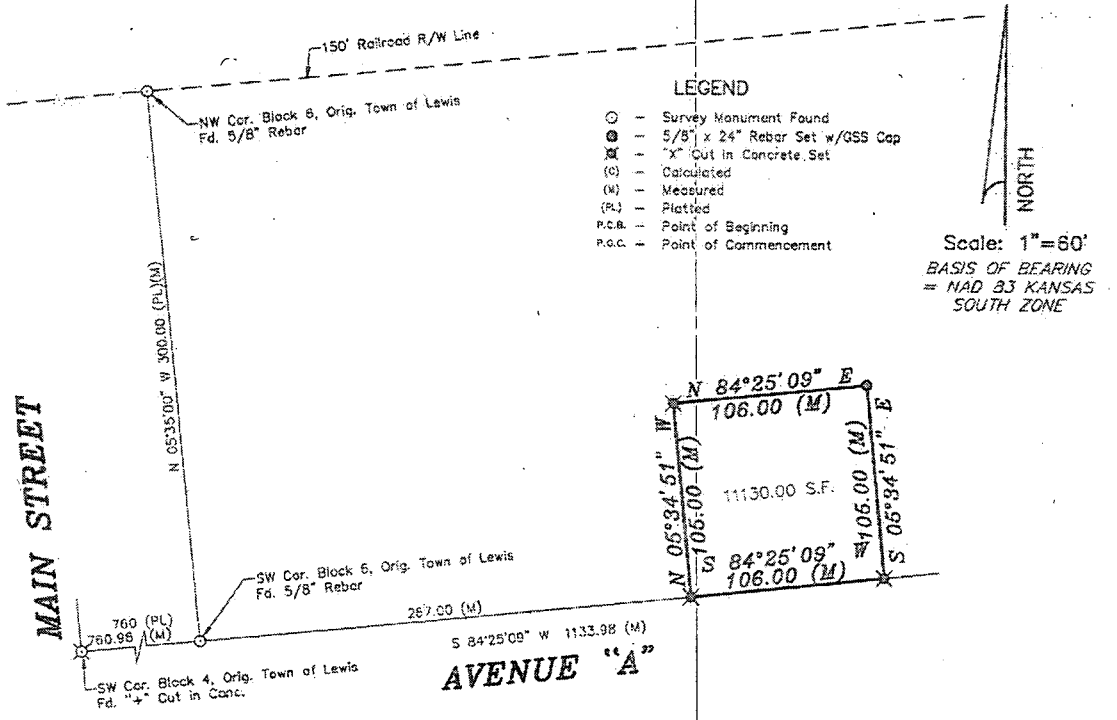
Project No. G2015-841

SURVEY FOR: REMEDIATION SERVICES, INC.

DESCRIPTION:

A portion of the Northwest Quarter of Section 25, Township 24 South, Range 16 West of the 6th Principal Meridian in the Town of Lewis, Edwards County, Kansas, more particularly described as follows:

Commencing at the Southwest corner of Block 5, Original Town of Lewis; thence with a bearing North 84°25'09" East (basis of bearings is NAD83 Kansas South Zone) along the South line of said Block 6 and the extension thereof a distance of 267.00 feet for the point of beginning; thence North 05°34'51" West perpendicular to the South line of said Block 6 a distance of 105.00 feet; thence North 84°25'09" East parallel with the South line of said Block 6 a distance of 106.00 feet; thence South 05°34'51" East perpendicular to the South line of said Block 6 a distance of 105.00 feet to the extension of the South line of said Block 6; thence South 84°25'09" West along the extension of the South line of said Block 6 a distance of 106.00 feet to the point of beginning containing 11,130.00 square feet.



DATE OF FIELD WORK: Dec. 1, 2015

SURVEYOR'S CERTIFICATE:

I hereby certify this plat to be a true, correct and complete representation of the property described above as surveyed under my supervision.

Dated: Dec. 9, 2015

DANIEL E. GARBER LICENSED LAND SURVEYOR

Daniel E. Garber LS #683 12-9-2015

DEED RECORD NO. 58 PAGE 329

CHICAGO TITLE INSURANCE COMPANY
KANSAS CITY DIVISION

KANSAS [redacted]/QUITCLAIM DEED
(Statutory Form)

HI-PLAINS LEASING, INC., a Kansas corporation, ----------

~~convey(s) and warrant(s)~~ / Quitclaim(s) to ----------

CROSS MANUFACTURING, INC., a Kansas corporation, ----------

~~as joint tenants and not as tenants in common~~

(Grantee's address: Suite 210, 11011 King Street, Overland Park, Kansas 66210)

all of the following-described real estate in Edwards ---------- County, Kansas:

Tract 1: A descriptive Tract in the Northeast Quarter (NE/4) of Section Twenty-five (25), in Township Twenty-four (24) South, Range Eighteen (18) West of the 6th P.M., more particularly described as follows: Beginning at the intersection of the East City Limits of Lewis, Kansas, and the South R/W line of the A.T. & S.F. Ry., said point being on the N-S 1/2 section line of Section 25, thence Northerly 25 feet, thence eastnortheasterly through an interior angle of 105° 35' and a distance of 102.67 feet to a point on the South R/W line of Old U. S. 50 Highway, thence Easterly on the South R/W line of old US 50 Highway a distance of 479 feet, thence at a right angle South 605.87 feet, thence Westerly through an angle of 84° 00' and a distance of 638.39 feet, to a point on the N-S 1/2 section line, thence North on the 1/2 section line 501.18 feet to the point of beginning, containing 8.0 acres, more or less.

Tract 2: A tract of land described as follows: A part of the NW/4 of Sec. 25-T24S-R18W, described as follows: Beginning at a point 109-1/2 feet north of the north line of Avenue "B" on the east line of Jersey Street, in Lewis, Kansas, thence northerly on the east line of Jersey Street to the extended north line of Avenue "A", thence east on the extended north line of Avenue "A" to the quarter section line, thence south to a point 109-1/2 feet north of the north line of Avenue "B", thence west to the place of beginning, EXCEPT that portion of said lands occupied by the Kansas Power and Light power station and that portion thereof lying south of the north side of said power station grounds.

Tract 3: A parcel of land in the NW/4 of Section 25, Township 24 South, Range 18 West of the 6th P.M., more particularly described and located with reference to streets and avenues in the town of Lewis, as follows: Commencing at a point on the extended north line of Avenue "A", 390 feet east of the point of intersection of the East line of Lewis Street and the North line of Avenue "A", thence North on the East line of Price Street, 150 feet, for place of beginning, thence East 150 feet to the middle of the alley of Block 6, as formerly platted, and 150 feet west of the west line of Jersey Street, thence north 150 feet to the station grounds of the Chicago, Kansas and Western Railroad Company, now the A.T. & S.F. Railway Co., thence westerly 150 feet to the east line of Price Street; thence south on the east line of Price Street, 150 feet to the place of beginning, said tract being 10 feet off the west side of said alley, and all of that tract formerly platted as Lots 1, 2 and 3 in Block 6 of the original townsite of the city of Lewis, subject to Highway US 50 S, right of way, in Edwards County, Kansas.

TOGETHER WITH all other real property and interests in real property located in Edwards County, Kansas owned or claimed by said Hi-Plains Leasing, Inc.

for the sum of ONE DOLLAR and other valuable considerations.

Date: August 9th, 1989

ATTEST:

HI-PLAINS LEASING, INC.

Patrice E. Cross, Secretary

By: John H. Cross, President

(Seal)

Caution: This is a multiple-purpose deed form and inapplicable portions must be stricken. Obtain legal advice before completing.

Form No. XXX F

KANSAS ACKNOWLEDGMENT

STATE OF ______________ }
County of ______________ } ss.

BE IT REMEMBERED, That on this ______________ day of ______________ A.D. 19___ before me, the undersigned, a Notary Public in and for said County and State, came ______________

who ________ personally known to me to be the same person ___ who executed the within instrument of writing, and duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my official seal the day and year last above written.

My commission expires ______________ 19___ ______________ Notary Public

KANSAS ACKNOWLEDGMENT

STATE OF ______________ }
County of ______________ } ss.

BE IT REMEMBERED, That on this ______________ day of ______________ A.D. 19___ before me, the undersigned, a Notary Public in and for said County and State, came ______________

who ________ personally known to me to be the same person ___ who executed the within instrument of writing, and duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my official seal the day and year last above written.

My commission expires ______________ 19___ ______________ Notary Public

KANSAS CORPORATION ACKNOWLEDGMENT

STATE OF KANSAS
County of Johnson

BE IT REMEMBERED, That on this ______________ day of August A.D. 1989, before me the undersigned, a Notary Public in and for said County and State, came John H. Cross President of the Hi-Plains Leasing, Inc. a corporation duly organized, incorporated and existing under and by virtue of the laws of Kansas and Patrice E. Cross Secretary of said corporation, who are personally known to me to be such officers, and who are personally known to me to be the same persons who executed, as such officers, the within instrument on behalf of said corporation, and such persons duly acknowledged the execution of the same to be the act and deed of said corporation ______________

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my official seal, the day and year last above written.

My commission expires March 22, 1995 ______________ Notary Public.

NOTARY PUBLIC State of Kansas

FROM

TO

Entered in Transfer Record in my office this 11th day of August 1989

County Clerk

STATE OF KANSAS, Edwards County, ss.

Received for Record on the 11th day of August 1989, at 9:30 o'clock A. M., and duly Recorded in Book 58 of Deeds at Page 329

Emily White Register of Deeds

Fee $ 8.00

DEED RECORD NO. 58 PAGE 329 Cont.