TETRA TECH

August 19, 2013

Mr. Todd Davis
Site Assessment Manager
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219

Subject: **Phase II Targeted Brownfields Assessment**
Kuhlman Diecasting Site, Stanley, Kansas
EPA Region 7, START 3, Contract No. EP-S7-06-01, Task Order No. 0002.015.024
Task Monitor: Todd Davis, EPA Project Manager

Dear Mr. Davis:

Tetra Tech, Inc. is submitting the attached Phase II Targeted Brownfields Assessment (TBA) report regarding the Kuhlman Diecasting site in Stanley, Kansas. If you have any questions or comments, please contact me at (913) 412-1937.

Sincerely,

Jeff Pritchard, CHMM
START Project Manager

Ted Faile, PG, CHMM
START Program Manager

Enclosures

cc: Roy Crossland, START Project Officer (cover letter only)

415 Oak Street, Kansas City, MO 64106
Tel 816.412.1741 Fax 816.410.1748 www.tetratech.com

PHASE II TARGETED BROWNFIELDS ASSESSMENT REPORT

KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Superfund Technical Assessment and Response Team (START) 3

Contract No. EP-S7-06-01, Task Order No. 0002.015.024

Prepared For:

U.S. Environmental Protection Agency
Region 7
Superfund Division
11201 Renner Boulevard
Lenexa, Kansas 66219

August 19, 2013

Prepared By:

Tetra Tech, Inc.
415 Oak Street
Kansas City, Missouri 64106
(816) 412-1741

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EXECUTIVE SUMMARY

The Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) was tasked by the U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division to conduct a Phase II Targeted Brownfields Assessment (TBA) (consistent with a Phase II Environmental Site Assessment [ESA]) at the Kuhlman Diecasting site. The Kuhlman Diecasting site is near the southwestern edge of Stanley, Johnson County, Kansas. The site property is currently owned by the Kuhlman Diecasting Company and consists of a defunct electroplating facility that covers approximately 35.15 acres, bounded west and south by the Blue River. The site is within a mixed rural, residential, and agricultural use area. A small residential area including approximately six residences is approximately 200 feet northeast of the site. Agricultural land and woodlands surround the site to the north, south, and west. The Kuhlman Diecasting site has a well-documented environmental history associated with its past operation as an electroplating facility and petroleum/oil storage facility. Numerous environmental investigations at the site have identified elevated levels of site-related contaminants. The most recent investigation at the site (also identified as a Phase II TBA) identified a plume of volatile organic compounds (VOC) in groundwater and petroleum-related contamination in soil at the site. The purpose of this Phase II TBA was to further investigate the nature and extent of that contamination. Additionally, this Phase II TBA involved characterization of site building materials for demolition and disposal purposes.

Phase II TBA activities were conducted during several sampling events from April through July 2013 included collection of soil, groundwater, and building material samples. Twelve subsurface soil samples and 21 groundwater samples (14 from temporary Geoprobe® wells and 7 from permanent monitoring wells) were collected at the site for analyses for chemical constituents (VOCs, total petroleum hydrocarbons [TPH]-gasoline range organics [GRO], TPH-diesel range organics [DRO], and metals regulated under the Resource Conservation and Recovery Act [RCRA]). Additionally, 10 samples of building materials were collected for analysis for RCRA metals (including mercury) and cyanide, and Toxicity Characteristic Leaching Procedure (TCLP) analysis for metals (including mercury). Not all of the samples were submitted for the full list of analyses listed above. Soil and groundwater sampling results from this Phase II TBA were compared to their respective Risk-Based Standards for Kansas (RSK) developed by the Kansas Department of Health and Environment (KDHE). TCLP sampling results were compared to their respective TCLP regulatory limits specified in *Code of Federal Regulations* (CFR) 40 Part 261.24.

Findings and recommendations as a result of the Phase II TBA are as follows:

Sampling results confirmed that an area of petroleum-related contamination is within the east portion of the site; however, based on sampling results from this Phase II TBA, the area of TPH contamination at concentrations that exceed RSK values is not widespread. The petroleum-related contamination is likely associated with historical site operations involving bulk oil storage/transfer. Although TPH (both DRO and GRO) was detected in soil and groundwater samples collected within the east portion of the site, only the samples collected at one location (GP-2/TW-2) contained TPH-DRO and TPH-GRO in both soil and groundwater above their respective RSK values. The soil sample collected at GP-2 (from 10 to 12 feet below ground surface [bgs]) contained TPH-GRO at 280 milligrams per kilogram (mg/kg), exceeding the RSK established for residential soil of 220 mg/kg. This concentration of TPH-GRO was below the RSK for non-residential soil of 450 mg/kg. No other soil samples collected within the east portion of the site contained site-related contaminants above their respective RSK values. The groundwater sample collected at TW-2 contained TPH-DRO at 2.5 milligrams per liter (mg/L) and TPH-GRO at 0.730 mg/L, which exceeded the RSK values established for both of those analytes. For reference, the RSK values for TPH-DRO in residential and non-residential groundwater are 0.5 and 0.72 mg/L, respectively. The RSK value for TPH-GRO in both residential and non-residential groundwater is 0.5 mg/L. No other groundwater samples collected within the east portion of the site contained site-related contaminants above their respective RSK values.

Consistent with the findings from previous investigations, sampling results from this Phase II TBA indicated presence of site-related contaminants in both soil and groundwater within the southwest portion of the site. Elevated concentrations of both TPH-DRO and TPH-GRO were detected in soil samples collected at locations east of the water evaporation sanitary lagoons. This area formerly contained a large aboveground storage tank (AST) used for petroleum storage/transfer. Specifically, samples collected at GP-8 (from 13 to 15 feet bgs) and GP-11 (from 3 to 5 feet bgs) contained TPH-GRO at 220 and 290 mg/kg, respectively. Those concentrations exceeded the analyte's RSK established for residential soil of 220 mg/kg, but were below its non-residential RSK of 450 mg/kg. TPH-DRO was detected at 15,400 mg/kg in the sample collected at GP-11 (from 3 to 5 feet bgs). That concentration far exceeded the RSK value established for TPH-DRO in residential soil of 2,000 mg/kg, but was below its non-residential RSK value of 20,000 mg/kg. No other soil samples collected within the east portion of the site contained site-related contaminants above their respective RSK values. It should be noted that chlorinated VOCs (1,1-dichloroethane [DCA], *cis*-1,2-dichloroethene [DCE], *trans*-1,2-DCE, and trichloroethene [TCE]) were detected in the soil sample collected at GP-9 (from 18 to 20 feet bgs). The detected concentrations of

those compounds were relatively low (ranging from 0.8 J to 55 micrograms per kilogram [µg/kg]), and well below their respective RSK values. The J-coded value indicates the result was estimated. However, presence of those compounds in soil may indicate the area around GP-9 is a potential source area for chlorinated VOCs identified in groundwater within the southwest portion of the site. The groundwater plume of chlorinated VOCs has been identified downgradient of GP-9 to the south-southwest. Only one groundwater sample collected within the southwest portion of the site contained TPH above its RSK values. The sample collected at TW-7 contained TPH-DRO at 7.9 mg/L. The detected concentration of TPH-DRO in this sample exceeded the RSK values established for both residential and non-residential groundwater, which are 0.5 and 0.72 mg/L, respectively. Sample location TW-7 (collocated with soil sample location GP-8) was also near the former location of an AST used for bulk oil storage/transfer.

Groundwater samples collected within the southwest portion of the site also contained chlorinated VOCs. The 2012 Phase II TBA previously had identified a plume of chlorinated VOCs in this portion of the site. The VOCs detected in groundwater samples collected as part of this Phase II TBA were 1,1-DCA, 1,1-DCE, *cis*-1,2-DCE, *trans*-1,2-DCE, and TCE. The highest concentrations of those VOCs were detected in the groundwater samples collected at TW-6 and TW-8, respectively just west and east of the water evaporation sanitary lagoons. Samples TW-6-GW and TW-8-GW contained *cis*-1,2-DCE and TCE above their respective RSK values. Sample TW-6-GW contained *cis*-1,2-DCE at 100 micrograms per liter (µg/L), while sample TW-8-GW contained both *cis*-1,2-DCE and TCE at 260 and 240 µg/L, respectively. The RSK values (for both residential and non-residential groundwater) established for TCE and *cis*-1,2-DCE are 5 and 70 µg/L, respectively. None of the other samples contained VOCs at concentrations above RSK values. The groundwater sampling results indicated elevated concentrations (above RSK values) of TPH-DRO and VOCs generally around the water evaporation sanitary lagoons and the adjacent area to the east, where a large, previously present AST had been used for bulk oil storage. Samples collected from Geoprobe® temporary wells and permanent monitoring wells at the site delineated the extent of the groundwater contamination. RSK values for the groundwater exposure pathway have been established for groundwater ingestion, but because groundwater at the site is not currently used for domestic purposes (drinking, washing, etc.), comparing the groundwater sampling results to those standards may not be entirely applicable.

Samples of building materials associated with the site structure were collected for disposal characterization purposes. Total metals were detected in all of the samples. Cyanide was detected in two of the samples. For comparative purposes, total metals and cyanide results were compared to their respective RSK values for soil. Chromium, lead, and mercury were the only metals detected at concentrations above their

respective RSK values established for residential soil. No metal, excluding chromium at 358 mg/kg in sample BM-F-3, was detected above its RSK value established for non-residential soil. Cyanide was not detected above its respective RSK values.

All of the building material samples were submitted for TCLP analysis for metals. That analysis determined that none of the samples contained concentrations of RCRA metals above their respective TCLP regulatory limits. These sample results indicate that no special disposal requirements would likely apply to the building materials if demolition would occur.

Sampling results from this Phase II TBA should be reviewed by personnel from EPA and KDHE to determine if additional investigation may be warranted. Review of these sampling data, as well as the findings from previous investigations at the site, should occur to identify specific environmental liabilities associated with the site—particularly those liabilities that could affect a potential purchaser or entity taking ownership of the property. The three former surface impoundments (that historically received waste from electroplating operations at the site) are considered RCRA post-closure units. KDHE maintains post-closure authority over those units, while EPA Region 7 maintains regulatory authority over the entire site.

1.0 INTRODUCTION

The Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) 3 was tasked by the U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division to conduct a Phase II Targeted Brownfields Assessment (TBA) (consistent with a Phase II Environmental Site Assessment [ESA]) at the Kuhlman Diecasting site. The Kuhlman Diecasting site is near the southwestern edge of Stanley, Johnson County, Kansas. The site property is currently owned by the Kuhlman Diecasting Company and consists of a defunct electroplating facility that covers approximately 35.15 acres, bounded to the west and south by the Blue River. The Kuhlman Diecasting site will hereafter be referred to as the "subject property" or "site." Tetra Tech conducted this Phase II TBA in accordance with the *Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process*, ASTM International (ASTM) designation E 1903-11. The following sections include discussions of the background and site history and Phase II TBA activities, presentation and evaluation of analytical results, and findings and recommendations.

1.1 PURPOSE

The purpose of this Phase II TBA was to further investigate the nature and extent of contamination found during previous investigations of the site. Additionally, this Phase II TBA involved characterization of site building materials for demolition and disposal purposes. The Kuhlman Diecasting site has a well-documented environmental history associated with its past operation as an electroplating facility and for petroleum/oil storage. Numerous environmental investigations at the site have identified elevated levels of site-related contaminants. Recognized environmental conditions (REC) specified in a previous 2012 Phase II TBA report were primarily related to historical use of the site associated with bulk oil storage, as well as electroplating operations.

1.2 SPECIAL TERMS AND CONDITIONS

No special terms or conditions were identified during this Phase II TBA.

2.0 BACKGROUND AND SITE HISTORY

This section briefly describes the site, the physical setting, site history and land use, and adjacent land use; it also summarizes previous completed environmental investigations of the site.

2.1 SITE DESCRIPTION AND FEATURES

The site address is 16400 Mission Road, near the intersection of 164th Street and Mission Road in Stanley, Kansas. The site can be accessed off Mission Road via a gravel road that connects to West 163rd Street. The subject property is currently owned by the Kuhlman Diecasting Company (Kuhlman); however, it is not currently used for any beneficial purpose. The site includes a single-story, concrete block warehouse building encompassing 73,730 square feet (ft^2). In addition, the site includes two process water storage basins, two wastewater evaporation sanitary lagoons, three capped lagoons (surface impoundments), and a pond (see Appendix A, Figures 1 and 2). The site is surrounded by a levee constructed to provide flood control. A railroad line bisects the site in a north-south direction.

2.2 PHYSICAL SETTING

The site is included on the Stillwell, Kansas, U.S. Geological Survey (USGS) 7.5-minute topographic series map (USGS 1991) (see Appendix A, Figure 1). The site is in Section 16, Township 14 South, Range 25 West. The coordinates of the approximate center of the site are 38.830741 degrees north latitude and 94.633464 degrees west longitude.

2.2.1 Geologic Setting

The site is within eastern Johnson County in northeastern Kansas. Johnson County lies partly in the Osage Cuestas, a portion of the Osage Plains physiographic province. Most of Johnson County consists of gently rolling uplands with a greater relief along streams (Ecology and Environment, Inc. [E&E] 1995).

Sedimentary rocks in northeast Kansas range from Late Pennsylvanian to Late Cambrian age. In the vicinity of the site, the aggregate thickness is approximately 1,700 feet. Structurally, the site lies within the Forest City basin. Shale and carbonates are the predominant lithologies of Paleozoic rocks in the Forest City basin, although sandstone composes the bulk of Late Cambrian- and Early Ordovician-age formations. Middle Ordovician- through Mississippian-age formations are typically thick-bedded limestone and dolomite interbedded with thick shale. The overlying Middle Pennsylvanian-age rocks that underlie the

site are cyclothermic shale and limestone formations, varying in thickness from several inches to tens of feet.

Eastern Johnson County is underlain by the Upper Pennsylvanian-age Kansas City Group. Within the Kansas City Group, thick limestone and thin shale of the Bronson Subgroup underlie thick shale and thin limestone of the Linn Subgroup.

2.2.2 Hydrogeology

Unconsolidated sediments in the Blue River Valley are Wisconsinan to Recent. The thickness of the alluvium varies from approximately 30 feet in the northern and central portions of the site to approximately 20 feet in the southern portion of the site.

Previous investigations have determined that groundwater is approximately 15-20 feet below ground surface (bgs). Groundwater flow at the site is to the south-southwest toward the Blue River.

2.2.3 Hydrology

Topsoil at the site belongs to the Kennebec and Chase Series. Kennebec silt loam covers the southern portion of the site. Typically, Kennebec soil is very dark grayish-brown becoming very dark gray with depth, slightly hard, friable, with weak to moderate fine granular structure. Kennebec soils are deep, moderately well drained, moderately permeable, and level (E&E 1995).

Based on a recent topographic map, the site is approximately 893 feet above mean sea level (amsl). The site is relatively flat, as it is within a meander of the Blue River. Surface water runoff likely flows south-southwest toward the Blue River.

2.3 SITE HISTORY AND LAND USE

Site operations have included bulk oil storage/transfer, grain storage, and electroplating. Property information from the Johnson County Assessor website indicates the on-site building was constructed in 1904 (Environmental International Government Ltd. [EIGov] 2011). Historical photographs show seven large aboveground storage tanks (ASTs at the site dating back to 1941. Kuhlman began electroplating operations at the site in 1962. Kuhlman manufactured zinc diecastings for a variety of commercial and industrial customers. Kuhlman operations consisted of an electroplating process that used chromium, nickel, and copper plating on zinc diecastings. On November 30, 1990, Kuhlman ceased all operations and filed for bankruptcy.

2.4 ADJACENT PROPERTY USE

The site is within a mixed rural, residential, and agricultural use area. A small residential area including approximately six residences is approximately 200 feet northeast of the site. Agricultural land and woodlands surround the site to the north, south, and west. Residential areas are present in all directions from the site, beyond the undeveloped areas (see Appendix A, Figure 2).

2.5 SUMMARY OF PREVIOUS ASSESSMENTS

The site has a well-documented environmental history associated with Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) investigations and cleanups. Numerous investigations at the site have involved collection of multimedia samples to determine if past site operations have resulted in releases of hazardous substances. The multimedia samples collected during those investigations consisted of soil (surface and subsurface), groundwater, surface water, and sediment samples. In addition, air, dust, and concrete samples have been collected from within the site building.

Because the site's environmental history is well documented, a complete discussion of past investigations at the site is not included in this Phase II TBA report. However, listed below are site reports completed for EPA that summarize the site's history and results of environmental investigations and cleanups:

- Jacobs Engineering. 1988. RCRA Facility Assessment of Kuhlman Diecasting Site. Stanley, Kansas. EPA ID No. KSD006325013. July.
- Ecology and Environment, Inc. (E&E). 1992. Removal Funded: Kuhlman Diecasting Co., Stanley, Kansas. Removal Assessment Phase II. TDD# T07-9107-035D. September 24.
- E&E. 1993. Removal Funded: Kuhlman Diecasting Co., Stanley, Kansas. Removal Assessment Phase II. TDD# T07-9301-025. April 16.
- E&E. 1995. Preliminary Assessment/Site Inspection for the Kuhlman Diecasting Site. Stanley, Kansas. TDD# T07-9412-506A. October 5.
- EIGov. 2011. Phase I Environmental Site Assessment.
- Seagull Environmental Technologies, Inc. 2012. Phase II Targeted Brownfields Assessment. Kuhlman Diecasting Site. September.

From 1991 to 1992, an EPA-funded removal action was conducted at the site. During the removal action, over 1 million gallons of liquid wastes contaminated with metals and cyanide was treated on site and properly discharged to the Blue River. Wastes that could not be treated on site were transported off site for

proper disposal. In 1992, following completion of the removal action, EPA conducted a removal assessment to determine whether further removal activity would be required. The removal assessment determined that elevated concentrations of the metals chromium, copper, nickel, and zinc were present in soil (both surface and subsurface), groundwater, and sediment at the site. Nickel and zinc were detected at concentrations that exceeded EPA-established, site-specific action levels; however, no further removal activity was conducted. Additionally, several other sampling activities have been completed at the site since completion of the removal action.

In 2002, EPA responded to a fire at the site and collected three water samples from areas of pooled water created as a result of the fire-fighting efforts. Those samples were analyzed for total metals and cyanide. No contaminants were detected above levels of concern. In 2004, EPA conducted additional sampling activities that included collection of groundwater samples from monitoring wells and surface soil samples at locations across the site. Only one groundwater sample, collected from monitoring well GM-17 (downgradient of Lagoon #3), contained elevated levels of site-related contaminants. This sample contained elevated concentrations of chromium, copper, lead, nickel, and zinc. Numerous surface soil samples collected at locations surrounding the two wastewater evaporation sanitary lagoons within the southern portion of the site contained elevated concentrations of chromium, copper, nickel, and zinc. In 2010, the Johnson County Environmental Department collected three samples of water that had accumulated in the basement of the site building. Those samples were collected to assist with an ongoing criminal investigation associated with the site (not an environmental criminal investigation). The samples were analyzed for total metals and volatile organic compounds (VOC). No contaminants were detected above levels of concern. In 2011, a Phase I ESA of the site was completed by EIGov and Seagull Environmental Technologies Inc., (Seagull) (under contract to EPA Region 7). The Phase I ESA was completed as a TBA for EPA Region 7 and the Johnson County Government, which had applied for a Brownfields Grant to assess the site. The Phase I TBA recommended a Phase II TBA of the property to include collection of surface and subsurface soil, groundwater, surface water, and sediment samples. Additionally, the Phase I TBA suggested sampling within the east portion of the site, where only limited investigations had previously occurred.

Subsequently, in September 2012, Seagull (under contract to EPA Region 7) conducted a Phase II TBA of the site. Phase II TBA activities included collection of soil (subsurface and surface soil), groundwater, surface water, and sediment samples at locations geographically covering the site. Sampling results from the Phase II TBA did not indicate widespread contamination across the site; however, elevated levels of VOCs and petroleum-related contaminants were detected in both soil and groundwater at direct-push

technology (DPT) boring locations. Specifically, chlorinated VOCs were detected at concentrations up to 384 micrograms per liter (µg/L) in groundwater samples collected within the southwest portion of the site, just east of the wastewater evaporation sanitary lagoons and near the surface impoundments (see Appendix A, Figure 2). Many of the VOCs were detected at concentrations well above their respective Risk-Based Standards for Kansas (RSK) developed by the Kansas Department of Health and Environment (KDHE). Table 1 below summarizes results for select VOCs in groundwater from the 2012 Phase II TBA.

TABLE 1

SELECTED GROUNDWATER SAMPLING RESULTS – 2012 PHASE II TBA
KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Sample Location	Sample Depth (ft bgs)	Analytical Results (micrograms per liter)				
		1,2-DCA	*cis*-1,2-DCE	TCE	TPH-GRO	TPH-DRO
SB-5-GW	24-28	<1.0	<1.0	<1.0	<500	**560**
SB-7-GW	20-24	**25.5**	25.3	**9.5**	<500	**510**
SB-11-GW	20-24	**299**	**294**	**384**	**640**	**<400**
KDHE RSK – Residential Pathway		**25**	**70**	**5**	**500**	**500**
KDHE RSK – Non-Residential Pathway		**46.1**	**70**	**5**	**500**	**720**

Notes:

Shaded result indicates analyte was detected above a KDHE RSK value.

<	Less than	GRO	Gasoline range organics
DCA	Dichloroethane	KDHE	Kansas Department of Health and Environment
DCE	Dichloroethene	RSK	Risk-based Standard for Kansas
DRO	Diesel range organics	TCE	Trichloroethene
ft bgs	Feet below ground surface	TPH	Total petroleum hydrocarbons

At one sample location within the east portion of the site (SB-6), petroleum-related contamination was detected at elevated concentrations in subsurface soil (see Appendix A, Figure 2). The subsurface soil sample collected at SB-6 contained total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and diesel range organics (DRO) at concentrations that exceeded their respective RSK values for residential and non-residential land use. Presence of TPH at that location is likely associated with historical site operations involving bulk petroleum storage/transfer. Table 2 below summarizes selected soil sampling results from the 2012 Phase II TBA.

TABLE 2

SELECTED SOIL SAMPLING RESULTS – 2012 PHASE II TBA
KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Sample Location	Sample Depth (ft bgs)	Analytical Results (milligrams per kilogram)	
		TPH-GRO	TPH-DRO
SB-6-14-16	14-16	**640**	**3,640**
SB-7-10-12	10-12	**539**	**7,970**
KDHE RSK – Residential Pathway		**220**	**2,000**
KDHE RSK – Non-Residential Pathway		**450**	**20,000**

Notes:

Shaded result indicates analyte was detected above a KDHE RSK value.

DRO	Diesel range organics	KDHE	Kansas Department of Health and Environment
ft bgs	Feet below ground surface	RSK	Risk-based Standard for Kansas
GRO	Gasoline range organics	TPH	Total petroleum hydrocarbons

Additionally, the 2012 Phase II TBA determined that sediment in the wastewater evaporation lagoons within the southwest portion of the site contained elevated concentrations of metals. Past investigations also had determined that elevated levels of metals remained within one of the surface impoundments (Lagoon #3) at the northwest corner of the site.

3.0 PHASE II TARGETED BROWNFIELDS ASSESSMENT ACTIVITIES

The following sections describe the scope of the Phase II TBA and field exploration and methods.

3.1 SCOPE OF THE ASSESSMENT

START field team members conducted sampling to determine current contaminant concentrations and extents of previously identified contaminants. Photographs were taken to document the site activities (see Appendix B), which were also recorded in a site logbook (see Appendix C). The sampling was conducted in accordance with an approved Quality Assurance Project Plan (QAPP).

3.1.1 Conceptual Site Model and Sampling Plan

The conceptual site model is a way of describing what contaminants are present, what is the source, pathways of migration, exposure potential, affected environmental media, and sensitive receptors. Based upon review of historical records, potential sources of contamination apparently involve historical site operations that included activities associated with former site uses for bulk oil storage/transfer and

electroplating. The sampling plan was designed for collection of samples of potentially contaminated environmental media at locations and depths where highest concentrations of contaminants were thought likely to occur.

The proposed sampling scheme for collection of soil, water, and building material samples was biased/judgmental, in accordance with the *Guidance for Performing Site Inspections under CERCLA*, Office of Solid Waste and Emergency Response (OSWER) Directive #9345.1-05. Twelve subsurface soil samples, 14 groundwater samples collected from Geoprobe® temporary wells, 7 groundwater samples collected from permanent monitoring wells, and 10 building material (concrete chips) samples were collected at the site for analyses for chemical constituents. All of the subsurface soil and Geoprobe® temporary well samples were collected using Geoprobe® DPT equipment, in accordance with EPA Region 7 standard operating procedure (SOP) 4230.07, Geoprobe® Operations. Quality control (QC) samples collected during the field activities included one water trip blank (laboratory prepared), one equipment rinsate sample (of the Geoprobe® Screen Point 15 [SP 15] groundwater sampler), and one field blank. Sampling methods and activities are described in Section 3.2. A summary of samples collected during the Phase II TBA activities is in Table 3.

TABLE 3

SUMMARY OF SAMPLES COLLECTED DURING PHASE II TBA ACTIVITIES
KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Sample Description	Sample Type	Total Number of Samples
Soil	Field Samples	12
Groundwater – Geoprobe® Temporary Well	Field Samples	14
Groundwater – Monitoring Well	Field Samples	7
Building Materials	Field Samples	10
Water (Equipment Rinsate)	Quality Control Sample	1
Water (Field Blank)	Quality Control Sample	1
Water (Trip Blank)	Quality Control Sample	1

3.1.2 Chemical Testing Plan

Phase II TBA activities included collection of subsurface soil, groundwater, and site building material samples. The subsurface soil and groundwater samples were analyzed for the following: VOCs (via Method 8260), TPH-GRO (via Method OA-1), and TPH-DRO (via Method OA-2). In addition, groundwater samples collected at TW-14 and MW-1 were analyzed for RCRA metals (total and dissolved), including mercury (via Methods 6020 and 7470). Building materials (concrete chips) were analyzed for

total RCRA metals (including mercury); Toxicity Characteristic Leaching Procedure (TCLP) metals, including mercury (via Method 1311 for extraction and Methods 6010 and 7471 for analysis); and cyanide (via Method 9012). Table 4 in this report summarizes the samples collected during this Phase II TBA and requested analyses for each. All samples were submitted to Eurofins Lancaster Laboratories, Inc., (Eurofins) in Lancaster, Pennsylvania, for laboratory analysis.

3.1.3 Deviations from the QAPP

No significant deviations from the QAPP occurred during Phase II TBA activities.

3.2 FIELD EXPLORATION AND METHODS

Field activities at the site occurred during several sampling events from April through July 2013. The primary sampling event—collection of soil, groundwater (from Geoprobe® temporary wells), and building material samples—occurred from April 22 through 26, 2013. Seagull team members involved with the field activities were Cosmo Canacari, Greg Dillon, Bryant Merriman, and Kirk Mammoliti. EPA On-Scene Coordinator (OSC) John Frey provided assistance during the Geoprobe® soil and groundwater sampling activities.

3.2.1 Subsurface Soil Sampling

Twelve subsurface soil samples were collected during the Phase II TBA activities—one sample was collected from each of 12 borings advanced at the site (see Appendix A, Figure 3). Of those 12 boring locations, six were within the southwest portion of the site to further investigate the source of VOCs detected in groundwater and TPH-DRO detected in soils during the 2012 Phase II TBA. The remaining six boring locations were within the east portion of the site where bulk oil storage had occurred and petroleum-contaminated soil had been detected during the 2012 Phase II TBA. At each of the boreholes, a Geoprobe® Macro-Core soil sampler fitted with a disposable polyvinyl chloride (PVC) liner was advanced to a depth of at least 20 feet bgs, groundwater, or refusal, whichever was encountered first. The soil cores were retrieved and immediately screened for VOCs with a photoionization detector (PID). All soil cores were logged to determine lithology and soil characteristics. From each of the boreholes, one soil sample was collected from a 2-foot interval. The specific 2-foot sample intervals were selected based on screening results, visual observations, and sampler judgment. In general, sample intervals that yielded the highest PID readings were selected for sampling. However, if no readings above background levels were observed at a boring location, the 2-foot sample interval was based on field observations and sampler judgment.

Boring logs are included as Appendix D. Following sample collection at the soil boring locations, excess soil was returned to the respective boreholes, and any remaining space was filled with bentonite.

Subsurface soil samples were submitted for analyses for VOCs, TPH-DRO (via Method OA-2), and TPH-GRO (via Method OA-1). Soil samples for analyses for VOCs and TPH-GRO were collected following EPA Method 5035 guidelines, which involved placing approximately 5 grams of soil into two 40-milliliter (mL) volatile organic analysis (VOA) vials pre-preserved with sodium bisulfate and one VOA vial preserved with methanol. Then, remaining soil from the sample interval was removed from the PVC liner and placed in a disposable aluminum pie pan for homogenization prior to transfer to an 8-ounce jar for analysis for TPH-DRO.

Pertinent data, including analyses to be performed and sample locations, were recorded on field sheets for each soil sample (see Appendix E). Table 4 below lists the sample identification numbers, locations, global positioning system (GPS) coordinates, depth intervals, and analyses for the soil samples collected during the Phase II TBA activities. All soil samples were stored in coolers maintained at or below 4 degrees Celsius (°C) pending submittal to Eurofins.

TABLE 4

SUMMARY OF SAMPLES SUBMITTED FOR LABORATORY ANALYSIS
KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Sample ID	Sample Location	Depth Interval (ft bgs)	GPS Coordinates	Analysis
SOIL				
GP-1-14-16	GP-1	14-16 feet	38.831025° N 94.632352° W	VOCs, TPH-GRO, and TPH-DRO
GP-2-10-12	GP-2	10-12 feet	38.831036° N 94.631822° W	VOCs, TPH-GRO, and TPH-DRO
GP-3-14-16	GP-3	14-16 feet	38.830745° N 94.631849° W	VOCs, TPH-GRO, and TPH-DRO
GP-4-14-16	GP-4	14-16 feet	38.830648° N 94.631823° W	VOCs, TPH-GRO, and TPH-DRO
GP-5-6-8	GP-5	6-8 feet	38.830347° N 94.632429° W	VOCs, TPH-GRO, and TPH-DRO
GP-6-18-20	GP-6	18-20 feet	38.830589° N 94.632422° W	VOCs, TPH-GRO, and TPH-DRO
GP-7-18-20	GP-7	18-20 feet	38.829772° N 94.634173° W	VOCs, TPH-GRO, and TPH-DRO
GP-8-13-15	GP-8	13-15 feet	38.829760° N 94.633832° W	VOCs, TPH-GRO, and TPH-DRO
GP-9-18-20	GP-9	18-20 feet	38.829809° N 94.633436° W	VOCs, TPH-GRO, and TPH-DRO

TABLE 4 (Continued)

SUMMARY OF SAMPLES SUBMITTED FOR LABORATORY ANALYSIS
KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Sample ID	Sample Location	Depth Interval (ft bgs)	GPS Coordinates	Analysis
GP-10-18-20	GP-10	18-20 feet	38.829554° N 94.634111° W	VOCs, TPH-GRO, and TPH-DRO
GP-11-3-5	GP-11	3-5 feet	38.829494° N 94.633856° W	VOCs, TPH-GRO, and TPH-DRO
GP-12-14-16	GP-14	14-16 feet	38.829455° N 94.633375° W	VOCs, TPH-GRO, and TPH-DRO
TEMPORARY GEOPROBE® WELLS				
TW-1-GW	TW-1	26-30	38.829759° N 94.632548° W	VOCs, TPH-GRO, and TPH-DRO
TW-2-GW	TW-2	24-27	38.831036° N 94.631822° W	VOCs, TPH-GRO, and TPH-DRO
TW-3-GW	TW-3	26-30	38.831509° N 94.631237° W	VOCs, TPH-GRO, and TPH-DRO
TW-4-GW	TW-4	26-30	38.830167° N 94.634308° W	VOCs, TPH-GRO, and TPH-DRO
TW-5-GW	TW-5	26-30	38.830166° N 94.633709° W	VOCs, TPH-GRO, and TPH-DRO
TW-6-GW	TW-6	22-26	38.829772° N 94.634399° W	VOCs, TPH-GRO, and TPH-DRO
TW-7-GW	TW-7	23-27	38.829760° N 94.633832° W	VOCs, TPH-GRO, and TPH-DRO
TW-8-GW	TW-8	24-28	38.829554° N 94.634111° W	VOCs, TPH-GRO, and TPH-DRO
TW-9-GW	TW-9	22-26	38.829455° N 94.633375° W	VOCs, TPH-GRO, and TPH-DRO
TW-10-GW	TW-10	22-26	38.829510° N 94.634639° W	VOCs, TPH-GRO, and TPH-DRO
TW-11-GW	TW-11	20-24	38.829054° N 94.634478° W	VOCs, TPH-GRO, and TPH-DRO
TW-12-GW	TW-12	24-28	38.828986° N 94.633529° W	VOCs, TPH-GRO, and TPH-DRO
TW-13-GW	TW-13	26-30	38.830179° N 94.632230° W	VOCs, TPH-GRO, and TPH-DRO
TW-14-GW	TW-14	20-24	38.832814° N 94.635178° W	VOCs, TPH-GRO, TPH-DRO, and Total and Dissolved RCRA Metals
PERMANENT MONITORING WELLS				
GM-4	GM-4	3-19.5[A]	38.828813 °N 94.633975 °W	VOCs, TPH-GRO, and TPH-DRO
GM-7	GM-7	7.5-22.5[A]	38.828866° N 94.632815° W	VOCs, TPH-GRO, and TPH-DRO
GM-13	GM-13	17.5-27.5[A]	38.831070° N 94.632463° W	VOCs, TPH-GRO, and TPH-DRO
GM-15	GM-15	15-25	38.829391° N 94.632918° W	VOCs, TPH-GRO, and TPH-DRO
MW-1-GW	MW-1	15-30	38.832635° N 94.635173° W	VOCs, TPH-GRO, TPH-DRO, and Total and Dissolved RCRA Metals
MW-2-GW	MW-2	5-25	38.829598° N 94.634599° W	VOCs, TPH-GRO, and TPH-DRO

TABLE 4 (Continued)

SUMMARY OF SAMPLES SUBMITTED FOR LABORATORY ANALYSIS
KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Sample ID	Sample Location	Depth Interval (ft bgs)	GPS Coordinates	Analysis
MW-3-GW	MW-3	13-28	38.829448° N 94.633917° W	VOCs, TPH-GRO, and TPH-DRO
BUILDING MATERIALS – CONCRETE CHIPS				
BM-W-1	Building Room 3	N/A	N/A	RCRA - Total Metals, TCLP Metals (including mercury), and Cyanide
BM-F-1	Building Room 3	N/A	N/A	RCRA - Total Metals, TCLP Metals (including mercury), and Cyanide
BM-W-2	Building Room 1	N/A	N/A	RCRA - Total Metals, TCLP Metals (including mercury), and Cyanide
BM-F-2	Building Room 3	N/A	N/A	RCRA - Total Metals, TCLP Metals (including mercury), and Cyanide
BM-W-3	Building Room 5	N/A	N/A	RCRA - Total Metals, TCLP Metals (including mercury), and Cyanide
BM-F-3	Building Room 1	N/A	N/A	RCRA - Total Metals, TCLP Metals (including mercury), and Cyanide
BM-W-4	Building Room 2	N/A	N/A	RCRA - Total Metals, TCLP Metals (including mercury), and Cyanide
BM-F-4	Building Room 5	N/A	N/A	RCRA - Total Metals, TCLP Metals (including mercury), and Cyanide
BM-WWTP-1	Treatment Plant	N/A	N/A	RCRA - Total Metals, TCLP Metals (including mercury), and Cyanide
BM- Debris -1	Building Room 3	N/A	N/A	RCRA - Total Metals, TCLP Metals (including mercury), and Cyanide
QUALITY CONTROL				
Trip Blank-GW	N/A	N/A	N/A	VOCs
Equipment Rinsate	N/A	N/A	N/A	VOCs, TPH-GRO, and TPH-DRO
Field Blank	N/A	N/A	N/A	VOCs, TPH-GRO, and TPH-DRO

Notes:

º	Degrees
DRO	Diesel range organics
ft bgs	Feet below ground surface
GPS	Global positioning system
GRO	Gasoline range organics
ID	Identification
N/A	Not applicable
N	North
RCRA	Resource Conservation and Recovery Act
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total petroleum hydrocarbons
VOC	Volatile organic compound
W	West

3.2.2 Temporary Geoprobe® Well Groundwater Sampling

Fourteen groundwater samples were collected from temporary Geoprobe® wells installed at the site (see Appendix A, Figure 4). Groundwater sample locations were selected to investigate areas of the site where permanent monitoring wells were not already present. At each temporary Geoprobe® well location, a Geoprobe® Screen Point 15 groundwater sampling apparatus was driven below the water table. The sampler sheath was then withdrawn 4 feet (exposing a 4-foot-long stainless steel screen), allowing a sample to be collected with a peristaltic pump through disposable polyethylene tubing. New tubing was used for each sample to avoid cross-contamination from previous sampling locations. Geoprobe® rods and samplers were decontaminated with a tap water and Alconox® wash and tap water rinse after sampling at each location. Following sample collection from the temporary monitoring wells, Geoprobe® rods were removed and the boreholes were backfilled with bentonite.

The groundwater samples were collected for analyses for VOCs, TPH-GRO (OA-1), and TPH-DRO (OA-2). Additionally, the groundwater sample collected from temporary well TW-14 was analyzed for total and dissolved RCRA metals. Water samples for analyses for VOCs and TPH-GRO were collected in three 40-mL VOA vials preserved with hydrochloric acid (HCl) to a pH<2. Water samples for analysis for TPH-DRO were collected in 1-liter amber glass bottles (two per sample) preserved with HCl to a pH<2. Water samples for total and dissolved RCRA metals analyses were collected in 250-milliliter (mL) polyethylene bottles (one each for total and dissolved metals) and preserved with nitric acid (HNO_3) to a pH <2. The dissolved samples were filtered in the field through disposable 0.45-micron filters.

Pertinent data, including analyses to be performed and sample locations, were recorded on field sheets for each sample (see Appendix E). Table 4 in this report summarizes the sample identification numbers, locations, GPS coordinates, depth intervals, and analyses for the groundwater samples. All water samples were stored in coolers maintained at or below 4 °C pending submittal to Eurofins.

3.2.3 Permanent Monitoring Well Sampling

Seven groundwater samples were collected from permanent monitoring wells at the site (see Appendix A, Figure 4). Initially, groundwater samples were collected from the following four wells: GM-4, GM-7, GM-13, and GM-15. Following receipt/evaluation of the soil and groundwater sampling results from the April 2012 sampling activities, on June 10, 2013, three small-diameter permanent monitoring wells were installed at the site by Razek Environmental, LLC, and sampled. The monitoring wells were drilled using hollow stem augers (with the Geoprobe®). The new wells were labeled as MW-1 through MW-3. The

new monitoring wells were placed at locations to assist and to continue monitoring of groundwater contamination identified within the southwest portion of the site. The well locations were approved by the EPA Project Manager, as well as EPA Region 7 RCRA and KDHE personnel. Total depths of the small-diameter (1-inch) monitoring wells ranged from 25 to 30 feet bgs. Table 4 above lists the monitoring well locations and screened intervals. Following installation, each monitoring well was properly developed to: (1) assure that groundwater entered the well screen freely, thus yielding a representative groundwater sample and an accurate water level measurement; (2) remove all water that may have been introduced during well installation; and (3) remove very fine-grained sediment derived from the filter pack and nearby formation so that groundwater would not be highly turbid, and silting of the well would not occur. Monitoring well certification records that include construction details are included in Appendix F.

All of the permanent monitoring wells were sampled with a peristaltic pump in accordance with a low-flow or "micro-purge" technique. This sampling method involved placing disposable polyethylene tubing at the middle of the screened interval and pumping groundwater at a flow rate of 0.1 to 0.5 liter per minute (L/min). Prior to sampling, depth to groundwater was recorded at each well. During purging, field parameters (pH, conductivity, dissolved oxygen, oxidation-reduction potential, temperature) were recorded; once field parameters had stabilized (indicating the purge discharge was representative of aquifer conditions), samples were collected. Low-flow purge sheets containing specific well information for each sample location are included in Appendix E (with the field sheets).

All of the permanent monitoring well samples were submitted for analyses for VOCs, TPH-GRO (Method OA-1), and TPH-DRO (Method OA-2). Water samples for analyses for VOCs and TPH-GRO were collected in three 40-mL VOA vials preserved with HCl to a pH<2. Water samples for analysis for TPH-DRO were collected in 1-liter amber glass bottles (two per sample) preserved with HCl to a pH<2.

Pertinent data, including analyses to be performed and sample locations, were recorded on field sheets for each sample (see Appendix E). Table 4 of this report summarizes the sample identification numbers, locations, GPS coordinates, screened intervals, and analyses for the groundwater samples collected from permanent monitoring wells. All water samples were stored in coolers maintained at or below 4 °C pending submittal to Eurofins.

On July 8, 2013, locations and elevations of 14 monitoring wells (including the three newly installed wells) were surveyed by Pruitt and Dooley Surveying Inc. At each of the permanent monitoring wells, the depth to groundwater was recorded, and the survey data were used to determine groundwater flow direction across the site. The groundwater elevation data indicated that groundwater flows to the south-

southwest (see Appendix A, Figure 5). The monitoring well identifications (ID), total depths, screened intervals, depths to groundwater, and elevation data for the 14 permanent monitoring wells are listed in Table 5 below. Elevation survey records are included as Appendix F.

TABLE 5

GROUNDWATER ELEVATION SUMMARY
KUHLMAN DIECASTING, STANLEY, KANSAS

Monitoring Well ID	Total Depth (TOC)	Screened Interval (feet bgs)	TOC Elevation (feet amsl)	Depth to Water from TOC (feet bgs)	Groundwater Elevation (feet amsl)
GM-1	29.5	5.0-29.5	889.23	6.8	882.43
GM-2	29.5	11.0-29.5	891.55	12.6	878.95
GM-4	19.5	3.0-19.5	883.54	9.9	873.64
GM-5	17.5	7.5-17.5	882.69	9.2	873.49
GM-7	19.5	7.5-19.5	883.72	10.1	873.62
GM-8	29.0	20.0-29.0	891.52	8.9	882.62
GM-10	29.3	22.5-29.3	893.12	6.9	886.22
GM-12	30.3	15.0-30.3	891.60	16.5	875.10
GM-13	24.5	17.5-24.5	888.99	6.2	882.79
GM-15	23.5	15.0-23.5	889.09	14.4	874.69
GM-17	20.2	15.0-20.2	890.09	12.1	877.99
MW-1	30.0	15.0-30.0	892.09	13.4	878.69
MW-2	25.0	5.0-25.0	890.69	17.6	873.09
MW-3	28.0	13.0-28.0	890.12	15.5	874.62

Notes:

amsl Above mean sea level
bgs Below ground surface
ID Identification
TOC Top of casing

3.2.4 Building Material – Concrete Chip Sampling

Ten concrete chip samples of building materials (primarily floors and walls) were collected from structures associated with the main site building (including the wastewater treatment structure) (see Appendix A, Figure 6). Sampling of building materials was conducted for disposal characterization purposes. Past investigations had identified presence of elevated concentrations of metals and cyanide in dust and chip samples collected from the building materials. Based on those findings, followup sampling/analysis of building materials was warranted to evaluate disposal options. Specific sample locations were selected in the field by the START Project Manager to represent building materials associated with the entire structure. Samples were collected using hand tools (sledge hammer and chisel) and a concrete core drill. Each sample was contained in one 8-ounce glass jar (for analyses for cyanide and RCRA metals, including mercury) and one 4-ounce glass jar (for TCLP analysis for metals, including mercury).

Table 4 in this report summarizes the sample identification numbers, locations, and analyses for the samples collected from building materials. All concrete samples were stored in coolers maintained at or below 4 °C pending submittal to Eurofins.

4.0 EVALUATION AND PRESENTATION OF RESULTS

This section summarizes analytical data from the soil, groundwater, building material, and QC samples collected during the Phase II TBA. Soil and groundwater sampling results from this Phase II TBA were compared to the appropriate RSK standards developed by KDHE. The RSK Manual is meant to serve as a tool for evaluation of need for additional assessment or cleanup at contaminated sites, when considered in conjunction with other site-specific conditions (KDHE 2010). Comparison of sampling results to both residential and non-residential RSK values occurred (when applicable) to address multiple land use scenarios for future site redevelopment. TCLP results from building material samples were compared to TCLP regulatory limits specified in *Code of Federal Regulations* (CFR) 40 Part 261.24. Those comparisons were made for disposal characterization purposes. Total metals and cyanide results from the building material samples were compared to their respective KDHE RSK values for soil. The complete analytical data package is included as Appendix G.

4.1 SUBSURFACE SOIL SAMPLES

Twelve subsurface soil samples were submitted to Eurofins for analyses for VOCs, TPH-GRO, and TPH-DRO. A summary of the analytes detected in the subsurface soil samples follows:

Volatile Organic Compounds

Six of the 12 subsurface soil samples contained VOCs at concentrations ranging from 0.4 J to 9,500 micrograms per kilogram (µg/kg). The J-coded value indicates the result was estimated. In those samples, the following VOCs were detected: acetone, benzene, 2-butanone (MEK), 1,1-dichloroethane (1,1-DCA), *cis*-1,2-dichloroethene (DCE), *trans*-1,2-DCE, ethylbenzene, 2-hexanone, trichloroethene (TCE), and xylenes. None of the VOCs was detected at a concentration exceeding its RSK values. Most VOCs were detected at low concentrations. It should be noted that a comparison was not made for 2-hexanone because RSK values have not been established for the analyte; 2-hexanone (a ketone) is commonly associated with solvents. Table H-1 in Appendix H summarizes the analytical data for VOCs in the soil samples.

Total Petroleum Hydrocarbons

Seven of the 12 subsurface soil samples contained detectable concentrations of TPH-GRO that ranged from 41 to 290 milligrams per kilogram (mg/kg). Three of those samples contained TPH-GRO at concentrations above its RSK value established for residential soil, which is 220 mg/kg. Those samples were GP-2-10-12 (at 280 mg/kg), GP-8-13-15 (at 220 mg/kg), and GP-11-3-5 (at 290 mg/kg). Those samples were all collected at locations near or adjacent to former locations of large ASTs previously used for petroleum storage. GP-2 was within the east portion of the site, while GP-8 and GP-11 were within the southwest portion of the site. None of the soil samples contained TPH-GRO at concentrations above its RSK value established for non-residential soil, which is 450 mg/kg. Table H-1 in Appendix H summarizes the analytical data for TPH-GRO in the soil samples.

Seven of the 12 samples contained TPH-DRO at concentrations ranging from 10.4 J to 15,400 mg/kg. Only one sample contained TPH-DRO above an RSK value. That sample was collected at location GP-11 (from 3 to 5 feet bgs). The concentration of TPH-DRO detected in that sample was 15,400 mg/kg, which far exceeded its RSK value of 2,000 mg/kg established for residential soil. This concentration was below the RSK value established for non-residential soil, which is 20,000 mg/kg. As previously mentioned, sample location GP-11 was within the southwest portion of the site, just east of a former AST. TPH-DRO concentrations detected in the remaining samples were below RSK values. Table H-1 in Appendix H summarizes the analytical data for TPH-DRO in the soil samples.

4.2 TEMPORARY GEOPROBE® WELL SAMPLES

Fourteen groundwater samples were collected from temporary Geoprobe® wells and submitted to Eurofins for analyses for VOCs, TPH-GRO, and TPH-DRO. In addition, sample TW-14-GW was analyzed for total and dissolved RCRA metals (including mercury). A summary of analytes detected in the groundwater samples follows:

Volatile Organic Compounds

Five of the 14 groundwater samples collected from temporary Geoprobe® wells contained detectable concentrations of VOCs ranging from 0.9 J to 240 µg/L. In those samples, the following eight VOCs were detected: acetone, chloroform, 1,1-DCA, 1,1-DCE, *cis*-1,2-DCE, *trans*-1,2-DCE, TCE, and vinyl chloride. Most VOCs and at highest concentrations were detected in samples collected at TW-6 and TW-8, within the southwest portion of the site (just west and east of the wastewater evaporation sanitary lagoons). Samples TW-6-GW and TW-8-GW contained *cis*-1,2-DCE and/or TCE above their respective RSK

values. Specifically, sample TW-6-GW (collected at 22-26 feet bgs) contained *cis*-1,2-DCE at 100 µg/L, while sample TW-8-GW (collected at 24-28 feet bgs) contained *cis*-1,2-DCE and TCE at 260 and 240 µg/L, respectively. RSK values (for both residential and non-residential groundwater) established for TCE and *cis*-1,2-DCE are 5 and 70 µg/L, respectively. None of the other samples contained VOC concentrations above RSK values. It should be noted that although RSK values for the groundwater exposure pathway have been established for groundwater ingestion, because groundwater at the site is not currently used for domestic purposes (drinking, washing, etc.), comparing the groundwater sampling results to those standards may not be entirely applicable. Table H-2 in Appendix H summarizes the analytical data for VOCs in the temporary Geoprobe® well samples.

Total Petroleum Hydrocarbons

Four of the 14 samples collected from temporary Geoprobe® wells contained TPH-GRO at concentrations ranging from 0.092 to 0.730 milligrams per liter (mg/L). Sample TW-2-GW (collected at 24 to 27 feet bgs) contained TPH-GRO at 0.73 mg/L, which is above its RSK values established for residential and non-residential groundwater exposure pathways (both 0.5 mg/L).

Six of the 14 samples collected from temporary Geoprobe® wells contained TPH-DRO at concentrations ranging from 0.11 J to 7.9 mg/L. Two samples contained TPH-DRO above its RSK values. Those samples were TW-2-GW and TW-7-GW, which contained TPH-DRO at 2.5 and 7.9 mg/L, respectively. Those concentrations of TPH-DRO exceeded the analyte's RSK values established for both residential and non-residential groundwater (0.5 and 0.72 mg/L, respectively). As mentioned above, although RSK values for the groundwater exposure pathway have been established for groundwater ingestion, because groundwater is not used at the site, this comparison may not be entirely applicable. Table H-2 in Appendix H summarizes the analytical data for TPH in the temporary Geoprobe® well samples.

RCRA Metals

One temporary Geoprobe® well sample was collected for analyses for total and dissolved RCRA metals (including mercury). Sample TW-14-GW (collected at the northwest corner of the site) contained detectable concentrations of arsenic, barium, cadmium, chromium, lead, and mercury. Total arsenic and lead were detected at concentrations that exceeded their respective RSK values for the groundwater exposure pathway. Specifically, total arsenic was detected at 0.035 mg/L and total lead at 0.0437 mg/L. In the dissolved (filtered) samples, only arsenic (at 0.0256 mg/L) was detected above its RSK value (0.010 mg/L). The elevated concentrations of metals detected in the unfiltered samples (total metals) are

likely attributable to suspended sediment in the samples. Table H-3 in Appendix H summarizes the analytical data for RCRA metals in the temporary Geoprobe® well samples.

4.3 PERMANENT MONITORING WELL SAMPLES

Seven groundwater samples were collected from permanent monitoring wells and submitted to Eurofins for analyses for VOCs, TPH-GRO, and TPH-DRO. Additionally, one sample (collected from permanent monitoring well MW-1) was analyzed for total and dissolved RCRA metals (including mercury). A summary of analytes detected in the permanent monitoring well samples follows:

VOCs

Four of the seven permanent monitoring well samples contained detectable concentrations of VOCs ranging from 2 J to 13 µg/L. Three VOCs were detected in those samples—chloromethane, *cis*-1,2-DCE, and TCE. None of those samples contained VOCs at concentrations exceeding an RSK value. Of note, the chlorinated VOCs *cis*-1,2-DCE and TCE were detected in the samples collected within the southwest portion of the site, consistent with previous findings. Table H-2 in Appendix H summarizes the analytical data for VOCs in the permanent monitoring well samples.

Total Petroleum Hydrocarbons

Only one sample collected from the permanent monitoring wells contained a reportable concentration of TPH. The sample collected at GM-13 contained TPH-DRO at 0.27 mg/L. The detected concentration of TPH-DRO was below its RSK values. Table H-2 in Appendix H summarizes the analytical data for total petroleum hydrocarbons in the permanent monitoring well samples.

RCRA Metals

The sample collected at MW-1 was the only permanent monitoring well sample submitted for analyses for total and dissolved RCRA metals (including mercury). Sample MW-1-GW (collected at the northwest corner of the site) contained reportable concentrations of arsenic, barium, cadmium, chromium, lead, mercury, and silver. All of those metals, excluding mercury, were detected at concentrations above their respective RSK values in the unfiltered sample. Similar to the Geoprobe® temporary groundwater sample results, in the dissolved (filtered) sample, arsenic (at 0.0251 mg/L) was the only metal detected above RSK values. The elevated concentrations of metals detected in the unfiltered sample (total metals) are likely

attributable to suspended sediment in the sample. Table H-3 in Appendix H summarizes the analytical data for total and dissolved RCRA metals in the permanent monitoring well sample.

4.4 BUILDING MATERIAL ─ CONCRETE CHIP SAMPLES

Ten samples of building materials (primarily floors and walls) were collected from structures associated with the main site building (including the wastewater treatment structure) and submitted to Eurofins for analyses for total RCRA metals (including mercury) and cyanide, and for TCLP analysis for metals (including mercury). Total metals were detected in all of the samples. For comparative purposes, total metals results were compared to their respective RSK values for soil. Chromium, lead, and mercury were the only metals detected at concentrations above their respective RSK values established for residential soil. No metal, excluding chromium at 358 mg/kg in sample BM-F-3, was detected above its RSK value for non-residential soil. It should be mentioned that the RSK values for total chromium assume a ratio (generally 6 to 1) of trivalent chromium to hexavalent chromium. During previous sampling events at the site, hexavalent chromium has not been detected at elevated concentrations; therefore, it may be more appropriate to compare the chromium results to the EPA Regional Screening Levels for trivalent chromium, which are 120,000 mg/kg for residential soil and 1,500,000 mg/kg for industrial soil. According to this comparison, the detected concentrations of chromium in the building material samples are well below these health-based standards.

Cyanide was detected in two samples at concentrations up to 11.5 mg/kg—well below its RSK values of 1,560 mg/kg for residential soil and 40,900 mg/kg for non-residential soil.

None of the samples submitted for TCLP analysis contained concentrations of RCRA metals above their respective TCLP regulatory limits. These sample results indicate that no special disposal requirements would likely apply to the building materials if demolition would occur. Table H-4 in Appendix H summarizes the analytical data for metals in the building material samples.

4.5 QUALITY CONTROL SAMPLES

The QC samples included a water field blank, rinsate blank, and trip blank. The field blank and the rinsate blank contained low concentrations of acetone and chloroform. The detected concentrations of those VOCs were well below their respective RSK values. Table H-2 in Appendix H summarizes analytical data for the QC samples.

5.0 DISCUSSION OF FINDINGS, AFFECTED MEDIA, AND RECOMMENDATIONS

Purposes of this Phase II TBA were to: (1) determine the extent of TPH contamination in soil and groundwater within the east portion of the site, (2) investigate the source area of VOC and TPH contamination in soil and groundwater within the southwest portion of the site, and (3) determine waste characteristics of structural building materials for demolition and disposal purposes. A discussion of the findings of this Phase II TBA and its recommendations is as follows:

Sample results confirmed presence of an area of petroleum-related contamination within the east portion of the site; however, based on sampling results from this Phase II TBA, it appears that the area of TPH contamination at concentrations that exceed RSK values is not widespread. The petroleum-related contamination is likely associated with historical site operations involving bulk oil storage/transfer. Although TPH (both DRO and GRO) was detected in soil and groundwater samples collected within the east portion of the site, only the samples collected at one location (GP-2/TW-2) contained TPH-DRO and TPH-GRO in both soil and groundwater above their respective RSK values. The soil sample collected at GP-2 (from 10 to 12 feet bgs) contained TPH-GRO at 280 mg/kg, exceeding the RSK value established for residential soil of 220 mg/kg. This concentration of TPH-GRO was below the RSK value for non-residential soil of 450 mg/kg. No other soil samples collected within the east portion of the site contained site-related contaminants at concentrations above RSK values. The groundwater sample collected from TW-2 contained TPH-DRO at 2.5 mg/L and TPH-GRO at 0.730 mg/L, which exceeded the RSK values established for both of those analytes. For reference, the RSK values for TPH-DRO in residential and non-residential groundwater are 0.5 and 0.72 mg/L, respectively. The RSK values for TPH-GRO in residential and non-residential groundwater are both 0.5 mg/L. No other groundwater samples collected within the east portion of the site contained site-related contaminants above RSK values.

Consistent with the findings from previous investigations, sampling results from this Phase II TBA indicated presence of site-related contaminants in both soil and groundwater within the southwest portion of the site. Elevated concentrations of both TPH-DRO and TPH-GRO were detected in soil samples collected at locations east of the water evaporation sanitary lagoons. This area formerly contained a large AST used for petroleum storage/transfer. Specifically, samples collected at GP-8 (from 13 to 15 feet bgs) and GP-11 (from 3 to 5 feet bgs) contained TPH-GRO at 220 and 290 mg/kg, respectively. Those concentrations exceeded the analyte's RSK value established for residential soil of 220 mg/kg, but were below its non-residential RSK value of 450 mg/kg. TPH-DRO was detected at 15,400 mg/kg in the sample collected at GP-11 (from 3 to 5 feet bgs). That concentration far exceeded the RSK value established for TPH-DRO in residential soil of 2,000 mg/kg, but was below its non-residential RSK value

of 20,000 mg/kg. No other soil samples collected within the east portion of the site contained site-related contaminants above RSK values. It should be noted that chlorinated VOCs (1,1-DCA, *cis*-1,2-DCE, *trans*-1,2-DCE, and TCE) were detected in the soil sample collected at GP-9 (from 18 to 20 feet bgs). The detected concentrations of those compounds were relatively low (ranging from 0.8 J to 55 µg/kg) and well below their respective RSK values. However, presence of those compounds in soil may indicate the area around GP-9 is a potential source area for chlorinated VOCs identified in groundwater within the southwest portion of the site. The groundwater plume of chlorinated VOCs has been identified downgradient of GP-9 to the south-southwest.

Only one groundwater sample collected within the southwest portion of the site contained TPH above its RSK values. The sample collected from TW-7 contained TPH-DRO at 7.9 mg/L. The detected concentration of TPH-DRO in this sample exceeded the RSK values established for both residential and non-residential groundwater, which are 0.5 and 0.72 mg/L, respectively. Sample location TW-7 (collocated with soil sample location GP-8) was also near the former location of an AST used for bulk oil storage/transfer.

Groundwater samples collected within the southwest portion of the site also contained chlorinated VOCs. The 2012 Phase II TBA previously identified a plume of chlorinated VOCs within this portion of the site. The VOCs detected in groundwater samples collected as part of this Phase II TBA were 1,1-DCA, 1,1-DCE, *cis*-1,2-DCE, *trans*-1,2-DCE, and TCE. The highest concentrations of those VOCs were detected in the groundwater samples collected at TW-6 and TW-8, respectively just west and east of the water evaporation sanitary lagoons. Samples TW-6-GW and TW-8-GW contained *cis*-1,2-DCE and TCE above their respective RSK values. Sample TW-6-GW contained *cis*-1,2-DCE at 100 µg/L, while sample TW-8-GW contained both *cis*-1,2-DCE and TCE at 260 and 240 µg/L, respectively. The RSK values (for both residential and non-residential groundwater) established for TCE and *cis*-1,2-DCE are 5 and 70 µg/L, respectively. None of the other samples contained VOCs at concentrations above RSK values. The groundwater sampling results indicated that elevated concentrations (above RSK values) of TPH-DRO and VOCs were generally present around the water evaporation sanitary lagoons and the adjacent area to the east, where a large, previously present AST had been used for bulk oil storage. Although RSK values for the groundwater exposure pathway have been established for groundwater ingestion, because groundwater at the site is not currently used for domestic purposes (drinking, washing, etc.), comparing the groundwater sampling results to those standards may not be entirely applicable.

Samples of building materials associated with the site structure were collected for disposal characterization purposes. Total metals were detected in all of the samples. Cyanide was detected in two of the samples.

Total metals and cyanide results were compared to their respective RSK values for soil. Chromium, lead, and mercury were the only metals detected at concentrations above their respective RSK values established for residential soil. No metal, excluding chromium at 358 mg/kg in sample BM-F-3, was detected above its RSK value established for non-residential soil. Cyanide was not detected above its RSK values.

All of the building material samples were submitted for TCLP analysis for metals. That analysis determined that none of the samples contained concentrations of RCRA metals above their respective TCLP regulatory limits. These sample results indicate that no special disposal requirements would likely apply to the building materials if demolition would occur.

Sampling results from this Phase II TBA should be reviewed by personnel from EPA and KDHE to determine if additional investigation may be warranted. Review of these sampling data, as well as the findings from previous investigations at the site, should occur to identify environmental liabilities associated with the site—particularly those liabilities that could affect a potential purchaser or entity taking ownership of the property. The three former surface impoundments (that historically received waste from electroplating operations at the site) are considered RCRA post-closure units. KDHE maintains post-closure authority over those units, while EPA Region 7 maintains regulatory authority over the entire site.

6.0 REFERENCES

Ecology and Environment, Inc. (E&E). 1995. Preliminary Assessment/Site Inspection for the Kuhlman Diecasting Site. Stanley, Kansas. TDD# T07-9412-506A. October 5.

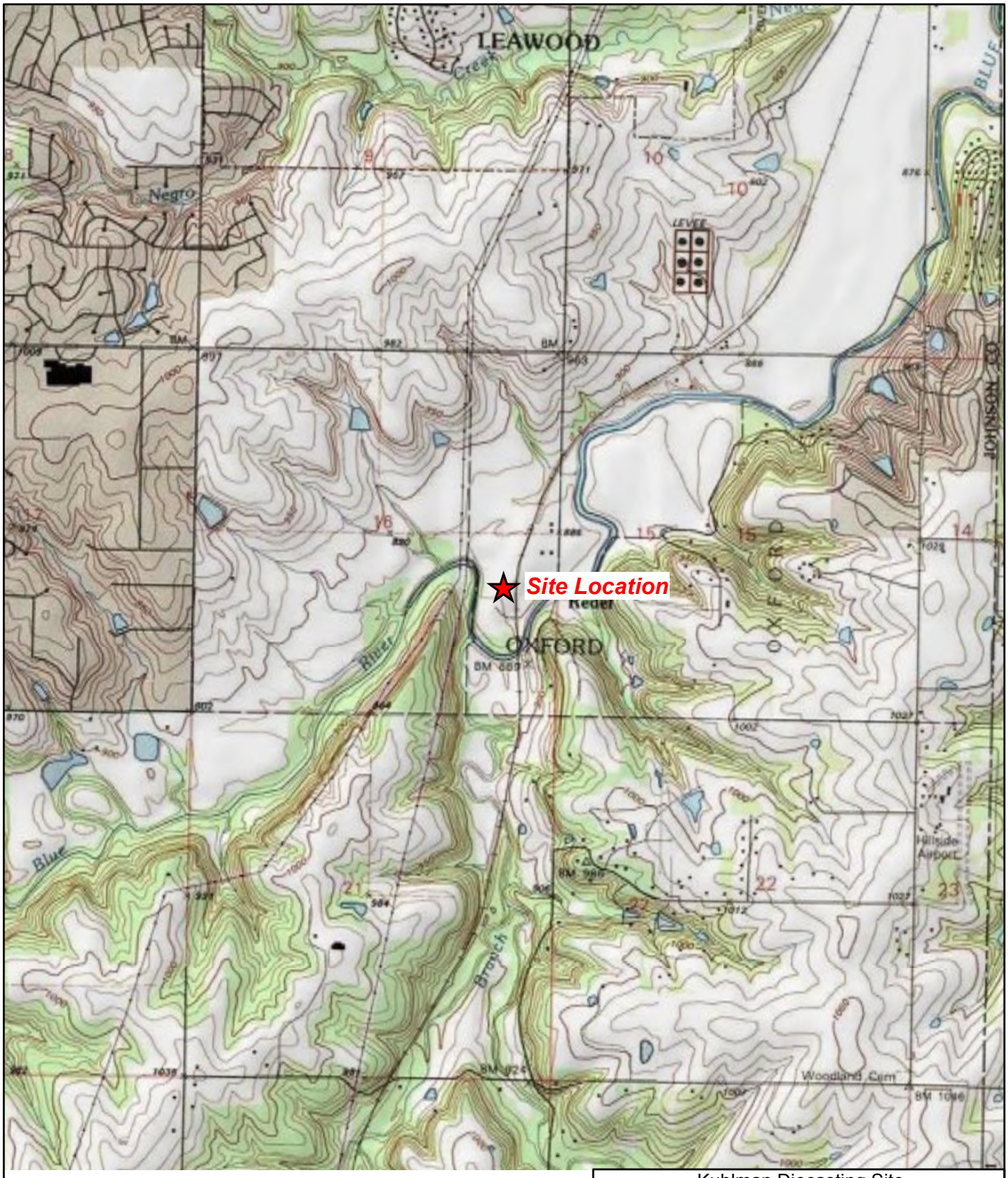
Environment International Government Ltd. (EIGov). 2011. Phase I Environmental Site Assessment, Kuhlman Diecasting site, Stanley, Kansas.

Kansas Department of Health and Environment (KDHE). 2010. Risk-Based Standards for Kansas (RSK Manual 5th Version). October.

U.S. Geological Survey (USGS). 1991. Stillwell, Kansas, Quadrangle, 7.5-minute Topographic Series.

APPENDIX A

FIGURES



Source: USGS Belton, Kansas 7.5 Minute Topo Quad, 1991
USGS Stilwell, Kansas 7.5 Minute Topo Quad, 1991

Kuhlman Diecasting Site
16400 Mission Road
Stanley, Kansas

Figure 1
Site Location Map

TETRA TECH

Date: 02/08/13 Drawn By: Nick Wiederholt Project No: X9004.L.06.0002.015.024

X:\G\9004\0002\015\024\Projects\mxd\Figure1.mxd

Legend

- 2012 Phase II TBA sample location
- Missouri Pacific Railroad
- Major road
- Street
- Approximate site boundary
- Water body
- Surface impoundment (capped)
- Water evaporation sanitary lagoon
- TBA Targeted Brownfields Assessment

Source: ArcGIS Online, Bing Maps Aerial, 2012; HSIP Gold, 2007

Kuhlman Diecasting Site
16400 Mission Road
Stanley, Kansas

Figure 2
Site Layout Map

TETRA TECH

Date: 02/08/13 Drawn By: Nick Wiederholt Project No: X9004.L.06.0002.015.024

X:\G\9004\0002\015\024\Projects\mxd\Figure2.mxd

Legend

- Soil sample location
- Soil/Groundwater sample location
- Missouri Pacific Railroad
- Approximate site boundary

N

0 120 240

Feet

Source: ArcGIS Online, World Imagery, 2012; HSIP Gold, 2007

Kuhlman Diecasting Site
16400 Mission Road
Stanley, Kansas

Figure 3
Soil Sample Location Map

TETRA TECH

Date: 08/12/13 Drawn By: Nick Wiederholt Project No: X9004.L.06.0002.015.024

X:\IG\9004\0002\015\024\Projects\mxd\Figure3_SoilMap.mxd

Legend

- Groundwater sample location
- Soil/Groundwater sample location
- Monitoring well sample location
- Missouri Pacific Railroad
- Approximate site boundary

N

0 120 240

Feet

Source: ArcGIS Online, Bing Maps Aerial, 2012; HSIP Gold, 2007

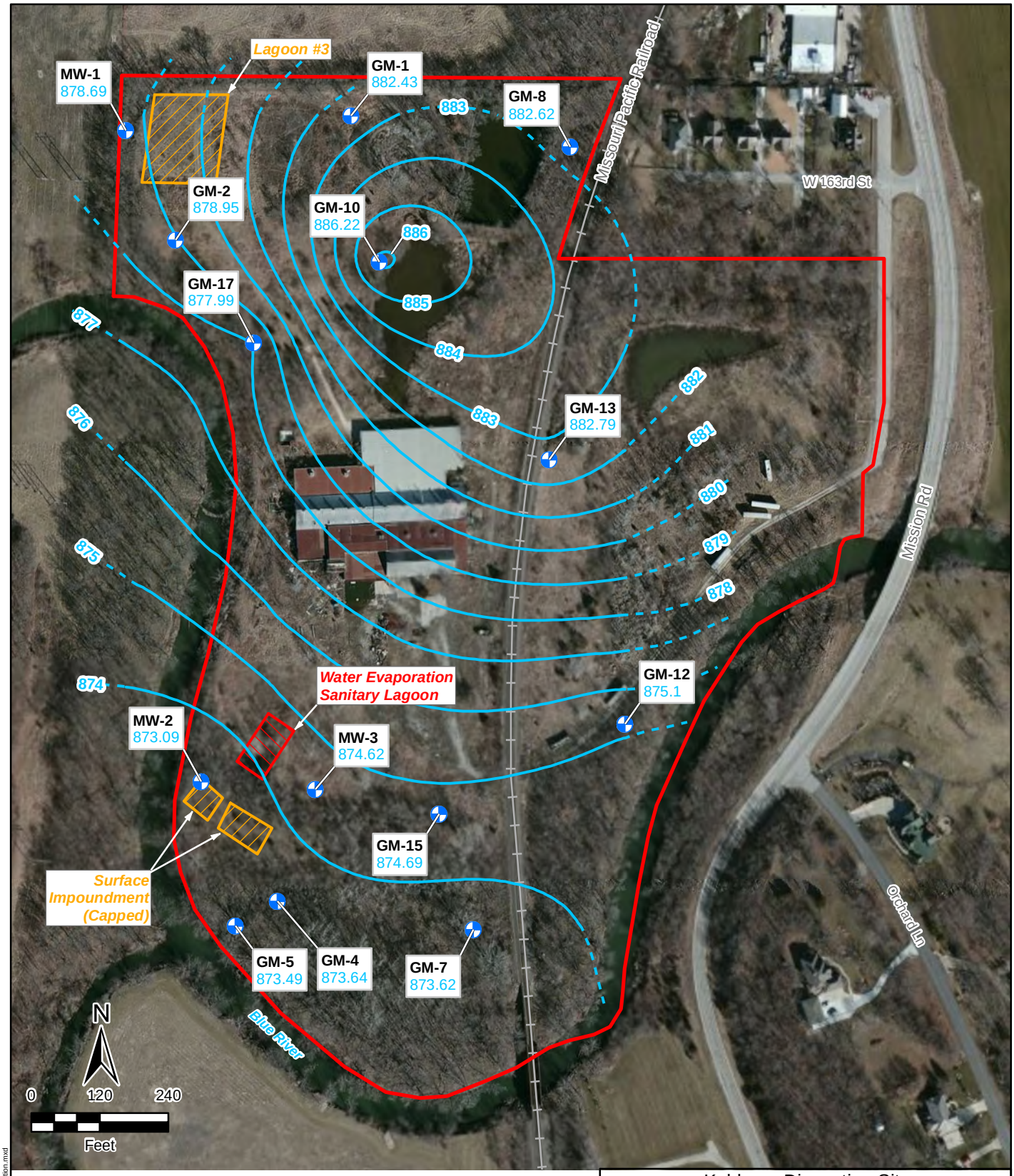
X:\GI\9004\0002\015\024\Projects\mxd\Figure4_GroundwaterMap.mxd

Kuhlman Diecasting Site
16400 Mission Road
Stanley, Kansas

Figure 4
Groundwater Sample Location Map

TETRA TECH

Date: 08/14/13 Drawn By: Nick Wiederholt Project No: X9004.L.06.0002.015.024



Legend

- Monitoring well location
- Approximate site boundary
- Groundwater elevation contour
- Inferred groundwater elevation contour
- 873.62 Groundwater elevation (feet above mean sea level)

Source: ArcGIS Online, Bing Maps Aerial, 2012; HSIP Gold, 2007; Pruitt and Dooley Surveying, L.L.C., Surveyor's Report - Kuhlman Diecasting Site, 2013

Kuhlman Diecasting Site
16400 Mission Road
Stanley, Kansas

Figure 5

Groundwater Elevation Map

TETRA TECH

Date: 08/14/13 Drawn By: Nick Wiederholt Project No: X9004.L.06.0002.015.024

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Legend

- Debris sample location
- Floor material sample location
- Wall material sample location
- WWTP sample location
- Missouri Pacific Railroad
- Approximate site boundary
- WWTP Waste water treatment plant

Source: ArcGIS Online, Bing Maps Aerial, 2012; HSIP Gold, 2007

Kuhlman Diecasting Site
16400 Mission Road
Stanley, Kansas

Figure 6
Building Material Sample Location Map

TETRA TECH

Date: 08/14/13 Drawn By: Nick Wiederholt Project No: X9004.L.06.0002.015.024

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APPENDIX B

PHOTOGRAPHIC DOCUMENTATION

Kuhlman Diecasting Facility
Stanley, Kansas

TETRA TECH PROJECT NO. X9004.06.0002.015.024 DIRECTION: North	DESCRIPTION	This photograph shows the general appearance of the Kuhlman Diecasting site building.	1
	CLIENT	U.S. Environmental Protection Agency, Region 7	DATE 4/25/2013
	PHOTOGRAPHER	Greg Dillon	

TETRA TECH PROJECT NO. X9004.06.0002.015.024 DIRECTION: East	DESCRIPTION	This photograph shows the general appearance of the interior of the site building.	2
	CLIENT	U.S. Environmental Protection Agency, Region 7	DATE 4/25/2013
	PHOTOGRAPHER	Greg Dillon	

Kuhlman Diecasting Facility
Stanley, Kansas

TETRA TECH PROJECT NO. X9004.06.0002.015.024 DIRECTION: Southwest	DESCRIPTION	This photograph shows the general location where building material sample BM-F-4 was collected by Superfund Technical Assessment and Response Team (START) personnel.	3
	CLIENT	Environmental Protection Agency Region 7	DATE 4/22/2013
	PHOTOGRAPHER	Gregory Dillon	

TETRA TECH PROJECT NO. X9004.06.0002.015.024 DIRECTION: NA	DESCRIPTION	This photograph shows START personnel conducting soil sampling activities.	4
	CLIENT	U.S. Environmental Protection Agency, Region 7	DATE 4/25/2013
	PHOTOGRAPHER	Kirk Mammoliti	

Kuhlman Diecasting Facility
Stanley, Kansas

TETRA TECH PROJECT NO. X9004.06.0002.015.024 DIRECTION: NA	DESCRIPTION	This photograph shows petroleum stained soil collected at sample location GP-2.	5
	CLIENT	U.S. Environmental Protection Agency, Region 7	DATE 4/25/2013
	PHOTOGRAPHER	Gregory Dillon	

TETRA TECH PROJECT NO. X9004.06.0002.015.024 DIRECTION: NA	DESCRIPTION	This photograph shows EPA and START conducting Geoprobe® soil and groundwater sampling activities.	6
	CLIENT	U.S. Environmental Protection Agency, Region 7	DATE 4/24/2013
	PHOTOGRAPHER	Kirk Mammoliti	

Kuhlman Diecasting Facility
Stanley, Kansas

TETRA TECH PROJECT NO. X9004.06.0002.015.024 DIRECTION: Southwest	DESCRIPTION	This photograph shows START personnel conducting groundwater sampling activities at the site.	7
	CLIENT	U.S. Environmental Protection Agency, Region 7	DATE 4/25/2013
	PHOTOGRAPHER	Gregory Dillon	

TETRA TECH PROJECT NO. X9004.06.0002.015.024 DIRECTION: Northwest	DESCRIPTION	This photograph shows START personnel conducting groundwater sampling activities at monitoring well MW-2.	8
	CLIENT	U.S. Environmental Protection Agency, Region 7	DATE 6/12/2013
	PHOTOGRAPHER	Cosmo Canacari	

APPENDIX C

SITE LOGBOOK

4/22/13 Kuhlman Diecasting Site

Summary: START to mobilize to site to mark boring locations and clear areas for work.

Weather: Clear, high 68°F

0800 - START team members G. Dillon & B. Merriman meet at Tetra Tech, prepare for days activities

0820 - Depart office for Kuhlman Diecasting Site, Stanley, KS.

0915 - Arrive at Site, STM C. Carracuni at site. Mark boring locations throughout site area. Overgrown brush and debris to be cleared following lunch.

1220 - Lunch

1250 - Back on site to clear areas for work.

1420 - Depart site for office.

1500 - Back at office. Prepare for sampling on 4/23/13.

1630 - End of day

4/22/13

4/23/13 Ruhlman Diecasting Site

Summary: Conduct Building Material Sampling.
Weather: Raining, high 46°F
0800 - STMs Dillon & Merriman meet at office
0820 - Depart office for site.
0915 - Conduct H&S meeting. Prepare for sampling of building material.
1020 - Collect sample BM-F-1. Consult map for locations. F-Floor, W-Wall, Room 3
1030 - Collect BM-F-2. Room 3
1038 - Collect BM-W-1. Room 3
1055 - Collect BM-F-3. Room 1
1105 - Collect BM-W-2. Room 1
1120 - Collect BM-F-4. Room 5
1138 - Collect BM-Debris-1. Room 4
1140 - Collect BM-WWTP-1. Room 4
1143 - Collect BM-W-3. Room 5
1155 - Collect BM-W-4. Room 2
1255 - Depart site for office, process samples.
1335 - Arrive at office, process BM samples.
1530 - Complete processing of samples. Prepare for site sampling.
1630 - End of day

4/23/13

Rite in the Rain.

4/24/13 Kuhlman Discarding Site

Summary: Begin collection of groundwater and soil samples.

Weather: Clear, high 57°F.

0730 - STM Driller mobilizes to site.

0750 - Refuel vehicle, purchase ice for samples.

0850 - Arrive at site, prepare for days activities.

0900 - Conduct H&S meeting w/ STM Canevaris

0940 - EPA OSC John Frey on site.

0950 - Begin boring at GP-2/TW-2. Rock refusal ~15 ft bgs. Relocate boring within ~2 ft of proposed location. Move boring 5 times

1005 - Abandon location GP-2/TW-2.

1012 - Begin boring at GP-3. Refusal at ~2.5 bgs. Move boring ~12 ft East.

1030 - Abandon GP-3. Refusal encountered multiple locations.

1030 - Begin boring GP-4.

1115 - Collect sample GP-4-14'-16'.

1225 - Begin boring at ~~GP-14~~ TW-14.

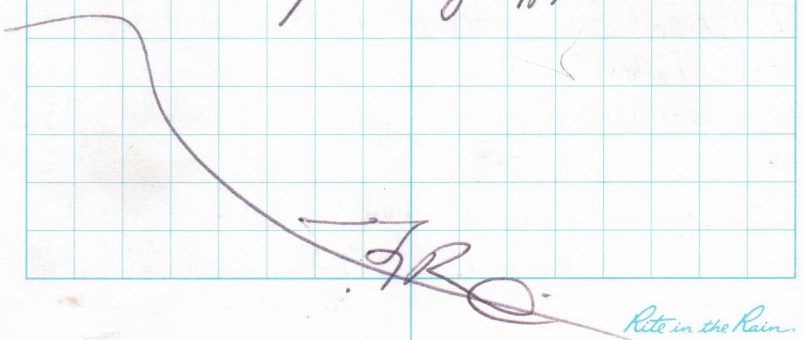
1235 - Collect sample TW-14-GW from screened interval 20-24' bgs.

1330 - Lunch

1400 - Back on site, prepare for sampling.

1420 - Begin boring at TW-12.

1455 - Collect sample TW-12-GW at screened interval 24'-28' bgs.
1515 - Begin boring at TW-11. Refusal at 24' bgs
1532 - Collect sample TW-11-GW from screened interval 20'-24' bgs
1605 - Begin boring at TW-10.
1608 - Refusal at 26' bgs.
1615 - Collect sample TW-10-GW from screen interval 22'-26' bgs.
1643 - Begin boring at TW-6. Refusal at 26' bgs. Boring dry. START to leave boring to allow recharge of GW.
1709 - Begin boring at TW-4. Refusal at 30' bgs.
1720 - Collect sample TW-6-GW. after recharge. Screened interval 22'-26' bgs.
1730 - No GW at TW-4. Allow to recharge ~~evening~~ overnight. Prepare to depart site.
1900 - End of day following supply run to office



6

4/25/13 Kuhlman Decastry Site

Summary: Continue sampling soil and GW.

Weather: Clear, high 62°F.

0730 - Report for site, purchase ice for samples prior to departure.

0805 - Purchase water (Stress chrink)

0815 - Arrive at site.

0820 - Conduct H&S meeting. STM Canuchari, Mammoth, and Bill - present

0843 - Collect sample TW-4-GW from screened interval 26'-30' bgs.

0920 - Began installing temp well at location TW-5.

0925 - Screened interval installed @ 24-28' bgs. Bedrock refusal met @ 28' bgs.

0936 - GW recharge is slow. Will allow well to charge and move to GP-8/TW-7.

0940 - Began boring @ GP-8.

1008 - Collected sample GP-8-13-15. Petroleum stains and odors were present from 10-20' bgs.

1012 - Began installing temp well @ TW-7 at location GP-8/TW-7.

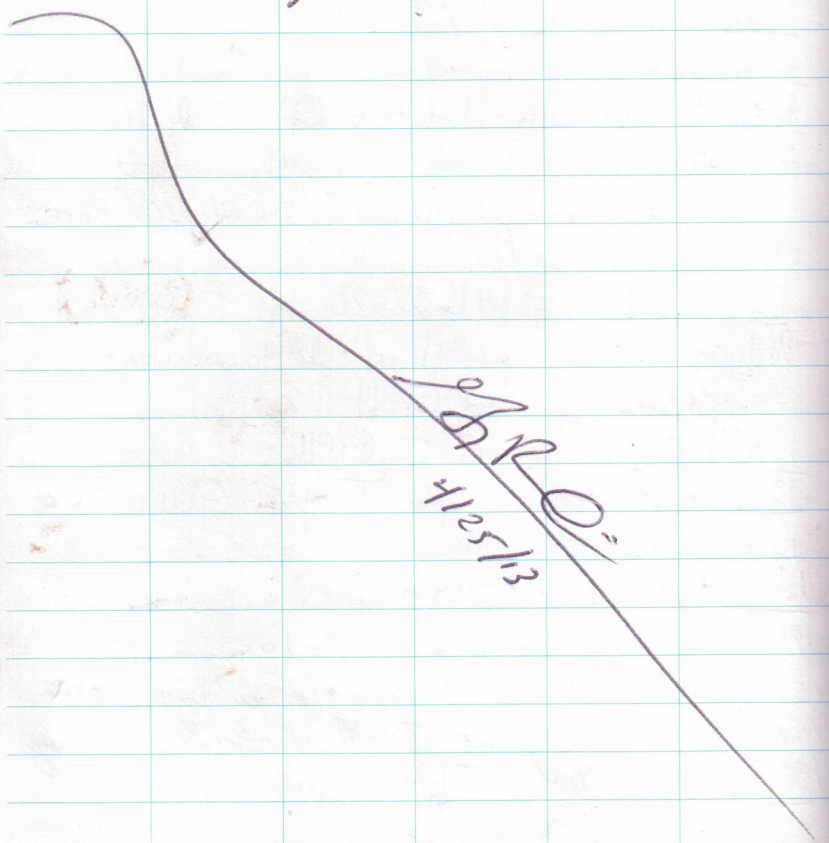
1015 - Refusal met @ 27' bgs. Well installed 23-27' bgs.

1023 - Collected sample TW-5-GW

1056 - GW recharge @ TW-7 is slow. Will allow to charge + move to location GP-9

1120- Began boring @ GP-9
1125- Collected sample TW-7-GW
1155- Collected sample GP-9-18-20: No petroleum encountered.
1225- Lunch
1255- Moved to GP-12/TW-9.
1300- Began boring
1320- Collected sample from GP-12-14-16. Sample was collected from this depth due to water present in 16-20' core.
1325- Set temp well 22-26' bgs @ TW-9 Recharge is slow, will allow to charge and relocate to GP-11.
1335- Began boring @ GP-11
1350- Collected sample TW-9-GW
1400- Collected sample GP-11-3-5
1405- Decon TW-9 rods
1440- Begin boring at GP-10.
1510- Collect sample GP-10-18-20' bgs
1512- Begin boring at TW-8. Refusal at 28' bgs.
1520- Collected sample TW-8-GW. Well set @ 24-28' bgs.
1540- Begin boring at GP-7.

1612 - Collect sample GP-7-18'-20'. Prepare to depart site.
1650 - Depart site for office.
1720 - Unload supplies.
1730 - End of day



4/26/13 Kahlman Dry Cleaning Site

~~1230~~ Summary: Continue sampling at site.
Weather: Cloudy, showers throughout the day
high 60°F.
0730 - Depart for site.
0815 - Arrive at site. Prepare for days activities.
0835 - Conduct H&S meeting.
0858 - Begin boring at GP-2/TW-2, second attempt to break through rubble below surface @ 3ft.
0957 - Collect sample GP-2-10'-12' bgs from area of visibly stained soil.
1003 - Collect sample TW-2-GW from screened interval 23'-27' bgs.
1032 - Begin boring at TW-3.
1044 - Collect sample TW-3-GW at screened interval 25'-29' bgs.
1108 - Begin boring at GP-3. First attempt unsuccessful w/ refusal @ ~3' bgs.
1150 - Collected sample GP-3-14-16. Petroleum visible from 14-28' bgs.
1215 - Lunch
1315 - Returned to site + prepared to sample @ TW-13
1350 - Begin boring at TW-13.

1405 - Collect sample TW-13-GW at screened interval 26'-30' bgs.
1423 - Begin boring at TW-1.
1450 - Collect sample Trip Blank
1518 - ~~First~~ Collect sample Field Blank.
1525 - Collect sample Equipment Rinsate.
Late Entry: Collect sample TW-1-GW at screened interval 26-30' @ 1442
1550 - Depart site for Tetra Tech office
1638 - Refuel vehicle, purchase ice for shipping.
1645 - Arrive at Tetra Tech office to prepare samples for shipping to Lancaster Laboratories, 2425 New Holland Pike, Lancaster, PA 17601.
1832 - Drop off samples at FedEx for overnight shipment for delivery on Saturday 4/27/13. Depart for Tetra Tech.
1900 - End of day

4/26/13

4-30-13 Kuhlmann Decassing Area

Summary: Complete soil and groundwater sampling at site.

Weather: Clear. High 83°F.

0720- STM Driller departs office for site.

0758- Purchase ice for samples.

0805- Arrive at site. Prepare for days activities.

0820- STM Contractors on site.

0825- Conduct H&S meeting.

0835- Begin boring at TW-3. GW samples were lost during shipping. Re-collect for lab.

0844- Refusal @ 30' bgs.

0855- Collect TW-3-GW from screened interval 26'-30' bgs.

0925- Begin boring at ~~SB~~ GP GP-1

1086- Collect sample GP-1-14'-16' bgs. Sample collected from 14'-16' interval due to limited recovery on 16'-20' interval

1035- ~~Begin~~ boring at ~~SB~~ GP-6.

1184- Collect sample GP-6-18'-20' bgs

1130- Begin boring at GP-5

1127- Collect sample GP-5-6'-8' bgs. Sample collected from 6'-8' interval due to limited recovery in lower interval samples.

1247 - Collect ~~Field~~ Trip Blank VOCs by 8260.
1315 - Begin low flow purge on ~~MW~~ GM-13-
1346 - Collect sample ~~MW~~-13-GW.
1408 - Begin purge on ~~GM-4~~ GM-15 ~~-GW~~
1439 - Collect Sample ~~GM-4-GW~~ GM-15-GW
1505 - Begin purge at GM-4-
1535 - Collect Sample GM-4-GW.
~~1~~1550 - Begin purge at GM-7-
1620 - Collect sample GM-7-GW
1640 - Depart site for office.
1710 - Arrive back at office. Unload supplies
1720 - End of day

~~4-23-13~~
9-30-13

6-10-2013 Permanent Monitoring Well Install

0730 - Arrived at site; Begin PPbRae Calibration

0745 - Met Tony Poulter of Rapid and begin set-up for drilling operations

0830 Begin Boring MW-1

1000 Completed MW-1 installation Move to Next Location MW-2; Screen Set From ~~25-30 ft~~ Water level at 2 ft Bgs [5-30 ft Bgs]

11:45 Begin drilling MW-2

12:45 Completed drilling MW-2 set Screen 5-25 ft Bgs water level at 11 ft

13:20 Begin drilling MW-3 Set Screen from 15-28 ft Bgs Refusal at 28 ft Bgs Water level at 9 ft Bgs

15:20 Completed MW-3 Installation water level

16:10 Located and flagged GM-1 GM-8 & GM-10 Remaining Wells previously located & flagged

17:00 End of Day

[signature]

Rite in the Rain

6-12-2013 Ruhlmen Site
- Permanent Monitering Wells MW-1 MW-2 & MW-3 development and Sampling.

8:00 Calibrate Water quality meter and discuss Safety issues / tailgate meeting

9:11 Arrived at MW-3 Location Water Level at 11.30 TOC 30.5 ft; 19.3 ft of water purged 12.0 gal to develop Well

10:15 Well MW-3 development Comple Moved to MW-2

10:25 Begin developing Well MW- 14.9 ft to water. 27.5 TOC; 12.5 feet of Water; purge 8 gallons of water to develop W

11:03 Completed development of Well MW move to Well MW-1

11:15 Moved to MW-1 Location; Set u for development. 8.50 feet to Groundwater; 32.5 feet TOC; Purg 14 gallons to develop Well.

11:20 began developing Well MW-1

6-12-2013

11:45 Completed development of MW-1 Moved to MW-3 for Sample Collection

12:09 Began purging and Collecting Water Quality parameters

12:44 Collected Samples MW-3-GW 19.06 feet of water

13:05 Arrived at MW-2 Set up for purging and Water Quality parameters 12.39 feet of water

13:20 Began purging MW-2 ~~and reading~~

13:24 Began Reading Water Quality parameters

13:54 Collected Samples MW-2-GW

14:04 Clean up and move to Well Location MW-1

14:08 Began Setup at MW-1 for purging and Water Quality parameter readings.

14:18 Began taking water quality parameter readings while purging well.

14:53 Collected sample MW-1-GW

15:05 Began Cleaning ~~Equip~~ Drop equipment at Field

16:25 End of Day

Rite in the Rain 6-12-2013

APPENDIX D

BORING LOGS

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-1
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20 ft bgs
Date:	4/30/2013	**Location:**	38.831025° N; -94.632352° W
Time:	9:25	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	G. Dillon	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1	3/4	0.0		Silt, brown, hard	
2		0.0			
3				Silt, brown, soft	
4		0.0			
5	4/4	0.0		Clay, brown, hard	
6		0.0			
7		0.0			
8		0.0			
9	1/4	0.0		Clay, brown, wet	
10					
11					
12					
13	4/4	0.0		Clay, brown, soft	
14		0.0			
15		0.0	GP-1-14-16		
16		0.0			
17	1/4	0.0			
18					
19					
20				TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-2
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20' bgs
Date:	5/1/2013	**Location:**	38.831036° N; -94.631822° W
Time:	9:04	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	G. Dillon	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1–4	0/4			No recovery	Rubble at approximately 3 feet below ground surface
5–8	0/4			No recovery	Rubble below surface
9	4/4	0.0		Clay, brown, soft, wet	
10		0.0			
11		0.0	GP-2-10-12		Petroleum odor
12		300 ppm			
13	3/4	5.8 ppm		Clay, gray, wet	
14		5.8 ppm			
15					
16		2.0 ppm			
17	4/4	2.0 ppm			
18		0.5 ppm			
19		0.6 ppm			
20		0.6 ppm		TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-3
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	28 ft bgs
Date:	4/26/2013	**Location:**	38.830745° N; -94.631849° W
Time:	11:08	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	K. Mammoliti	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1	NR			No recovery	Large rocks encountered just below ground surface
2					
3					
4					
5	NR				
6	3/3	0.0		Clay with Limestone, brown, dry, hard	
7		0.0			
8		0.0			
9	4/4	0.0		Clay, dark brown, dry, hard	
10		0.0			
11		0.0			
12		0.0			
13	4/4	0.0			
14		0.0			
15		18.4 ppm	GP-3-14-16		Strong petroleum odor
16		89.9 ppm			
17	4/4	0.2 ppm		Clay, dry, hard, gray, petroleum stained	
18		0.2 ppm			
19		1.0 ppm			
20		2.6 ppm			

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-3 Cont
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	28 ft bgs
Date:	4/26/2013	**Location:**	38.830745° N; -94.631849° W
Time:	11:08	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	K. Mammoliti	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
21	4/4	1.0 ppm 1.0 ppm 1.0 ppm 1.0 ppm		Clay with some limestone gravel, gray, soft, wet	Petroleum sheen visible
25	NR			No recovery TD = 28.0' bgs	
29					
33					
37					

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP- 4
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20 ft bgs
Date:	4/24/2013	**Location:**	38.830468° N; -94.631823° W
Time:	10:30	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	G. Dillon	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1	2/4	0.0		Clay with silt, brown, moist	
2					
3		0.0			
4					
5	4/4	0.0			
6		0.0			
7		0.0			
8		0.0			
9	4/4	0.0		Clay, brown, wet	
10		0.0			
11		0.0			
12		0.0		Clay, brown, moist	
13	4/4	0.0		Clay, brown, wet	
14		0.0			
15		0.0	GP-4-14-16		
16		26.6 ppm		Clay, visible gray stain	
17	4/4	0.7 ppm		Clay, gray, wet	
18		0.0			
19		0.0		Clay, brown, moist	
20		0.0		TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-5
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20 ft bgs
Date:	4/30/2013	**Location:**	38.830347° N; -94.632429° W
Time:	10:30	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	G. Dillon	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1	4/4	0.0		Silt, brown, soft	
2		0.0			
3		0.0		Clay, brown, hard	
4		0.0			
5	4/4	0.0		Clay, brown, soft	
6		0.0			
7		0.0	GP-5-6-8		
8		0.0			
9	2/4	0.0		Clay, brown, soft, wet	
10					
11		0.0			
12					
13	2/4	0.0			
14					
15		0.0			
16					
17	NR			No recovery	
18					
19					
20				TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-6
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20 ft bgs
Date:	4/30/2013	**Location:**	38.830589° N; -94.632422° W
Time:	10:35	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	G. Dillon	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1	4/4	0.0		Silt with some clay, brown, hard	
2		0.0			
3		0.0			
4		0.0			
5	4/4	0.0		Clay, brown, hard	
6		0.3 ppm			
7		4.2 ppm			
8		7.9 ppm			
9	3/4	1.1 ppm			
10		1.1 ppm			
11		3.9 ppm			
12					
13	3/4	1.0 ppm		Clay, gray, hard, petroleum odor	
14		5.2 ppm			
15		9.6 ppm			
16					
17	3/4	9.6 ppm			
18		7.9 ppm			
19			GP-6-18-20		
20		10.5 ppm		TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-7
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20 ft bgs
Date:	4/25/2013	**Location:**	38.829772° N; -94.634173° W
Time:	15:40	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	G. Dillon	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1	3/4	0.0		Silt with some clay, Brown	
2		0.0			
3		0.0			
4					
5	4/4	0.0			
6		0.0			
7		0.0			
8		0.0			
9	4/4	0.0		Clay, brown, soft	
10		0.0			
11		0.0			
12		0.0			
13	4/4	0.0			
14		0.0			
15		0.0			
16		0.0			
17	3/4	0.0		Clay, gray, no odor	
18		26.2			
19			GP-7-18-20		
20		2.3		Clay, brown, soft TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-8
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20 ft bgs
Date:	4/25/2013	**Location:**	38.829760° N; -94.633832° W
Time:	9:42	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	K. Mammoliti	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1	4/4	0.0		Clay with silt, dark brown, dry	
2		0.0			
3		0.0			
4		0.0			
5	4/4	0.0		Clay, brown, hard, dry	
6		0.0			
7		0.0			
8		0.0			
9	4/4	0.8 ppm			
10		0.8 ppm			
11		2.0 ppm		Clay, petroleum stained, gray, soft, dry, odor	
12		2.0 ppm			
13	4/4	0.5 ppm	GP-8-13-15	Clay, petroleum stained, gray, soft, wet	
14		8.2 ppm			
15		10.8 ppm			
16		10.8 ppm			
17	4/4	2.0 ppm		Clay, petroleum stained, gray, soft, moist	
18		2.0 ppm			
19		1.5 ppm			
20		8.3 ppm		TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-9
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20 ft bgs
Date:	4/25/2013	**Location:**	38.829809° N; -94.633436° W
Time:	11:20	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	K. Mammoliti	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1					
2	1/4	0.0		Clay with silt, brown, dry	
3					
4					
5		0.0			
6	4/4	0.0			
7		0.0			
8		0.0		Clay, brown, hard, dry	
9		0.0			
10	4/4	0.0			
11		0.0			
12		0.0			
13		0.0			
14	4/4	0.0			
15		0.0			
16		0.0		Clay, brown, soft, moist	
17		0.0			
18	4/4	0.0			
19		0.0	GP-9-18-20		
20		0.0		TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-10
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20 ft bgs
Date:	4/25/2013	**Location:**	38.829554° N; -94.634111° W
Time:	14:40	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	G. Dillon	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1	4/4	0.0		Silt	
2		0.0		Gravel fill	
3		0.0			
4		0.0			
5	4/4	0.0			
6		0.0			
7		0.0			
8		0.0			
9	4/4	0.0			
10		0.0			
11		0.0			
12		0.0			
13	4/4	0.0			
14		0.0			
15		0.0			
16		0.0			
17	4/4	0.0			
18		0.0			
19		4.9 ppm	GP-10-18-20	Clay, petroleum stained, gray	
20		1.5 ppm		Clay, brown, soft TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-11
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20 ft bgs
Date:	4/25/2013	**Location:**	38.829494° N; -94.633856° W
Time:	13:35	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	G. Dillon	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1	4/4	0.0		Clay with silt, brown and black, some asphalt, dry	
2		0.0			
3		0.0			
4		15.6 ppm	GP-11-3-5		
5	4/4	5.7 ppm		Clay, brown, soft, dry	
6		0.5 ppm			
7		0.5 ppm			
8		0.4 ppm			
9	4/4	0.4 ppm			
10		0.0			
11		0.0			
12		0.0			
13	4/4	0.0		Clay, brown, soft, moist	
14		0.0			
15		0.0		Clay, brown, hard, dry	
16		0.0			
17	NR			No recovery	
18					
19					
20				TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	GP-12
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	20 ft bgs
Date:	4/25/2013	**Location:**	38.829455° N; -94.633375° W
Time:	13:00	**Drilling Method:**	Truck-mounted direct-push Geoprobe
Logged by:	K. Mammoliti	**Sampling Method:**	Macro-Core soil sampler

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1	4/4	0.0		Silt, dark brown, dry	
2		0.0			
3		0.0			
4		0.0			
5	4/4	0.0			
6		0.0			
7		0.0			
8		0.0			
9	4/4	0.0		Clay, brown, hard, dry	
10		0.0			
11		0.0			
12		0.0			
13	4/4	0.0			
14		0.0			
15		0.0	GP-12-14-16		
16		0.0			
17	4/4	0.0			
18		0.0			
19		0.0		Clay, brown, soft, very moist	
20		0.0		Clay, brown, soft, wet TD = 20.0' bgs	

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	MW-1
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	30 ft bgs
Date:	6/10/2013	**Location:**	38.83264° N; -94.63516° W
Time:	8:30	**Drilling Method:**	Geoprobe
Logged by:	C. Canacari	**Sampling Method:**	no sample was collected

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1					
2		0.0			
3					
4					
5					
6		0.0			
7					
8				Clay, black, moist, soft	
9					
10		0.0			
11					
12					
13					
14		0.0			
15					
16					
17					
18		0.0		Clay with some silt, brown, moist, soft	
19					
20					

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	MW-1
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	30 ft bgs
Date:	6/10/2013	**Location:**	38.83264° N; -94.63516° W
Time:	8:30	**Drilling Method:**	Geoprobe
Logged by:	C Canacari	**Sampling Method:**	no sample was collected

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
21					
22		0.0			wet soil
23					
24					
25				Clay with some silt, light brown, soft, wet	
26		0.0			
27					
28					
29		0.0			
30				TD = 30.0' bgs	
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	MW-2
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	25 ft bgs
Date:	6/10/2013	**Location:**	38.82964° N; -94.63459° W
Time:	11:45	**Drilling Method:**	Geoprobe
Logged by:	C. Canacari	**Sampling Method:**	no sample was collected

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1					
2		0.0		Clay with some sand, black, soft, moist	
3					
4					
5					
6		0.0			
7					
8					
9				Clay, dark brown, stiff, moist	
10		0.0			
11					
12					
13					
14		0.0			
15				Clay, gray, stiff, moist	
16					
17					
18		0.0		Clay, gray, soft, moist	
19					
20					

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	MW-2
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	25 ft bgs
Date:	6/10/2013	**Location:**	38.82964° N; -94.63459° W
Time:	11:45	**Drilling Method:**	Geoprobe
Logged by:	C Canacari	**Sampling Method:**	no sample was collected

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
21–25		0.0		Clay, gray, soft, wet TD = 25.0' bgs	encountered groundwater at 21 ft bgs
26–28					
29–32					
33–36					
37–40					

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	MW-3
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	28 ft bgs
Date:	6/10/2013	**Location:**	38.82950° N; -94.63390° W
Time:	13:20	**Drilling Method:**	Geoprobe
Logged by:	C. Canacari	**Sampling Method:**	no sample was collected

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
1–4		0.0		Clay with silt and some gravel, brown, soft, moist	
5–8		0.0			
9–12		0.0		Clay, dark brown, stiff, moist	
13–16		0.0			
17–20		0.0		Clay, dark brown, soft, moist	encountered groundwater at 20 ft bgs

Tetra Tech EM Inc.

Project:	Kuhlman Diecasting	**Boring No:**	MW-3
Project No:	X9004.06.0002.015.024	**Total Depth (ft):**	28 ft bgs
Date:	6/10/2013	**Location:**	38.82950° N; -94.63390° W
Time:	13:20	**Drilling Method:**	Geoprobe
Logged by:	C Canacari	**Sampling Method:**	no sample was collected

Depth (feet)	Recovery	PID Reading	Laboratory Sample ID	Lithology	Remarks
21					
22		0.0		Clay, brown, soft, wet	
23					
24					
25					petroleum odor
26		0.0		Clay, light brown, soft, wet	
27					refusal at 28 ft bgs
28				TD = 28.0' bgs	
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

APPENDIX E

FIELD SHEETS

Sample Collection Field Sheet

US EPA Region 7

Kohlman Diecasting Site

Matrix: Soil

Sample Number: GP-1-14'-16'

Project ID:

Project Manager: Mammoliti

Location: Stanley

State: KS

Location Description: GP-1

External Sample Number:

Latitude: 38.831025

Longitude: -94.632352

Sample Collection: 4/30/13 10:06

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2 VOAs	NaHSO4		VOCs
2 VOAs	MeOH		TPH-GRO
1 4oz plastic	None		% Moisture
1 4oz glass	None		TPH-DRO

Property Owner Information:

Sample Comments:

Sample Location Map:

* Sample collected from 14'-16' bgs due to limited recovery on 16'-20' interval.

Sample collected by: G. Dillon

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Recycling Site

Matrix: Soil

Sample Number: GP-2-10'-12'

Project ID:

Project Manager: Mammoliti

Location: Stanley

State: KS

Location Description: GP-2

External Sample Number:

Latitude: 38.831086

Longitude: -94.631821

Sample Collection: 4/26/13 09:57

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
3 VOAs	$NaHSO_4$		VOCs
3 VOAs	MeOH		VOCs/TPH-GRO
2 4oz plastic	None		% Moisture
1 4oz glass	None		TPH-DRO

Property Owner Information:

Sample Comments:

Sample collected from area visibly stained soil at 10'-12' bgs

PID = 300 ppm

Sample Location Map:

Sample collected by: _____

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Soil **Sample Number:** GP-3-14-16

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: GP-3

External Sample Number:

Latitude: 38.830745 **Sample Collection:** 4/26/13 11:50

Longitude: -94.631844

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2-40 mL VOAs	~~HCl~~ MeOH		VOCs, GRO
2-40 mL VOAs	NaHSO4		VOCs
1-4oz glass	Neat		DRO
1-4oz plastic	Neat		% Moisture

Property Owner Information:

Sample Comments:

Collected from 14-16' bgs

PID= 89.9 ppm

Petrolum visible from 14-28' bgs

Sample Location Map:

Sample collected by: KMM

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Soil **Sample Number:** GP-4-14'-16'

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: GP-4

External Sample Number:

Latitude: 38.830468 **Sample Collection:** 4/24/13 11:15

Longitude: -94.631823

Laboratory Analysis:

	Container	Preservative	Holding Time	Analysis
2	~~VOCs~~ VOAs	MeOH	14 days	VOCs / TPH-GRO
2	VOAs	$NaHSO_4$	14 days	VOCs
1	125 mL	None	14 days	TPH-DRO
1	4.5 oz	None	14 days	% Moisture

Property Owner Information:

Sample Comments:

Sample collected from 14-16' bgs visibly stained

PID = 26.6 ppm

Sample Location Map:

Sample collected by: K. Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Soil **Sample Number:** GP-5-6'-8'

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: GP-5

External Sample Number:

Latitude: 38.830347 **Sample Collection:** 4/30/13 12:27

Longitude: -94.632429

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2 VOAs	NaHSO4		VOCs
2 VOAs	MeOH		TPH-GRO
1 4oz plastic	None		% Moisture
1 4oz glass	None		TPH-DRO

Property Owner Information:

Sample Comments:

Sample Location Map:

* Sample collected from 6'-8' interval due to limited recovery on lower interval samples.

Sample collected by: C. Dillon

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Soil **Sample Number:** GP-6-18'-20'

Project ID:

Location: Stanley **Project Manager:** Mammoliti

State: KS

Location Description: GP-6

External Sample Number:

Latitude: 38.830589 **Sample Collection:** 4/30/13 11:14

Longitude: -94.632422

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2 VOAs	NaHSO4		VOCs
2 VOAs	MeOH		TPH-GRO
1 4oz plastic	None		% Moisture
1 4oz glass	None		TPH-DRO

Property Owner Information:

Sample Comments:

Sample Location Map:

* Sample collected from 18'-20' interval

PID = 10.5 ppm

Sample collected by: G. Dilon

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting

Matrix: Soil **Sample Number:** GP-7-18'-20'

Project ID: **Project Manager:** Mammoliti

Location: Stanley **State:** KS

Location Description: GP-7

External Sample Number:

Latitude: 38.829772 **Sample Collection:** 4/25/13 16:12

Longitude: -94.634673

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2 VIAs	NaHSO4		VOCs
2 VOAs	MeOH		VOCs/ TPH GRO
1 4oz Plastic	None		~~TPH-DRO~~ % Solids
1 4oz glass	None		TPH-DRO

Property Owner Information:

Sample Comments:

Sample collected from area of visible staining

PID = 26.2 ppm

Sample Location Map:

Sample collected by: R. Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting

Matrix: Soil **Sample Number:** GP-8-13-15

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: GP-8

External Sample Number:

Latitude: 38.829760 **Sample Collection:** 9/25/13 10:08

Longitude: -94.633832

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2-40mL VOAs	MeOH		VOCs, GRO
2-40mL VOAs	$NaHSO_4$		
1-4oz jar	Neat		DRO
1-4oz plastic jar	Neat		% Moisture

Property Owner Information:

Sample Comments:

Sample collected from 13-15' bgs

Petroleum stains + odors 10-20' bgs.

PID = 10.8 ppm

Sample Location Map:

Sample collected by: CMM

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Soil **Sample Number:** GP-9-18-20

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: GP-9

External Sample Number:

Latitude: 38.829809

Longitude: -94.633688

Sample Collection: 9/25/13 11:55

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2-40 mL VOAs	MeOH		VOCs, GRO
2-40 mL VOAs	$NaHSO_4$		VOCs, GRO
1-4oz glass jar	Neat		DRO
1-4oz Plastic	Neat		% Moisture

Property Owner Information:

Sample Comments:

Sample collected from 18-20' bgs

No petroleum encountered

Sample Location Map:

Sample collected by: KMM

Sample Collection Field Sheet

US EPA Region 7

Kuehlmen Recycling Site

Matrix: Soil **Sample Number:** GP-10-18'-20'

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: GP-10

External Sample Number:

Latitude: 38.829554 **Sample Collection:** 4/25/13 15:10

Longitude: -94.834111

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2 VOAs	$NaHSO_4$		VOCs
2 VOAs	MeOH		VOCs/TPH GRO
1 4oz Plastic	None		% Moisture
1 4oz glass	None		TPH-DRO

Property Owner Information:

Sample Comments:

Visibly stained area from ~18.5'-19.5' bgs

PID = 4.9 ppm

Sample Location Map:

Sample collected by: KMammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Soil **Sample Number:** GP-11-3-5

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: GP-11

External Sample Number:

Latitude: 38.829494 **Sample Collection:** 4/25/13 14:00

Longitude: -94.633856

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2-40 mL VOAs	MeOH		VOCs, GRO
2-40 mL VOAs	NaHSO4		VOCs
1-4oz glass	Neat		DRO
1-4oz plastic	Neat		% Moisture

Property Owner Information:

Sample Comments:

Sample collected from 3-5.
Asphalt/petroleum odors

Sample Location Map:

Sample collected by: KMM

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Soil **Sample Number:** GP-12-14-16

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: GP-12

External Sample Number:

Latitude: 36.829455 **Sample Collection:** 4/25/13 13:20

Longitude: -94.633375

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2-40 mL VOAs	MeOH		VOCs, GRO
2-40 mL VOAs	$NaHSO_4$		VOCs
1- 4oz glass	Neat		DRO
1- 4oz plastic	Neat		% Moisture

Property Owner Information:

Sample Comments:

Sample collected from 14-16' bgs

No petroleum encountered

Sample Location Map:

Sample collected by: KMM

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Water **Sample Number:** TW-1-GW

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: ~~TW-13~~ TW-1

External Sample Number:

Latitude: 38.829759 **Sample Collection:** 9/26/13 14:42

Longitude: -94.632548

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
4 VOAs	HCl		VOCs / TPH-GRO
2 L Amber	HCL		TPH-DRO

Property Owner Information:

Sample Comments:

Sample collected from screened interval 26'-30' bgs

Sample Location Map:

Sample collected by: M Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Recycling Site

Matrix: Water **Sample Number:** TW-2-GW

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: TW-2

External Sample Number:

Latitude: 38.831036 **Sample Collection:** 4/26/13 10 : 03

Longitude: -94.631822

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
6 VOAs	HCl		VOCs / TPH-GRO
2L Amber	HCl		TPH-DRO

Property Owner Information:

Sample Comments:

Sample Location Map:

Sample Collected from screened interval 24'-27' bgs

Petroleum odor.

Sample collected by: K. Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Water **Sample Number:** TW-3-GW

Project ID:
Location: Sterling **Project Manager:** Mammoliti
State: KS

Location Description: TW-3

External Sample Number:

Latitude: 38.831509 **Sample Collection:** 4/30/13 08:55

Longitude: 94.631237

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
~~60~~ 6 VOAs	HCl		VOCs / TPH-GRO
2 1L liter amber	Ice		TPH-DRO

Property Owner Information:

Sample Comments:

Sample Location Map:

Sample collected from screened interval 26'-30' bgs.

* Sample recollected due to damaged containers in shipping.

Sample collected by: C. Dillon

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Decoating Site

Matrix: Water **Sample Number:** TW-3-GW

Project ID:

Location: Stanley **Project Manager:** Mammoliti

State: KS

Location Description: ~~TW-2~~ TW-3

External Sample Number:

Latitude: 38.931509 **Sample Collection:** 4/26/13 10:44

Longitude: -94.631237

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
6 VOAs	HCl		VOCs / TPH-GRO
2 Amber (1L)	HCl		TPH-DRO

Property Owner Information:

Sample Comments:

Well set @ 25-29 ft bgs

Sample Location Map:

Sample collected by: K. Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Groundwater **Sample Number:** TW-4-GW

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: TW-4

External Sample Number:

Latitude: 38.830167 **Sample Collection:** 4/25/13 08:43

Longitude: -94.634308

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
6- 40 mL VOAs	HCl		VOCs, GRO
2- 1L Amber	HCl		DRO

Property Owner Information:

Sample Comments:

Well set @ 26-30' bgs

Sample Location Map:

Sample collected by: KMM

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Groundwater **Sample Number:** TW-5-GW

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: TW-5

External Sample Number:

Latitude: 38.830166 **Sample Collection:** 4/25/13 10:23

Longitude: -94.633709

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
6- 40mL VOAs	HCl		VOCs, GRO
2- 1L Ambers	HCl		DRO

Property Owner Information:

Sample Comments:

Temp well set @ 26-30' bgs

Sample Location Map:

Sample collected by: KMM

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Water

Sample Number: TW-6-GW

Project ID:

Project Manager: Mammoliti

Location: Stanley

State: KS

Location Description: TW-6

External Sample Number:

Latitude: 38.829772

Longitude: -94.634399

Sample Collection: 4/24/13 17:20

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
3 VOAs	HCl		VOCs
3 VOAs	HCl		TPH-GRO
2 1000 mL Amber	HCl		TPH-DRO

Property Owner Information:

Sample Comments:

Well @ 22'-26' bgs

Sample Location Map:

Sample collected by: K. Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting

Matrix: Groundwater **Sample Number:** TW-7-GW

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: Located @ GP-8

External Sample Number:

Latitude: 38.829760 **Sample Collection:** 4 / 25 / 13 11 : 25

Longitude: -94.633832

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
6- 40 mL VOAs	HCl		VOCs, GRO
2- 1L Ambers			DRO

Property Owner Information:

Sample Comments:

Well set at 23-27' bgs

Sample Location Map:

Sample collected by: KMM

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Water **Sample Number:** TW-8-GW

Project ID: **Project Manager:** Mammoliti

Location: Stanley **State:** KS

Location Description: TW-B

External Sample Number:

Latitude: 38.929554 **Sample Collection:** 7/25/13 15:20

Longitude: -94.634461

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
6 ~~2~~ 40mL VOAs	HCl		VOCs, GRO
2-1L Ambers	HCl		DRO

Property Owner Information:

Sample Comments:

Well set @ 24-28' bgs

Sample Location Map:

Sample collected by: KMM

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Groundwater **Sample Number:** TW-9-GW

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: Located @ GP-12/TW-9

External Sample Number:

Latitude: 38.829455 **Sample Collection:** 4 / 25 / 13 13 : 50

Longitude: -94.633375

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
6-40 mL VOA	HCl		VOCs, GRO
2-1L Ambers			DRO

Property Owner Information:

Sample Comments:

Well set @ 22-26' bgs

Sample Location Map:

Sample collected by: CMM

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting

Matrix: Water **Sample Number:** TW-10-GW

Project ID:

Location: Stanley **Project Manager:** Mammoliti

State: KS

Location Description: TW-10

External Sample Number:

Latitude: 38.829510 **Sample Collection:** 4/24/13 16:15

Longitude: -94.634639

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
3 VOAs	HCl		VOCs
3 VOAs	HCl		TPH-GRO
2 1000mL Amber	HCl		TPH-DRO

Property Owner Information:

Sample Comments:

Well @ 22'-26' bgs

Sample Location Map:

Sample collected by: K. Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Recycling Site

Matrix: Water **Sample Number:** TW-11-GW

Project ID:
Location: Stanley

Project Manager: Mammoliti
State: KS

Location Description: TW-11

External Sample Number:

Latitude: 38.829054
Longitude: -94.634478

Sample Collection: 4 / 24 / 13 15 : 32

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
3 VOAs	HCl		VOCs
3 VOAs	HCl		TPH-GRO
2 1000 mL Amber	HCl		TPH-DRO

Property Owner Information:

Sample Comments:

Well @ 20'-24' bgs

Sample Location Map:

Sample collected by: K. Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Recycling Site

Matrix: Water **Sample Number:** ~~TW-14~~ TW-12-GW

Project ID:

Location: Stanley

Project Manager: Mammoliti

State: KS

Location Description: TW-12

External Sample Number:

Latitude: 38.828946

Longitude: -94.633529

Sample Collection: 4/24/13 14:55

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
3 VOA,	HCl		VOCs
3 VOA -	HCl		TPH - GRO
2 1000 mL Amber	HCl		TPH - DRO

Property Owner Information:

Sample Comments:

Well @ 24'-28' bgs

Sample Location Map:

Sample collected by: K. Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Water **Sample Number:** TW-13-GW

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: TW-13

External Sample Number:

Latitude: 38.830179 **Sample Collection:** 4/26/13 14:05

Longitude: -94.632230

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
6 VOAs	HCl		VOCs / TPH-GRO
2 L Amber	HCl		TPH-DRO

Property Owner Information:

Sample Comments:

Sample collected from screened interval 26'-30' bgs

Sample Location Map:

Sample collected by: K. Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Recycling Site

Matrix: Water **Sample Number:** TW-14-GW

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: TW-14

External Sample Number:

Latitude: 38.832814 **Sample Collection:** 4/24/13 12:35

Longitude: -94.635178

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
3 VOA	HCL		VOCs
3 VOA	HCL		TPH-GRO
2 1000 mL Amber	HCL		TPH-DRO
2 250mL Plastic	HNO3		Total / Dissolved Metals

Property Owner Information:

Sample Comments:

Well @ 20'-24' bgs

Sample Location Map:

Sample collected by: K. Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Water **Sample Number:** Trip Blank

Project ID:

Location: Stanley **Project Manager:** Mammoliti

State: KS

Location Description: Trip Blank

External Sample Number:

Latitude: **Sample Collection:** 5/1/13 12:47

Longitude:

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2 VOAs	HCl		VOCs

Property Owner Information:

~~2 VOAs~~

Sample Comments:

Sample Location Map:

Sample collected by:

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Water

Sample Number: Trip Blank

Project ID:

Project Manager: Mammoliti

Location: Sterling

State: KS

Location Description: Trip Blank

External Sample Number:

Latitude:

Sample Collection: 4/26/13 14:58

Longitude:

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
2 VOAs	HCl		VOCs

Property Owner Information:

Sample Comments:

Sample Location Map:

Sample collected by:

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Recycling Site

Matrix: Water **Sample Number:** Field Blank

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: Field Blank

External Sample Number:

Latitude:

Longitude:

Sample Collection: 4 / 26 / 13 14 : 50

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
6 VOAs	HCL		VOCs / TPH-GRO
2 L Amber	HCL		TPH-DRO

Property Owner Information:

Sample Comments:

Sample Location Map:

Sample collected by: K Mammoliti

Sample Collection Field Sheet

US EPA Region 7

Kuhlman Diecasting Site

Matrix: Water **Sample Number:** Equipment Rinsate

Project ID:

Project Manager: Mammoliti

Location: Stanley **State:** KS

Location Description: Equipment Rinsate

External Sample Number:

Latitude:

Sample Collection: 4/26/13 15:25

Longitude:

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
6 VOAs	HCl		VOCs / TPH-GRO
2 L Amber	HCl		TPH-DRO

Property Owner Information:

Sample Comments:

Sample Location Map:

Sample collected by: M Mammoliti

Sample Collection Field Sheet
US EPA Region 7

Matrix: Groundwater Sample Number: MW-1-GW

Project ID: EPS70601.0002.015.024 Kuhlman Diecast Site Project Manager: Jeff Pritchard

Location: Stanley State: KS

Location Description: MW-1

External Sample Number: MW-1-GW

Latitude: 38.83264 Sample Collection: 6/12/13 14:53

Longitude: -94.63516

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
3 - VOAs (40mL)	HCl		VOCs
3 - VOAs (40mL)	HCl		TPH-GRO
2 - 1L-Ambers	HCl		TPH-DRO
2 - 250 mL plastic	HNO_3		Metals - Total & Dissolved

Property Owner Information:

Sample Comments:

Sample Collected at 18 feet Below ground Surface

Sample Location Map:

Sample collected by: _____

Sample Collection Field Sheet
US EPA Region 7

Matrix: Groundwater
Sample Number: MW-2-GW
Project ID: E057001.0002.015.024 Kuhlman Die Casting Site
Project Manager: Jeff Pritchard
Location: Stanley
State: KS

Location Description: MW-2
External Sample Number: MW-2-GW
Latitude: 38.82964
Longitude: -94.63459
Sample Collection: 6/12/13 13:54

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
3-VOA (40mL)	HCl		TPH-GRO
3-VOA (40mL)	HCl		VOCs
1-1L Glass Amber	HCl		TPH-DRO

Property Owner Information:

Sample Comments:
Sample Location Map:

Sample Collected at 19 feet below ground Surface

Sample collected by: _____

Sample Collection Field Sheet
US EPA Region 7

Matrix: Groundwater **Sample Number:** MW-3-GW

Project ID: EPS70601.0002.015.024 Kuhlman Diecasting Site **Project Manager:** Jeff Pritchard

Location: Stanley **State:** KS

Location Description: MW-3

External Sample Number: MW-3-GW

Latitude: 38.82950 **Sample Collection:** 6/12/13 12:44

Longitude: -94.63390

Laboratory Analysis:

Container	Preservative	Holding Time	Analysis
3- Voas (40mL)	HCl		TPH-GRO
3- Voas (40mL)	HCl		VOCs
2- 1L Glass Amber	HCl		TPH-DRO

Property Owner Information:

Sample Comments: **Sample Location Map:**

Sample collected at 17 feet below ground surface

Sample collected by: _____

Tetra Tech EM Inc.

Micropurging Groundwater Sampling Data Sheet

Well Name	GM-4	Sample Personnel	Carraccio, Dillon	Screen Interval	3.0 - 19.5
Project	Kerlalmer	Sample ID	GM-4-042	Static Water Level	8.11 ft
Project No.		Duplicate ID	N/A	Well Depth (TOC)	19.85 ft
Sample Date	04-30-2013			Feet of Water	11.74 ft

Condition of Well	Good	Flush Mount or Stickup	Stickup
Construction	PVC with Casing & Cover	Well Size	2"
Remarks	38.828803, -94.633975	Casing - PvC or other	PVC

Purging

Time	Discharge Rate	Dissolved Oxygen (mg/L)	pH	Eh/ORP (mv)	Temp (°C)	Specific Conduct (µmhos/cm at °C)	Turbidity	Cumulative Volume of Water Removed (Purged) (gallons)	Comments
15:05	Purge Began								
15:15		0.37	7.03	45.2	12.67	0.980			
15:18		0.39	7.00	35.0	12.55	0.981			
15:21		0.34	6.97	16.4	12.36	0.972			
15:24		0.41	6.95	7.9	12.49	0.980			
15:27		0.39	6.94	2.9	12.42	0.965			
15:30		0.44	6.95	-10.1	12.36	0.951			
15:33		0.48	6.95	-9.0	12.34	0.948			
15:35		0.51	6.95	-13.4	12.32	0.946	Collect Sample		

Tetra Tech EM Inc.

Micropurging Groundwater Sampling Data Sheet

Well Name: GM-7 | Sample Personnel: Canevari, D. Ulon | Screen Interval: 7.5 - 22.5
Project: Kuehlman | Sample ID: GM-7-GW | Static Water Level: 7.95
Project No. | Duplicate ID: N/A | Well Depth (TOC): 19.29
Sample Date: 04-30-2013 | Feet of Water: 11.34

Condition of Well: Good | Flush Mount or Stickup: Stickup
Construction: PVC | Well Size: 2"
Remarks: Capped 38.828666, -94.637815 | Casing - PvC or other: PVC

Purging

Time	Discharge Rate	Dissolved Oxygen (mg/L)	pH	Eh/ORP (mv)	Temp (°C)	Specific Conduct (µmhos/cm at °C)	Turbidity	Cumulative Volume of Water Removed (Purged) (gallons)	Comments
15:50	Begin Purge								
16:00	0.4L/m	0.30	6.92	-88.7	12.58	0.893			
16:03	0.4L/m	0.71	6.87	-84.5	12.64	0.883			
16:06	0.4L/m	0.21	6.85	-75.5	12.41	0.883			
16:09	0.4L/m	0.22	6.84	-73.0	12.32	0.885			
16:12	0.4L/m	0.14	6.83	-70.0	12.38	0.883			
16:15	0.4L/m	0.23	6.83	-70.0	12.37	0.883			
16:18	0.4L/m	0.14	6.83	-68.7	12.50	0.882			
16:20	0.4L/m	0.15	6.82	-65.9	12.37	0.884			

Tetra Tech EM Inc.

Micropurging Groundwater Sampling Data Sheet

Well Name	GM-13	Sample Personnel	Carraway, Dillon	Screen Interval	17.5 - 27.5
Project	Kuhlman	Sample ID	GM-13	Static Water Level	1.60
Project No.		Duplicate ID	N/A	Well Depth (TOC)	24.63
Sample Date	4-30-2013			Feet of Water	23.00

Condition of Well	Good	Flush Mount or Stickup	Stickup
Construction	PVC	Well Size	2"
Remarks	38.831070, -94.632463	Casing - PvC or other	PVC

Purging

Time	Discharge Rate	Dissolved Oxygen (mg/L)	pH	Eh/ORP (mv)	Temp (°C)	Specific Conduct (µmhos/cm at °C)	Turbidity	Cumulative Volume of Water Removed (Purged) (gallons)	Comments
13:15									
1325	0.35L/min	0.17	6.78	95.1	13.79	0.336			
1328		0.13	6.78	82.8	13.90	0.337			
1331		0.20	6.80	83.2	13.68	0.334			
1334		0.20	6.78	84.8	13.51	0.333			
1337		0.12	6.78	69.1	13.59	0.333			
1340		0.14	6.77	54.0	13.36	0.331			
1343		0.13	6.78	68.1	13.40	0.332			
1346		0.09	6.79	54.3	13.44	0.331			

Tetra Tech EM Inc.

Micropurging Groundwater Sampling Data Sheet

Well Name	GM-15	Sample Personnel	Cancemi, D. Hom	Screen Interval	15.0 - 25.0
Project	Kuhlman	Sample ID	GM-15-GW	Static Water Level	12.50
Project No.		Duplicate ID	DUP	Well Depth (TOC)	23.75
Sample Date	04-30-2013			Feet of Water	11.25

Condition of Well	Good	Flush Mount or Stickup	Stickup
Construction	PVC	Well Size	2"
Remarks	Capped 38.829391, -94.632918	Casing - PvC or other	PVC

Purging

Time	Discharge Rate	Dissolved Oxygen (mg/L)	pH	Eh/ORP (mv)	Temp (°C)	Specific Conduct (µmhos/cm at °C)	Turbidity	Cumulative Volume of Water Removed (Purged) (gallons)	Comments
1408	Begin purge								
14:18	0.4L/m	27.3	6.85	~~0.645~~ 125.9	13.34	0.645			
14:21	0.4L/m	26.4	6.83	120.9	13.30	0.644			
14:24	0.4L/m	26.8	6.82	119.2	13.29	0.645			
14:27	0.4L/m	25.4	6.81	117.9	13.28	0.644			
14:30	0.4L/m	25.2	6.80	116.2	13.22	0.643			
14:33	0.4L/m	27.1	6.79	114.5	13.20	0.643			
14:36	0.4L/m	26.5	6.79	114.4	13.27	0.643			
14:39	0.4L/m	27.6	6.78	115.2	13.22	0.643			

Tetra Tech EM Inc.

Micropurging Groundwater Sampling Data Sheet

Well Name	MW-1	Sample Personnel	C. Cannon; G. Dillon	Screen Interval	15-30
Project	Kuhlman	Sample ID	MW-1-GW	Static Water Level	9.18 feet
Project No.		Duplicate ID		Well Depth (TOC)	32.5 feet
Sample Date	6-12-13			Feet of Water	23.32 feet

Condition of Well	Good	Flush Mount or Stickup	Stick up
Construction	Pad with Well Cover	Well Size	2"
Remarks	Has Locking Cap	Casing - PVC or other	Casing is PVC

Purging

Time	Discharge Rate	Dissolved Oxygen (mg/L)	pH	Eh/ORP (mv)	Temp (°C)	Specific Conduct (µmhos/cm at °C)	Turbidity	Cumulative Volume of Water Removed (Purged) (gallons) Liters	Comments
14:18	0.4L/m	0.44	7.49	-24.9	14.88	0.777		0.4L	
14:23	0.4L/m	0.04	7.42	-47.1	15.18	0.773		2.0L	
14:28	0.4L/m	0.02	7.35	-61.4	14.90	0.749		2.0L	
14:33	0.4L/m	0.01	7.24	-68.0	15.02	0.720		2.0L	
14:36	0.4L/m	0.01	7.11	-69.8	15.31	0.705		2.0L	
14:43	0.4L/m	0.01	7.07	-73.5	14.92	0.675		2.0L	
14:48	0.4L/m	0.01	7.00	-75.5	15.06	0.662		2.0L	
14:53	0.4L/m	0.01	6.97	-78.6	15.06	0.647		2.0L	Collected Samples MW-1-GW

Tetra Tech EM Inc.

Micropurging Groundwater Sampling Data Sheet

Well Name	MW-2	Sample Personnel	C. Canevari, G. Dillon	Screen Interval	5-25 feet
Project	Kuhlman	Sample ID	MW-2-GW	Static Water Level	15.11 feet
Project No.		Duplicate ID		Well Depth (TOC)	27.5 feet
Sample Date	6-12-13			Feet of Water	12.39 feet of water

Condition of Well	Good	Flush Mount or Stickup	Stick-up
Construction	Pad with well cover	Well Size	2"
Remarks	Has Locking Cap	Casing - PVC or other	PVC Casing

Purging

Time	Discharge Rate	Dissolved Oxygen (mg/L)	pH	Eh/ORP (mv)	Temp (°C)	Specific Conduct (µmhos/cm at °C)	Turbidity	Cumulative Volume of Water Removed (Purged) (~~gallons~~) Liters	Comments
13:24	0.4L/m	0.12	6.70	-40.1	14.37	0.650	—	0.4 L	
13:29	0.4L/m	0.10	6.72	-56.3	14.50	0.635		2 L	
13:34	0.4L/m	0.11	6.72	-58.0	14.55	0.631		2L	
13:39	0.4L/m	0.07	6.73	-55.1	14.66	0.624		2L	
13:44	0.4L/m	0.08	6.72	-59.7	14.66	0.619		2L	
13:49	0.4L/m	0.07	6.70	-59.8	14.60	0.615		2L	
13:54	0.4L/m	0.11	6.69	-59.2	14.51	0.609		2L	Collected Samples MW-2-GW
~~13:59~~									

Tetra Tech EM Inc.

Micropurging Groundwater Sampling Data Sheet

Well Name	MW-3	Sample Personnel	Canaccini, Dillon	Screen Interval	15-28 ft
Project	Kuhlman	Sample ID	MW-3-GW	Static Water Level	11.44 feet
Project No.		Duplicate ID		Well Depth (TOC)	30.5 feet
Sample Date	6-12-2013			Feet of Water	19.06 feet

Condition of Well	Good	Flush Mount or Stickup	Stick
Construction	Pad with Well Cover	Well Size	2"
Remarks	Has Locking Cap	Casing - PvC or other	Casing is PVC

Purging

Time	Discharge Rate	Dissolved Oxygen (mg/L)	pH	Eh/ORP (mv)	Temp (°C)	Specific Conduct (µmhos/cm at °C)	Turbidity	Cumulative Volume of Water Removed (Purged) (gallons) Liters	Comments
12:09	0.44/m	1.71mg/L	6.97	156.2	20.13	0.993	—	0.4L	
12:14	0.44/m	1.60mg/L	6.94	143.2	20.14	0.988		2L	
12:19	0.44/m	1.46	6.88	125.3	19.65	0.911		2L	
12:24	0.44/m	1.42	6.77	113.0	18.02	0.794		2L	
12:29	0.44/m	1.37	6.69	104.6	17.56	0.731		2L	
12:34	0.44/m	1.36	6.64	98.6	17.39	0.688		2L	
12:39	0.44/m	1.35	6.62	95.3	17.32	0.670		2L	
12:44	0.44/m	1.34	6.59	91.4	17.23	0.644		2L	Collected Samples MW-3-GW

APPENDIX F

MONITORING WELL CERTIFICATION AND ELEVATION SURVEY RECORDS

WATER WELL RECORD Form WWC-5

Division of Water Resources App. No. _____

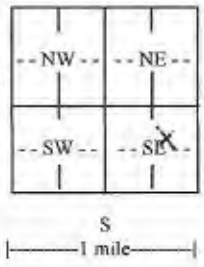
1 LOCATION OF WATER WELL: County: Johnson | Fraction: ¼ SW ¼ NE ¼ SE ¼ | Section Number: 16 | Township No.: T 14 S | Range Number: R 25 ☑E ☐W

Street/Rural Address of Well Location; if unknown, distance & direction from nearest town or intersection: If at owner's address, check here ☐.
Former Kuhlman Diecasting Facility
16400 Mission Road, Stillwell, Kansas 66085

Global Positioning System (GPS) information:
Latitude: 38.832739 (in decimal degrees)
Longitude: 94.635092 (in decimal degrees)
Elevation: 938
Datum: ☑ WGS 84, ☐ NAD 83, ☐ NAD 27
Collection Method:
☐ GPS unit (Make/Model: .....)
☑ Digital Map/Photo, ☐ Topographic Map, ☐ Land Survey
Est. Accuracy: ☑ <3 m, ☐ 3-5 m, ☐ 5-15 m, ☐ >15 m

2 WATER WELL OWNER:
RR#, Street Address, Box #: EPA Region 7
City, State, ZIP Code : 11201 Renner Road
Lenexa, KS 66219

3 LOCATE WELL WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 30 ft.
Depth(s) Groundwater Encountered (1) 24 ft. (2) N/A ft. (3) N/A ft.
WELL'S STATIC WATER LEVEL ..... ft. below land surface measured on mo/day/yr .....
Pump test data: Well water was N/A ft. after N/A hours pumping N/A gpm
EST. YIELD N/A gpm. Well water was N/A ft. after N/A hours pumping N/A gpm
Bore Hole Diameter 8.25 in. to 30 ft., and N/A in. to N/A ft.
WELL WATER TO BE USED AS: ☐ Public water supply ☐ Geothermal ☐ Injection well
☐ Domestic ☐ Feedlot ☐ Oil field water supply ☐ Dewatering ☐ Other (Specify below)
☐ Irrigation ☐ Industrial ☐ Domestic-lawn & garden ☑ Monitoring well MW-1
Was a chemical/bacteriological sample submitted to Department? ☐ Yes ☑ No
If yes, mo/day/yr sample was submitted N/A
Water well disinfected? ☐ Yes ☑ No

5 TYPE OF CASING USED: ☐ Steel ☑ PVC ☐ Other .....
CASING JOINTS: ☐ Glued ☐ Clamped ☐ Welded ☑ Threaded
Casing diameter 2 in. to 15 ft., Diameter N/A in. to N/A ft., Diameter N/A in. to N/A ft.
Casing height above land surface 30 in., Weight N/A lbs./ft., Wall thickness or gauge No. Schedule 40
TYPE OF SCREEN OR PERFORATION MATERIAL:
☐ Steel ☐ Stainless Steel ☑ PVC ☐ Other (Specify) .....
☐ Brass ☐ Galvanized Steel ☐ None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE:
☐ Continuous slot ☑ Mill slot ☐ Gauze wrapped ☐ Torch cut ☐ Drilled holes ☐ None (open hole)
☐ Louvered shutter ☐ Key punched ☐ Wire wrapped ☐ Saw cut ☐ Other (specify) .....
SCREEN-PERFORATED INTERVALS: From 15 ft. to 30 ft., From N/A ft. to N/A ft.
From N/A ft. to N/A ft., From N/A ft. to N/A ft.
GRAVEL PACK INTERVALS: From 13 ft. to 30 ft., From N/A ft. to N/A ft.
From N/A ft. to N/A ft., From N/A ft. to N/A ft.

6 GROUT MATERIAL: ☐ Neat cement ☐ Cement grout ☑ Bentonite ☐ Other Concrete 0-2 feet
Grout Intervals: From 2 ft. to 13 ft., From N/A ft. to N/A ft., From N/A ft. to N/A ft.
What is the nearest source of possible contamination:
☐ Septic tank ☐ Lateral lines ☐ Pit privy ☐ Livestock pens ☐ Insecticide storage ☑ Other (specify below)
☐ Sewer lines ☐ Cesspool ☐ Sewage lagoon ☐ Fuel storage ☐ Abandoned water well Diecasting Facility
☐ Watertight sewer lines ☐ Seepage pit ☐ Feedyard ☐ Fertilizer storage ☐ Oil well/gas well
Direction from well Southeast Distance from well ~750 feet

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHO. LOG (cont.) or PLUGGING INTERVALS
0	8	Clay, black, moist, soft			
8	17	Clay with some silt, brown, moist,			
		soft			
17	24.5	Clay with some silt, light brown,			
		soft, wet			
24.5	30	sand			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was ☑ constructed, ☐ reconstructed, or ☐ plugged under my jurisdiction and was completed on (mo/day/year) 6-10-2013 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 759 This Water Well Record was completed on (mo/day/year) 6/29/2013 under the business name of RAZEK Environmental, LLC by (signature) _____

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks and check the correct answers. Send one copy to Kansas Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-5524. Send one copy to WATER WELL OWNER and retain one for your records. Include fee of $5.00 for each constructed well. Visit us at http://www.kdheks.gov/waterwell/index.html

KSA 82a-1212

WATER WELL RECORD **Form WWC-5** Division of Water Resources App. No. _____

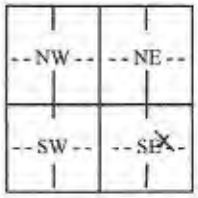
1 LOCATION OF WATER WELL: County: Johnson | Fraction: ¼ SW ¼ NE ¼ SE ¼ | Section Number: 16 | Township No.: T 14 S | Range Number: R 25 ☑E ☐W

Street/Rural Address of Well Location; if unknown, distance & direction from nearest town or intersection: If at owner's address, check here ☐.
Former Kuhlman Diecasting Facility
16400 Mission Road, Stillwell, Kansas 66085

Global Positioning System (GPS) information:
Latitude: 38.829628 (in decimal degrees)
Longitude: 94.634644 (in decimal degrees)
Elevation: 919
Datum: ☑ WGS 84, ☐ NAD 83, ☐ NAD 27
Collection Method:
☐ GPS unit (Make/Model: .....)
☑ Digital Map/Photo, ☐ Topographic Map, ☐ Land Survey
Est. Accuracy: ☑ <3 m, ☐ 3-5 m, ☐ 5-15 m, ☐ >15 m

2 WATER WELL OWNER: EPA Region 7
RR#, Street Address, Box #: 11201 Renner Road
City, State, ZIP Code : Lenexa, KS 66219

3 LOCATE WELL WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 25 ft.
Depth(s) Groundwater Encountered (1) 21 ft. (2) N/A ft. (3) N/A ft.
WELL'S STATIC WATER LEVEL ..... ft. below land surface measured on mo/day/yr .....
Pump test data: Well water was N/A ft. after N/A hours pumping N/A gpm
EST. YIELD N/A gpm. Well water was N/A ft. after N/A hours pumping N/A gpm
Bore Hole Diameter 8.25 in. to 25 ft., and N/A in. to N/A ft.
WELL WATER TO BE USED AS: ☐ Public water supply ☐ Geothermal ☐ Injection well
☐ Domestic ☐ Feedlot ☐ Oil field water supply ☐ Dewatering ☐ Other (Specify below)
☐ Irrigation ☐ Industrial ☐ Domestic-lawn & garden ☑ Monitoring well MW-2
Was a chemical/bacteriological sample submitted to Department? ☐ Yes ☑ No
If yes, mo/day/yr sample was submitted N/A
Water well disinfected? ☐ Yes ☑ No

5 TYPE OF CASING USED: ☐ Steel ☑ PVC ☐ Other .....
CASING JOINTS: ☐ Glued ☐ Clamped ☐ Welded ☑ Threaded
Casing diameter 2 in. to 5 ft., Diameter N/A in. to N/A ft., Diameter N/A in. to N/A ft.
Casing height above land surface 30 in., Weight N/A lbs./ft., Wall thickness or gauge No. Schedule 40
TYPE OF SCREEN OR PERFORATION MATERIAL:
☐ Steel ☐ Stainless Steel ☑ PVC ☐ Other (Specify) .....
☐ Brass ☐ Galvanized Steel ☐ None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE:
☐ Continuous slot ☑ Mill slot ☐ Gauze wrapped ☐ Torch cut ☐ Drilled holes ☐ None (open hole)
☐ Louvered shutter ☐ Key punched ☐ Wire wrapped ☐ Saw cut ☐ Other (specify) .....
SCREEN-PERFORATED INTERVALS: From 5 ft. to 25 ft., From N/A ft. to N/A ft.
From N/A ft. to N/A ft., From N/A ft. to N/A ft.
GRAVEL PACK INTERVALS: From 3 ft. to 25 ft., From N/A ft. to N/A ft.
From N/A ft. to N/A ft., From N/A ft. to N/A ft.

6 GROUT MATERIAL: ☐ Neat cement ☐ Cement grout ☑ Bentonite ☐ Other Concrete 0-2 feet
Grout Intervals: From 2 ft. to 3 ft., From N/A ft. to N/A ft., From N/A ft. to N/A ft.
What is the nearest source of possible contamination:
☐ Septic tank ☐ Lateral lines ☐ Pit privy ☐ Livestock pens ☐ Insecticide storage ☑ Other (specify below)
☐ Sewer lines ☐ Cesspool ☐ Sewage lagoon ☐ Fuel storage ☐ Abandoned water well Diecasting Facility
☐ Watertight sewer lines ☐ Seepage pit ☐ Feedyard ☐ Fertilizer storage ☐ Oil well/gas well
Direction from well Northeast Distance from well ~500-feet

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHO. LOG (cont.) or PLUGGING INTERVALS
0	5	Clay with some sand, black, soft,			
		moist			
5	14	Clay, dark brown, stiff, moist			
14	15	Clay, gray, stiff, moist			
15	23	Clay, grey, soft, moist			
23	25	Clay, gray, soft, wet			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was ☑ constructed, ☐ reconstructed, or ☐ plugged under my jurisdiction and was completed on (mo/day/year) 6-10-2013 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 759 This Water Well Record was completed on (mo/day/year) 6/29/2013 under the business name of RAZEK Environmental, LLC by (signature) _____

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks and check the correct answers. Send one copy to Kansas Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-5524 Send one copy to WATER WELL OWNER and retain one for your records. Include fee of $5.00 for each constructed well. Visit us at http://www.kdheks.gov/waterwell/index.html

KSA 82a-1212

WATER WELL RECORD Form WWC-5

Division of Water Resources App. No.

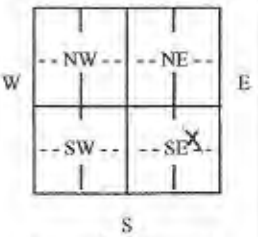
1 LOCATION OF WATER WELL: County: Johnson | Fraction: ¼ SW ¼ NE ¼ SE ¼ | Section Number: 16 | Township No.: T 14 S | Range Number: R 25 ☑E ☐W

Street/Rural Address of Well Location; if unknown, distance & direction from nearest town or intersection: If at owner's address, check here ☐.
Former Kuhlman Diecasting Facility
16400 Mission Road, Stillwell, Kansas 66085

Global Positioning System (GPS) information:
Latitude: 38.829447 (in decimal degrees)
Longitude: 94.633914 (in decimal degrees)
Elevation: 894
Datum: ☑ WGS 84, ☐ NAD 83, ☐ NAD 27
Collection Method:
☐ GPS unit (Make/Model: .....)
☑ Digital Map/Photo, ☐ Topographic Map, ☐ Land Survey
Est. Accuracy: ☑ <3 m, ☐ 3-5 m, ☐ 5-15 m, ☐ >15 m

2 WATER WELL OWNER:
RR#, Street Address, Box #: EPA Region 7 / 11201 Renner Road
City, State, ZIP Code : Lenexa, KS 66219

3 LOCATE WELL WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 28 ft.
Depth(s) Groundwater Encountered (1) 20 ft. (2) N/A ft. (3) N/A ft.
WELL'S STATIC WATER LEVEL ..... ft. below land surface measured on mo/day/yr .....
Pump test data: Well water was N/A ft. after N/A hours pumping N/A gpm
EST. YIELD N/A gpm. Well water was N/A ft. after N/A hours pumping N/A gpm
Bore Hole Diameter 8.25 in. to 13 ft., and N/A in. to N/A ft.
WELL WATER TO BE USED AS: ☐ Public water supply ☐ Geothermal ☐ Injection well
☐ Domestic ☐ Feedlot ☐ Oil field water supply ☐ Dewatering ☐ Other (Specify below)
☐ Irrigation ☐ Industrial ☐ Domestic-lawn & garden ☑ Monitoring well MW-3
Was a chemical/bacteriological sample submitted to Department? ☐ Yes ☑ No
If yes, mo/day/yr sample was submitted N/A
Water well disinfected? ☐ Yes ☑ No

5 TYPE OF CASING USED: ☐ Steel ☑ PVC ☐ Other .....
CASING JOINTS: ☐ Glued ☐ Clamped ☐ Welded ☑ Threaded
Casing diameter 2 in. to 13 ft., Diameter N/A in. to N/A ft., Diameter N/A in. to N/A ft.
Casing height above land surface 30 in., Weight N/A lbs./ft., Wall thickness or gauge No. Schedule 40
TYPE OF SCREEN OR PERFORATION MATERIAL:
☐ Steel ☐ Stainless Steel ☑ PVC ☐ Other (Specify) .....
☐ Brass ☐ Galvanized Steel ☐ None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE:
☐ Continuous slot ☑ Mill slot ☐ Gauze wrapped ☐ Torch cut ☐ Drilled holes ☐ None (open hole)
☐ Louvered shutter ☐ Key punched ☐ Wire wrapped ☐ Saw cut ☐ Other (specify) .....
SCREEN-PERFORATED INTERVALS: From 13 ft. to 28 ft., From N/A ft. to N/A ft.
From N/A ft. to N/A ft., From N/A ft. to N/A ft.
GRAVEL PACK INTERVALS: From 11 ft. to 28 ft., From N/A ft. to N/A ft.
From N/A ft. to N/A ft., From N/A ft. to N/A ft.

6 GROUT MATERIAL: ☐ Neat cement ☐ Cement grout ☑ Bentonite ☐ Other Concrete 0-2 feet
Grout Intervals: From 2 ft. to 11 ft., From N/A ft. to N/A ft., From N/A ft. to N/A ft.
What is the nearest source of possible contamination:
☐ Septic tank ☐ Lateral lines ☐ Pit privy ☐ Livestock pens ☐ Insecticide storage ☑ Other (specify below)
☐ Sewer lines ☐ Cesspool ☐ Sewage lagoon ☐ Fuel storage ☐ Abandoned water well Diecasting Facility
☐ Watertight sewer lines ☐ Seepage pit ☐ Feedyard ☐ Fertilizer storage ☐ Oil well/gas well
Direction from well North Distance from well ~450-feet

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHO. LOG (cont.) or PLUGGING INTERVALS
0	5	Clay with silt and some gravel,			
		brown, soft, moist			
5	15	Clay, dark brown, stiff, moist			
15	20	Clay dark brown soft moist			
20	25	Clay brown soft wet			
25	28	Clay light brown soft wet			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was ☑ constructed, ☐ reconstructed, or ☐ plugged under my jurisdiction and was completed on (mo/day/year) 6-10-2013 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 759 This Water Well Record was completed on (mo/day/year) 6/29/2013 under the business name of RAZEK Environmental, LLC by (signature)

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks and check the correct answers. Send one copy to Kansas Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-5524. Send one copy to WATER WELL OWNER and retain one for your records. Include fee of $5.00 for each constructed well. Visit us at http://www.kdheks.gov/waterwell/index.html

KSA 82a-1212

PRUITT and DOOLEY SURVEYING, L.L.C.

MISSOURI: 7912 Elm Ave., Raytown, MO 64138 • Ph. 816-699-4239 • Fax 816-358-7252
KANSAS: 10777 Barkley, Suite 220-I, Overland Park, KS 66211 • Ph 913-652-9002 • Fax 913-652-9034

July 9, 2013

SURVEYOR'S REPORT

Tetra Tech EMI Inc.
415 Oak Street
Kansas City, MO 64106
Kuhlman Diecasting Site
Stanley, Kansas

GM-1 Lat. = 38° 49' 57.80455" N
Lng. = 94° 38' 01.56402" W
Ground Ellipsoid Ht. = 781.62 ft.
Ground Elev. = 887.23 ft.
Top of Casing Elev. = 889.23 ft.

GM-2 Lat. = 38° 49' 55.58887" N
Lng. = 94° 38' 05.41450" W
Ground Ellipsoid Ht. = 782.72 ft.
Ground Elev. = 888.33 ft.
Top of Casing Elev. = 891.55 ft.

GM-4 Lat. = 38° 49' 44.14409" N
Lng. = 94° 38' 02.89127" W
Ground Ellipsoid Ht. = 775.71 ft.
Ground Elev. = 881.31 ft.
Top of Casing Elev. = 883.54 ft.

GM-5 Lat. = 38° 49' 43.70317" N
Lng. = 94° 38' 03.81119" W
Ground Ellipsoid Ht. = 777.10 ft.
Ground Elev. = 880.5 ft. (estimated ground due to flood debris)
Top of Casing Elev. = 882.69 ft.

GM-7 Lat. = 38° 49' 43.71577" N
Lng. = 94° 37' 58.52475" W
Ground Ellipsoid Ht. = 775.88 ft.
Ground Elev. = 881.48 ft.
Top of Casing Elev. = 883.72 ft.

GM-8 Lat. = 38° 49' 57.32994" N
Lng. = 94° 37' 56.69539" W
Ground Ellipsoid Ht. = 783.91 ft.
Ground Elev. = 889.52 ft.
Top of Casing Elev. = 891.52 ft.

GM-10 Lat. = 38° 49' 55.27759" N
Lng. = 94° 38' 00.88548" W
Ground Ellipsoid Ht. = 784.59 ft.
Ground Elev. = 890.20 ft.
Top of Casing Elev. = 893.12 ft.

GM-12 Lat. = 38° 49' 47.33342" N
Lng. = 94° 37' 55.25103" W
Ground Ellipsoid Ht. = 783.03 ft.
Ground Elev. = 888.64 ft.
Top of Casing Elev. = 891.60 ft.

GM-13 Lat. = 38° 49' 51.89555" N
Lng. = 94° 37' 57.03713" W
Ground Ellipsoid Ht. = 782.53 ft.
Ground Elev. = 888.13 ft.
Top of Casing Elev. = 888.99 ft.

GM-15 Lat. = 38° 49' 45.70783" N
Lng. = 94° 37' 59.33035" W
Ground Ellipsoid Ht. = 781.04 ft.
Ground Elev. = 886.64 ft.
Top of Casing Elev. = 889.09 ft.

GM-17 Lat. = 38° 49' 53.83313" N
Lng. = 94° 38' 03.63581" W
Ground Ellipsoid Ht. = 780.55 ft.
Ground Elev. = 886.16 ft.
Top of Casing Elev. = 890.09 ft.

MW-1 Lat. = 38° 49' 57.47597" N
Lng. = 94° 38' 06.56011" W
Ground Ellipsoid Ht. = 784.16 ft.
Ground Elev. = 889.76 ft.
Top of Casing Elev. = 892.09 ft.

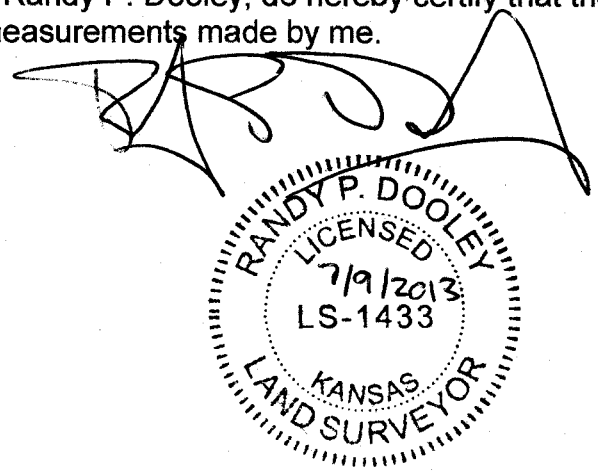
MW-2 Lat. = 38° 49' 46.20144" N
Lng. = 94° 38' 04.62950" W
Ground Ellipsoid Ht. = 782.91 ft.
Ground Elev. = 888.50 ft.
Top of Casing Elev. = 890.69 ft.

MW-3 Lat. = 38° 49' 46.10078" N
Lng. = 94° 38' 02.09128" W
Ground Ellipsoid Ht. = 782.22 ft.
Ground Elev. = 887.82 ft.
Top of Casing Elev. = 890.12 ft.

Monitoring wells, Lat, Lng, Ellipsoid ht. data is NAD 83 Elevations are NAVD 88

MODOT GPS Reference Network (NAD 83) was used to establish the data.
GEOID CONUS 99 was used to establish Elevations.

I, Randy P. Dooley, do hereby certify that the above data are based on actual measurements made by me.



APPENDIX G

CHAIN-OF-CUSTODY RECORDS AND ANALYTICAL RESULTS

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

May 13, 2013

Project: Kuhlman Die Casting Site

Submittal Date: 04/27/2013
Group Number: 1386031
PO Number: 1093775
State of Sample Origin: KS

Client Sample Description	Lancaster Labs (LLI) #
Field Blank Grab Water Sample	7037864
Equipment Blank Grab Water Sample	7037865
Trip Blank Water Sample	7037866
TW-1-GW Grab Groundwater Sample	7037867
TW-13-GW Grab Groundwater Sample	7037868
TW-3-GW Grab Groundwater Sample	7037869
TW-2-GW Grab Groundwater Sample	7037870
TW-8-GW Grab Groundwater Sample	7037871
TW-7-GW Grab Groundwater Sample	7037872
TW-5-GW Grab Groundwater Sample	7037873
TW-4-GW Grab Groundwater Sample	7037874
TW-9-GW Grab Groundwater Sample	7037875
TW-6-GW Grab Groundwater Sample	7037876
TW-10-GW Grab Groundwater Sample	7037877
TW-11-GW Grab Groundwater Sample	7037878
TW-12-GW Grab Groundwater Sample	7037879
TW-14-GW Grab Groundwater Sample	7037880
TW-14-GW Filtered Grab Groundwater Sample	7037881

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Tetra Tech	Attn: Emily Fisher
ELECTRONIC COPY TO	Tetra Tech, Inc.	Attn: Jeff Pritchard

Respectfully Submitted,

Amek Carter
Specialist

(717) 556-7252

Sample Description: Field Blank Grab Water Sample
Kuhlman Die Casting

LLI Sample # WW 7037864
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 15:18 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDCFB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	10	J	6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	1	J	0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.		1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	N.D.		1	5	1
10335	Vinyl Chloride	75-01-4	N.D.		1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	0.039	J	0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.		0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.		0.10	0.40	1
02112	Total TPH	n.a.	N.D.		0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: Field Blank Grab Water Sample
Kuhlman Die Casting

LLI Sample # WW 7037864
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 15:18 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDCFB

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	T131211AA	05/01/2013 17:50	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131211AA	05/01/2013 17:50	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 00:30	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 00:30	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/01/2013 21:23	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: Equipment Blank Grab Water Sample
Kuhlman Die Casting

LLI Sample # WW 7037865
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 15:25 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDCEB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	12	J	6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	1	J	0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.		1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	N.D.		1	5	1
10335	Vinyl Chloride	75-01-4	N.D.		1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.		0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.		0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.		0.10	0.40	1
02112	Total TPH	n.a.	N.D.		0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: Equipment Blank Grab Water Sample
Kuhlman Die Casting

LLI Sample # WW 7037865
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 15:25 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDCEB

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	T131211AA	05/01/2013 18:14	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131211AA	05/01/2013 18:14	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 00:56	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 00:56	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/01/2013 22:11	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: Trip Blank Water Sample
Kuhlman Die Casting

LLI Sample # WW 7037866
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 14:50 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDCTB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131201AA	04/30/2013 11:33	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131201AA	04/30/2013 11:33	Linda C Pape	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-1-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037867
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 14:42 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.	0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.	0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.	0.10	0.40	1
02112	Total TPH	n.a.	N.D.	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-1-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037867
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 14:42 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC01

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131201AA	04/30/2013 11:56	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131201AA	04/30/2013 11:56	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 03:28	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 03:28	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/01/2013 23:00	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-13-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037868
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 14:05 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC13

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	N.D.		0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.		1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	N.D.		1	5	1
10335	Vinyl Chloride	75-01-4	N.D.		1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.		0.10	0.10	1
02112	Kerosene	8008-20-6	N.D.		0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	0.15	J	0.10	0.40	1
02112	Total TPH	n.a.	N.D.		0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-13-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037868
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 14:05 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC13

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131201AA	04/30/2013 12:20	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131201AA	04/30/2013 12:20	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 03:53	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 03:53	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/01/2013 23:48	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-3-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037869
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 10:44 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Sample Description: TW-3-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037869
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 10:44 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131201AA	04/30/2013 12:43	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131201AA	04/30/2013 12:43	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 04:44	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 04:44	Laura M Krieger	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-2-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037870
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 10:03 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	730	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	2.5	0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.	3.0	3.0	1
02112	10W-40 Motor Oil	n.a.	N.D.	4.0	4.0	1
02112	Total TPH	n.a.	2.5	0.10	0.40	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the

*=This limit was used in the evaluation of the final result

Sample Description: TW-2-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037870
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 10:03 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor

first trial. Similar sample patterns were obtained in both trials.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131202AA	05/01/2013 06:10	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131202AA	05/01/2013 06:10	Brett W Kenyon	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 08:06	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 08:06	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 09:28	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-8-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037871
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 15:20 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	N.D.		0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	3	J	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	3	J	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	260		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	3	J	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	240		1	5	1
10335	Vinyl Chloride	75-01-4	N.D.		1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	270		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	0.064	J	0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.		0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.		0.10	0.40	1
02112	Total TPH	n.a.	N.D.		0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-8-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037871
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 15:20 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC08

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131202AA	05/01/2013 06:57	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131202AA	05/01/2013 06:57	Brett W Kenyon	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 05:09	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 05:09	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 00:36	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-7-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037872
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 11:25 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	6	J	6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	N.D.		0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.		1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	N.D.		1	5	1
10335	Vinyl Chloride	75-01-4	N.D.		1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	190		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	7.9		0.37	1.0	10
02112	Kerosene	8008-20-6	N.D.		8.0	8.0	10
02112	10W-40 Motor Oil	n.a.	N.D.		12	12	10
02112	Total TPH	n.a.	7.9		1.0	4.0	10

*=This limit was used in the evaluation of the final result

Sample Description: TW-7-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037872
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 11:25 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC07

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131201AA	04/30/2013 13:07	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131201AA	04/30/2013 13:07	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 08:32	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 08:32	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 15:40	Heather E Williams	10
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-5-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037873
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 10:23 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	1	J	0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.		1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	N.D.		1	5	1
10335	Vinyl Chloride	75-01-4	N.D.		1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	0.16		0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.		0.30	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.		0.40	0.40	1
02112	Total TPH	n.a.	0.16	J	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-5-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037873
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 10:23 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC05

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131201AA	04/30/2013 13:30	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131201AA	04/30/2013 13:30	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 05:35	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 05:35	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 01:25	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-4-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037874
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 08:43 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	N.D.		0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.		1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	N.D.		1	5	1
10335	Vinyl Chloride	75-01-4	1	J	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	0.37		0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.		0.40	0.40	1
02112	10W-40 Motor Oil	n.a.	N.D.		0.60	0.60	1
02112	Total TPH	n.a.	0.37	J	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-4-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037874
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 08:43 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC04

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131201AA	04/30/2013 13:53	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131201AA	04/30/2013 13:53	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13121B07A	05/01/2013 17:44	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13121B07A	05/01/2013 17:44	Catherine J Schwarz	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 02:13	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-9-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037875
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 13:50 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	N.D.		0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.		1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	N.D.		1	5	1
10335	Vinyl Chloride	75-01-4	N.D.		1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	0.11		0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.		0.30	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.		0.40	0.40	1
02112	Total TPH	n.a.	0.11	J	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-9-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037875
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 13:50 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC09

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131201AA	04/30/2013 14:17	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131201AA	04/30/2013 14:17	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13121B07A	05/01/2013 18:10	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13121B07A	05/01/2013 18:10	Catherine J Schwarz	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 04:39	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-6-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037876
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 17:20 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC06

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	0.9	J	0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	1	J	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	100		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	N.D.		1	5	1
10335	Vinyl Chloride	75-01-4	1	J	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	92		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.		0.20	0.20	1
02112	Kerosene	8008-20-6	N.D.		0.30	0.30	1
02112	10W-40 Motor Oil	n.a.	0.18	J	0.10	0.40	1
02112	Total TPH	n.a.	0.12	J	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-6-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037876
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 17:20 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC06

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131201AA	04/30/2013 14:40	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131201AA	04/30/2013 14:40	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 06:00	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 06:00	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 05:27	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-10-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037877
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 16:15 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	0.058 J	0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.	0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.	0.10	0.40	1
02112	Total TPH	n.a.	N.D.	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-10-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037877
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 16:15 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC10

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131201AA	04/30/2013 15:03	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131201AA	04/30/2013 15:03	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 06:25	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 06:25	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 06:16	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-11-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037878
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 15:32 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.	0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.	0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.	0.10	0.40	1
02112	Total TPH	n.a.	N.D.	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-11-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037878
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 15:32 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC11

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131211AA	05/01/2013 18:05	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131211AA	05/01/2013 18:05	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 06:50	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 06:50	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 07:04	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-12-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037879
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 14:55 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	0.050 J	0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.	0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.	0.10	0.40	1
02112	Total TPH	n.a.	N.D.	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-12-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037879
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 14:55 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC12

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131211AA	05/01/2013 18:29	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131211AA	05/01/2013 18:29	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 07:16	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 07:16	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 07:52	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-14-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037880
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 12:35 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.	0.037	0.10	1
02112	Kerosene	8008-20-6	N.D.	0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.	0.10	0.40	1
02112	Total TPH	n.a.	N.D.	0.10	0.40	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0350	0.0068	0.0200	1
07046	Barium	7440-39-3	1.58	0.00033	0.0050	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-14-GW Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037880
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 12:35 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

KDC14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07049	Cadmium	7440-43-9	0.0037 J	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.0303	0.0011	0.0150	1
07055	Lead	7439-92-1	0.0437	0.0051	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.00010 J	0.000070	0.00020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	N131211AA	05/01/2013 18:52	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131211AA	05/01/2013 18:52	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13119B07A	04/30/2013 07:41	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	13119B07A	04/30/2013 07:41	Laura M Krieger	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131200009A	05/02/2013 08:40	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131200009A	04/30/2013 21:55	Karen L Beyer	1
07035	Arsenic	SW-846 6010B	1	131171848007	05/03/2013 13:22	Katlin N Cataldi	1
07046	Barium	SW-846 6010B	1	131171848007	05/03/2013 13:22	Katlin N Cataldi	1
07049	Cadmium	SW-846 6010B	1	131171848007	05/03/2013 13:22	Katlin N Cataldi	1
07051	Chromium	SW-846 6010B	1	131171848007	05/03/2013 13:22	Katlin N Cataldi	1
07055	Lead	SW-846 6010B	1	131171848007	05/03/2013 13:22	Katlin N Cataldi	1
07036	Selenium	SW-846 6010B	1	131171848007	05/03/2013 13:22	Katlin N Cataldi	1
07066	Silver	SW-846 6010B	1	131171848007	05/03/2013 13:22	Katlin N Cataldi	1
00259	Mercury	SW-846 7470A	1	131175713005	04/30/2013 11:10	Damary Valentin	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	131171848007	04/29/2013 09:45	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131175713005	04/29/2013 16:30	Nelli S Markaryan	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-14-GW Filtered Grab Groundwater Sample
Kuhlman Die Casting

LLI Sample # WW 7037881
LLI Group # 1386031
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 12:35 by KM

Submitted: 04/27/2013 09:30
Reported: 05/13/2013 10:23

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0256	0.0068	0.0200	1
07046	Barium	7440-39-3	0.649	0.00033	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00036	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131171848007	05/03/2013 15:26	Katlin N Cataldi	1
07046	Barium	SW-846 6010B	1	131171848007	05/03/2013 15:26	Katlin N Cataldi	1
07049	Cadmium	SW-846 6010B	1	131171848007	05/03/2013 15:26	Katlin N Cataldi	1
07051	Chromium	SW-846 6010B	1	131171848007	05/03/2013 15:26	Katlin N Cataldi	1
07055	Lead	SW-846 6010B	1	131171848007	05/03/2013 15:26	Katlin N Cataldi	1
07036	Selenium	SW-846 6010B	1	131171848007	05/03/2013 15:26	Katlin N Cataldi	1
07066	Silver	SW-846 6010B	1	131171848007	05/03/2013 15:26	Katlin N Cataldi	1
00259	Mercury	SW-846 7470A	1	131195713004	05/02/2013 08:50	Damary Valentin	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	131171848007	04/29/2013 09:45	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131195713004	05/01/2013 17:15	Nelli S Markaryan	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1386031
Reported: 05/13/13 at 10:23 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: N131201AA	Sample number(s): 7037866-7037869,7037872-7037877								
Acetone	N.D.	6.	20	ug/l	80	82	35-181	3	30
Benzene	N.D.	0.5	5	ug/l	99	97	77-121	2	30
Bromodichloromethane	N.D.	1.	5	ug/l	95	93	73-120	3	30
Bromoform	N.D.	1.	5	ug/l	99	98	61-120	0	30
Bromomethane	N.D.	1.	5	ug/l	84	80	51-120	5	30
2-Butanone	N.D.	3.	10	ug/l	77	76	57-141	0	30
Carbon Disulfide	N.D.	1.	5	ug/l	107	102	68-121	5	30
Carbon Tetrachloride	N.D.	1.	5	ug/l	105	101	65-137	4	30
Chlorobenzene	N.D.	0.8	5	ug/l	105	103	80-120	2	30
Chloroethane	N.D.	1.	5	ug/l	86	82	60-120	5	30
Chloroform	N.D.	0.8	5	ug/l	101	98	77-122	3	30
Chloromethane	N.D.	1.	5	ug/l	78	78	54-123	0	30
Dibromochloromethane	N.D.	1.	5	ug/l	103	102	72-120	1	30
1,1-Dichloroethane	N.D.	1.	5	ug/l	100	95	79-120	5	30
1,2-Dichloroethane	N.D.	1.	5	ug/l	97	93	64-130	3	30
1,1-Dichloroethene	N.D.	0.8	5	ug/l	112	109	76-124	3	30
cis-1,2-Dichloroethene	N.D.	0.8	5	ug/l	102	100	80-120	2	30
trans-1,2-Dichloroethene	N.D.	0.8	5	ug/l	106	105	80-120	1	30
1,2-Dichloropropane	N.D.	1.	5	ug/l	98	96	80-120	3	30
cis-1,3-Dichloropropene	N.D.	1.	5	ug/l	101	100	78-120	1	30
trans-1,3-Dichloropropene	N.D.	1.	5	ug/l	93	93	66-124	1	30
Ethylbenzene	N.D.	0.8	5	ug/l	99	97	79-120	2	30
2-Hexanone	N.D.	3.	10	ug/l	76	77	59-125	1	30
4-Methyl-2-pentanone	N.D.	3.	10	ug/l	79	78	65-122	2	30
Methylene Chloride	N.D.	2.	5	ug/l	107	105	84-118	2	30
Styrene	N.D.	1.	5	ug/l	105	103	77-120	1	30
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/l	88	89	70-129	1	30
Tetrachloroethene	N.D.	0.8	5	ug/l	109	107	79-120	2	30
Toluene	N.D.	0.7	5	ug/l	103	101	79-120	2	30
1,1,1-Trichloroethane	N.D.	0.8	5	ug/l	107	104	66-126	3	30
1,1,2-Trichloroethane	N.D.	0.8	5	ug/l	100	100	80-120	0	30
Trichloroethene	N.D.	1.	5	ug/l	104	99	80-120	5	30
Vinyl Chloride	N.D.	1.	5	ug/l	90	88	63-120	2	30
Xylene (Total)	N.D.	0.8	5	ug/l	103	102	77-120	1	30
Batch number: N131202AA	Sample number(s): 7037870-7037871								
Acetone	N.D.	6.	20	ug/l	79	88	35-181	11	30
Benzene	N.D.	0.5	5	ug/l	96	96	77-121	0	30
Bromodichloromethane	N.D.	1.	5	ug/l	96	95	73-120	2	30
Bromoform	N.D.	1.	5	ug/l	100	98	61-120	2	30
Bromomethane	N.D.	1.	5	ug/l	84	82	51-120	3	30
2-Butanone	N.D.	3.	10	ug/l	72	75	57-141	5	30
Carbon Disulfide	N.D.	1.	5	ug/l	100	100	68-121	0	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1386031
Reported: 05/13/13 at 10:23 AM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Carbon Tetrachloride	N.D.	1.	5	ug/l	108	108	65-137	0	30
Chlorobenzene	N.D.	0.8	5	ug/l	103	102	80-120	0	30
Chloroethane	N.D.	1.	5	ug/l	83	84	60-120	1	30
Chloroform	N.D.	0.8	5	ug/l	103	101	77-122	1	30
Chloromethane	N.D.	1.	5	ug/l	76	76	54-123	1	30
Dibromochloromethane	N.D.	1.	5	ug/l	103	102	72-120	1	30
1,1-Dichloroethane	N.D.	1.	5	ug/l	96	96	79-120	0	30
1,2-Dichloroethane	N.D.	1.	5	ug/l	101	102	64-130	0	30
1,1-Dichloroethene	N.D.	0.8	5	ug/l	109	108	76-124	1	30
cis-1,2-Dichloroethene	N.D.	0.8	5	ug/l	100	99	80-120	0	30
trans-1,2-Dichloroethene	N.D.	0.8	5	ug/l	103	102	80-120	1	30
1,2-Dichloropropane	N.D.	1.	5	ug/l	93	93	80-120	0	30
cis-1,3-Dichloropropene	N.D.	1.	5	ug/l	97	98	78-120	1	30
trans-1,3-Dichloropropene	N.D.	1.	5	ug/l	92	91	66-124	2	30
Ethylbenzene	N.D.	0.8	5	ug/l	97	96	79-120	2	30
2-Hexanone	N.D.	3.	10	ug/l	72	73	59-125	2	30
4-Methyl-2-pentanone	N.D.	3.	10	ug/l	74	74	65-122	0	30
Methylene Chloride	N.D.	2.	5	ug/l	102	102	84-118	1	30
Styrene	N.D.	1.	5	ug/l	100	101	77-120	1	30
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/l	82	82	70-129	0	30
Tetrachloroethene	N.D.	0.8	5	ug/l	110	109	79-120	0	30
Toluene	N.D.	0.7	5	ug/l	99	99	79-120	0	30
1,1,1-Trichloroethane	N.D.	0.8	5	ug/l	109	109	66-126	0	30
1,1,2-Trichloroethane	N.D.	0.8	5	ug/l	98	97	80-120	1	30
Trichloroethene	N.D.	1.	5	ug/l	100	99	80-120	0	30
Vinyl Chloride	N.D.	1.	5	ug/l	86	86	63-120	0	30
Xylene (Total)	N.D.	0.8	5	ug/l	100	100	77-120	0	30
Batch number: N131211AA	Sample number(s): 7037878-7037880								
Acetone	N.D.	6.	20	ug/l	110		35-181		
Benzene	N.D.	0.5	5	ug/l	97		77-121		
Bromodichloromethane	N.D.	1.	5	ug/l	99		73-120		
Bromoform	N.D.	1.	5	ug/l	102		61-120		
Bromomethane	N.D.	1.	5	ug/l	84		51-120		
2-Butanone	N.D.	3.	10	ug/l	84		57-141		
Carbon Disulfide	N.D.	1.	5	ug/l	101		68-121		
Carbon Tetrachloride	N.D.	1.	5	ug/l	110		65-137		
Chlorobenzene	N.D.	0.8	5	ug/l	105		80-120		
Chloroethane	N.D.	1.	5	ug/l	86		60-120		
Chloroform	N.D.	0.8	5	ug/l	102		77-122		
Chloromethane	N.D.	1.	5	ug/l	77		54-123		
Dibromochloromethane	N.D.	1.	5	ug/l	106		72-120		
1,1-Dichloroethane	N.D.	1.	5	ug/l	97		79-120		
1,2-Dichloroethane	N.D.	1.	5	ug/l	103		64-130		
1,1-Dichloroethene	N.D.	0.8	5	ug/l	107		76-124		
cis-1,2-Dichloroethene	N.D.	0.8	5	ug/l	101		80-120		
trans-1,2-Dichloroethene	N.D.	0.8	5	ug/l	103		80-120		
1,2-Dichloropropane	N.D.	1.	5	ug/l	95		80-120		
cis-1,3-Dichloropropene	N.D.	1.	5	ug/l	100		78-120		
trans-1,3-Dichloropropene	N.D.	1.	5	ug/l	93		66-124		
Ethylbenzene	N.D.	0.8	5	ug/l	98		79-120		
2-Hexanone	N.D.	3.	10	ug/l	76		59-125		
4-Methyl-2-pentanone	N.D.	3.	10	ug/l	76		65-122		
Methylene Chloride	N.D.	2.	5	ug/l	104		84-118		
Styrene	N.D.	1.	5	ug/l	103		77-120		
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/l	86		70-129		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1386031
Reported: 05/13/13 at 10:23 AM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Tetrachloroethene	N.D.	0.8	5	ug/l	109		79-120		
Toluene	N.D.	0.7	5	ug/l	99		79-120		
1,1,1-Trichloroethane	N.D.	0.8	5	ug/l	110		66-126		
1,1,2-Trichloroethane	N.D.	0.8	5	ug/l	100		80-120		
Trichloroethene	N.D.	1.	5	ug/l	101		80-120		
Vinyl Chloride	N.D.	1.	5	ug/l	88		63-120		
Xylene (Total)	N.D.	0.8	5	ug/l	101		77-120		
Batch number: T131211AA	Sample number(s): 7037864-7037865								
Acetone	N.D.	6.	20	ug/l	108		35-181		
Benzene	N.D.	0.5	5	ug/l	105		77-121		
Bromodichloromethane	N.D.	1.	5	ug/l	104		73-120		
Bromoform	N.D.	1.	5	ug/l	104		61-120		
Bromomethane	N.D.	1.	5	ug/l	88		51-120		
2-Butanone	N.D.	3.	10	ug/l	99		57-141		
Carbon Disulfide	N.D.	1.	5	ug/l	83		68-121		
Carbon Tetrachloride	N.D.	1.	5	ug/l	112		65-137		
Chlorobenzene	N.D.	0.8	5	ug/l	108		80-120		
Chloroethane	N.D.	1.	5	ug/l	80		60-120		
Chloroform	N.D.	0.8	5	ug/l	108		77-122		
Chloromethane	N.D.	1.	5	ug/l	89		54-123		
Dibromochloromethane	N.D.	1.	5	ug/l	106		72-120		
1,1-Dichloroethane	N.D.	1.	5	ug/l	108		79-120		
1,2-Dichloroethane	N.D.	1.	5	ug/l	107		64-130		
1,1-Dichloroethene	N.D.	0.8	5	ug/l	100		76-124		
cis-1,2-Dichloroethene	N.D.	0.8	5	ug/l	109		80-120		
trans-1,2-Dichloroethene	N.D.	0.8	5	ug/l	105		80-120		
1,2-Dichloropropane	N.D.	1.	5	ug/l	108		80-120		
cis-1,3-Dichloropropene	N.D.	1.	5	ug/l	111		78-120		
trans-1,3-Dichloropropene	N.D.	1.	5	ug/l	101		66-124		
Ethylbenzene	N.D.	0.8	5	ug/l	105		79-120		
2-Hexanone	N.D.	3.	10	ug/l	72		59-125		
4-Methyl-2-pentanone	N.D.	3.	10	ug/l	78		65-122		
Methylene Chloride	N.D.	2.	5	ug/l	106		84-118		
Styrene	N.D.	1.	5	ug/l	108		77-120		
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/l	107		70-129		
Tetrachloroethene	N.D.	0.8	5	ug/l	102		79-120		
Toluene	N.D.	0.7	5	ug/l	106		79-120		
1,1,1-Trichloroethane	N.D.	0.8	5	ug/l	109		66-126		
1,1,2-Trichloroethane	N.D.	0.8	5	ug/l	106		80-120		
Trichloroethene	N.D.	1.	5	ug/l	104		80-120		
Vinyl Chloride	N.D.	1.	5	ug/l	87		63-120		
Xylene (Total)	N.D.	0.8	5	ug/l	105		77-120		
Batch number: 13119B07A	Sample number(s): 7037864-7037865,7037867-7037873,7037876-7037880								
TPH-GRO water C6-C10	N.D.	20.	50	ug/l	103	103	75-135	1	30
Batch number: 13121B07A	Sample number(s): 7037874-7037875								
TPH-GRO water C6-C10	N.D.	20.	50	ug/l	101		75-135		
Batch number: 131200009A	Sample number(s): 7037864-7037865,7037867-7037868,7037870-7037880								
Diesel/#2 Fuel	N.D.	0.037	0.10	mg/l	77	78	63-122	1	20
Kerosene	N.D.	0.10	0.30	mg/l					
10W-40 Motor Oil	N.D.	0.10	0.40	mg/l					
Total TPH	N.D.	0.10	0.40	mg/l					

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1386031
Reported: 05/13/13 at 10:23 AM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 131171848007	Sample number(s): 7037880-7037881								
Arsenic	N.D.	0.0068	0.0200	mg/l	103		90-113		
Barium	N.D.	0.00033	0.0050	mg/l	106		90-110		
Cadmium	N.D.	0.00036	0.0050	mg/l	104		90-112		
Chromium	N.D.	0.0011	0.0150	mg/l	106		90-110		
Lead	N.D.	0.0051	0.0150	mg/l	107		88-110		
Selenium	N.D.	0.0075	0.0200	mg/l	102		80-120		
Silver	N.D.	0.0012	0.0050	mg/l	103		80-120		
Batch number: 131175713005	Sample number(s): 7037880								
Mercury	N.D.	0.00007 0	0.00020	mg/l	87		80-120		
Batch number: 131195713004	Sample number(s): 7037881								
Mercury	N.D.	0.00007 0	0.00020	mg/l	92		80-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: N131202AA	Sample number(s): 7037870-7037871 UNSPK: P031768								
Acetone	76	73	33-159	3	30				
Benzene	102	99	72-134	3	30				
Bromodichloromethane	101	96	78-125	5	30				
Bromoform	101	100	48-118	1	30				
Bromomethane	90	88	47-129	1	30				
2-Butanone	72	71	57-138	2	30				
Carbon Disulfide	111	109	67-135	2	30				
Carbon Tetrachloride	119	116	72-135	2	30				
Chlorobenzene	107	106	87-124	1	30				
Chloroethane	91	90	51-145	1	30				
Chloroform	106	105	81-134	2	30				
Chloromethane	80	81	46-137	0	30				
Dibromochloromethane	106	103	74-116	3	30				
1,1-Dichloroethane	102	100	84-129	2	30				
1,2-Dichloroethane	103	100	68-131	2	30				
1,1-Dichloroethene	119	117	75-155	2	30				
cis-1,2-Dichloroethene	105	103	80-141	1	30				
trans-1,2-Dichloroethene	111	107	81-142	4	30				
1,2-Dichloropropane	98	95	83-124	3	30				
cis-1,3-Dichloropropene	103	100	70-116	2	30				
trans-1,3-Dichloropropene	95	94	74-119	1	30				
Ethylbenzene	103	102	71-134	1	30				
2-Hexanone	72	71	55-127	1	30				
4-Methyl-2-pentanone	76	73	63-123	3	30				
Methylene Chloride	105	104	78-133	1	30				
Styrene	106	104	78-125	2	30				
1,1,2,2-Tetrachloroethane	86	85	72-128	1	30				
Tetrachloroethene	116	107	80-128	7	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1386031
Reported: 05/13/13 at 10:23 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Toluene	105	103	80-125	2	30				
1,1,1-Trichloroethane	117	114	69-140	3	30				
1,1,2-Trichloroethane	100	98	71-141	1	30				
Trichloroethene	109	105	88-133	3	30				
Vinyl Chloride	96	96	66-133	1	30				
Xylene (Total)	106	106	79-125	0	30				
Batch number: N131211AA	Sample number(s): 7037878-7037880 UNSPK: P039518								
Acetone	77	76	33-159	1	30				
Benzene	102	103	72-134	1	30				
Bromodichloromethane	102	103	78-125	0	30				
Bromoform	102	103	48-118	1	30				
Bromomethane	86	90	47-129	4	30				
2-Butanone	72	72	57-138	0	30				
Carbon Disulfide	112	112	67-135	0	30				
Carbon Tetrachloride	122	122	72-135	1	30				
Chlorobenzene	110	110	87-124	0	30				
Chloroethane	88	92	51-145	5	30				
Chloroform	128 (2)	155 (2)	81-134	4	30				
Chloromethane	78	82	46-137	5	30				
Dibromochloromethane	107	107	74-116	0	30				
1,1-Dichloroethane	104	105	84-129	1	30				
1,2-Dichloroethane	105	106	68-131	1	30				
1,1-Dichloroethene	121	119	75-155	1	30				
cis-1,2-Dichloroethene	107	107	80-141	1	30				
trans-1,2-Dichloroethene	112	111	81-142	1	30				
1,2-Dichloropropane	98	100	83-124	2	30				
cis-1,3-Dichloropropene	102	105	70-116	2	30				
trans-1,3-Dichloropropene	97	96	74-119	0	30				
Ethylbenzene	104	105	71-134	1	30				
2-Hexanone	71	72	55-127	1	30				
4-Methyl-2-pentanone	74	75	63-123	1	30				
Methylene Chloride	108	108	78-133	0	30				
Styrene	107	108	78-125	1	30				
1,1,2,2-Tetrachloroethane	85	85	72-128	1	30				
Tetrachloroethene	119	118	80-128	1	30				
Toluene	107	107	80-125	0	30				
1,1,1-Trichloroethane	120	118	69-140	1	30				
1,1,2-Trichloroethane	102	101	71-141	1	30				
Trichloroethene	111	111	88-133	0	30				
Vinyl Chloride	94	99	66-133	5	30				
Xylene (Total)	108	108	79-125	0	30				
Batch number: T131211AA	Sample number(s): 7037864-7037865 UNSPK: P032898								
Acetone	103	108	33-159	5	30				
Benzene	102	112	72-134	10	30				
Bromodichloromethane	95	106	78-125	11	30				
Bromoform	92	101	48-118	10	30				
Bromomethane	88	92	47-129	5	30				
2-Butanone	92	99	57-138	7	30				
Carbon Disulfide	82	89	67-135	7	30				
Carbon Tetrachloride	113	123	72-135	8	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1386031
Reported: 05/13/13 at 10:23 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Chlorobenzene	101	112	87-124	10	30				
Chloroethane	82	85	51-145	3	30				
Chloroform	106	114	81-134	7	30				
Chloromethane	84	89	46-137	5	30				
Dibromochloromethane	95	107	74-116	12	30				
1,1-Dichloroethane	104	115	84-129	10	30				
1,2-Dichloroethane	99 (2)	91 (2)	68-131	1	30				
1,1-Dichloroethene	99	108	75-155	9	30				
cis-1,2-Dichloroethene	106	113	80-141	7	30				
trans-1,2-Dichloroethene	102	113	81-142	10	30				
1,2-Dichloropropane	102	112	83-124	9	30				
cis-1,3-Dichloropropene	101	112	70-116	10	30				
trans-1,3-Dichloropropene	93	104	74-119	11	30				
Ethylbenzene	99	112	71-134	13	30				
2-Hexanone	66	73	55-127	9	30				
4-Methyl-2-pentanone	70	76	63-123	8	30				
Methylene Chloride	102	111	78-133	9	30				
Styrene	100	111	78-125	10	30				
1,1,2,2-Tetrachloroethane	92	102	72-128	11	30				
Tetrachloroethene	128	169*	80-128	28	30				
Toluene	104	113	80-125	8	30				
1,1,1-Trichloroethane	108	120	69-140	10	30				
1,1,2-Trichloroethane	99	107	71-141	8	30				
Trichloroethene	107	118	88-133	10	30				
Vinyl Chloride	87	91	66-133	5	30				
Xylene (Total)	100	112	79-125	11	30				
Batch number: 13121B07A	Sample number(s): 7037874-7037875 UNSPK: P040311								
TPH-GRO water C6-C10	113	116	75-135	1	30				
Batch number: 131171848007	Sample number(s): 7037880-7037881 UNSPK: 7037880 BKG: 7037880								
Arsenic	104	106	81-123	2	20	0.0350	0.0368	5 (1)	20
Barium	101	107	78-118	3	20	1.58	1.58	0	20
Cadmium	98	100	83-116	1	20	0.0037 J	0.0038 J	4 (1)	20
Chromium	109	112	81-120	2	20	0.0303	0.0350	14 (1)	20
Lead	103	106	75-125	3	20	0.0437	0.0446	2 (1)	20
Selenium	99	102	75-125	3	20	N.D.	N.D.	0 (1)	20
Silver	99	103	75-125	4	20	N.D.	N.D.	0 (1)	20
Batch number: 131175713005	Sample number(s): 7037880 UNSPK: P035335 BKG: P035335								
Mercury	88	86	80-120	1	20	N.D.	N.D.	0 (1)	20
Batch number: 131195713004	Sample number(s): 7037881 UNSPK: 7037881 BKG: 7037881								
Mercury	93	94	80-120	1	20	N.D.	N.D.	0 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1386031
Reported: 05/13/13 at 10:23 AM

Surrogate Quality Control

Analysis Name: 8260 Ext. Water Master w/GRO
Batch number: N131201AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7037866	99	99	98	95
7037867	99	101	99	95
7037868	100	100	98	95
7037869	101	101	99	95
7037872	100	100	98	96
7037873	101	101	99	97
7037874	101	101	98	95
7037875	101	101	99	95
7037876	102	102	98	95
7037877	102	102	99	96
Blank	98	100	100	97
LCS	99	99	101	99
LCSD	98	99	102	99
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 8260 Ext. Water Master w/GRO
Batch number: N131202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7037870	100	98	103	98
7037871	104	101	99	96
Blank	101	100	98	94
LCS	102	98	101	102
LCSD	101	99	101	102
MS	101	99	102	101
MSD	100	97	101	101
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 8260 Ext. Water Master w/GRO
Batch number: N131211AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7037878	101	101	99	94
7037879	101	100	99	94
7037880	102	102	99	94
Blank	103	100	98	95
LCS	102	98	101	101
MS	102	101	101	102
MSD	102	101	101	101
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 8260 Ext. Water Master w/GRO
Batch number: T131211AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7037864	105	102	102	98
7037865	103	101	100	100
Blank	103	103	99	100

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1386031
Reported: 05/13/13 at 10:23 AM

Surrogate Quality Control

LCS	101	104	101	101
MS	100	102	101	103
MSD	100	98	103	102
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO water C6-C10
Batch number: 13119B07A

	Trifluorotoluene-F
7037864	84
7037865	84
7037867	83
7037868	80
7037869	78
7037870	86
7037871	90
7037872	81
7037873	83
7037876	85
7037877	80
7037878	81
7037879	81
7037880	83
Blank	83
LCS	99
LCSD	96
Limits:	63-135

Analysis Name: TPH-GRO water C6-C10
Batch number: 13121B07A

	Trifluorotoluene-F
7037874	84
7037875	86
Blank	77
LCS	86
MS	110
MSD	111
Limits:	63-135

Analysis Name: TPH by OA-2 (Waters)
Batch number: 131200009A

	Chlorobenzene	Orthoterphenyl
7037864	85	103
7037865	69	86
7037867	67	82
7037868	98	111
7037870	34	21*
7037871	88	90
7037872	0*	80
7037873	81	77
7037874	83	73

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1386031
Reported: 05/13/13 at 10:23 AM

Surrogate Quality Control

7037875	63	79
7037876	75	71
7037877	81	98
7037878	79	84
7037879	86	86
7037880	78	82
Blank	97	104
LCS	77	102
LCSD	85	100
Limits:	28-152	52-131

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

Acct. # 14738 For Eurofins Lancaster Laboratories use only Group # 1386031 Sample # 7037864-81
Instructions on reverse side correspond with circled numbers.

COC # 325533

1 Client Information

Client: Tetra Tech Inc	Acct. #:
Project Name/#: Kuhlman Diecasting Site	PWSID #:
Project Manager: Jeff Pritchard	P.O. #:
Sampler: KMannsiti	Quote #:

Name of state where samples were collected: Kansas

4 Matrix: Soil ☐ Sediment ☐ Water ☒ Ground ☐ Potable ☐ Surface ☐ NPDES ☐ Other: ____

5 Analysis Requested — Preservation Codes: H H H

3 | **2 Sample Identification** | Collected Date | Collected Time | Grab | Composite | Total # of Containers | VOCs | TPH-GRO | TPH-DRO | **6 Remarks**

Sample Identification	Date	Time	Grab	Composite	Total # of Containers	VOCs	TPH-GRO	TPH-DRO
Field Blank	4/26/13	1518	X		8	X	X	X
Equipment Rinsate	4/26/13	1525	X		8	X	X	X
Trip Blank	4/26/13	1450	X		2	X		
TW-1-GW	4/26/13	1442	X		8	X	X	X
TW-13-GW	4/26/13	1405	X		8	X	X	X
TW-3-GW	4/26/13	1044	X		8	X	X	X
TW-2-GW	4/26/13	1003	X		8	X	X	X
TW-8-GW	4/25/13	1520	X		8	X	X	X
TW-7-GW	4/25/13	1125	X		8	X	X	X
TW-5-GW	4/25/13	1023	X		8	X	X	X

For Lab Use Only
FSC: ____
SCR#: ____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

7 Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed: ____

E-mail address: jpritchard@seagullenvirotech.com

8 Data Package Options (circle if required)
Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	4/26/13	1800	[signature]		
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by [signature]	4.29.13	930

9

EDD Required? Yes No
If yes, format: ____

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS ____ FedEx X Other ____

Temperature upon receipt 1.8-2.4 °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

Acct. # 14738 For Eurofins Lancaster Laboratories use only Group # 1386031 Sample # 7037864-81
Instructions on reverse side correspond with circled numbers.

COC # 325532

1 Client Information

Client: TetraTech Inc.
Acct. #:
Project Name/#: Kuhlman Diecasting Site
PWSID #:
Project Manager: Jeff Pritchard
P.O. #:
Sampler: K. Mammolitti
Quote #:
Name of state where samples were collected: Kansas

4 Matrix

Sediment ☐ Soil ☐ | Ground ☒ Potable ☐ Water | Surface ☐ NPDES ☐ | Other: ☐

5 Analysis Requested

Preservation Codes

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	VOCs	TPH-GRO	TPH-DRO	Total + Dissolved Metals	Remarks
TW-4-GW	4/25/13	0847	X		8	X	X	X		
TW-13-GW	4/25/13	1405	X		8	X	X	X		GRO
TW-9-GW	4/25/13	1350	X		8	X	X	X		
TW-6-GW	4/24/13	1720	X		8	X	X	X		
TW-10-GW	4/24/13	1615	X		7	X	X	X		1 L Amber lost in transit (broken)
TW-11-GW	4/24/13	1532	X		8	X	X	X		
TW-12-GW	4/24/13	1455	X		8	X	X	X		
TW-14-GW	4/24/13	1235	X		11	X	X	X	X	11 Containers including QC

7 Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed:

E-mail address:

8 Data Package Options (circle if required)
Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	4/26/13	1800			
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	4.27.13	930

EDD Required? Yes No
If yes, format:
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS FedEx Other

Temperature upon receipt 1.8-2.4 °C

eurofins | Lancaster Laboratories

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

May 14, 2013

Project: Kuhlman Die Casting Site

Submittal Date: 05/02/2013
Group Number: 1387153
PO Number: 1093775
State of Sample Origin: KS

Client Sample Description	Lancaster Labs (LLI) #
GP-1-14'-16' Soil Sample	7042730
GP-2-10'-12' Soil Sample	7042731
GP-3-14'-16' Soil Sample	7042732
GP-4-14'-16' Soil Sample	7042733
GP-5-6'-8' Soil Sample	7042734
GP-6-18'-20' Soil Sample	7042735
GP-7-18'-20' Soil Sample	7042736
GP-8-13'-15' Soil Sample	7042737
GP-9-18'-20' Soil Sample	7042738
GP-10-18'-20' Soil Sample	7042739
GP-11-3'-5' Soil Sample	7042740
GP-12-14'-16' Soil Sample	7042741
GM-4-GW Grab Groundwater Sample	7042742
GM-7-GW Grab Groundwater Sample	7042743
GM-13-GW Grab Groundwater Sample	7042744
GM-15-GW Grab Groundwater Sample	7042745
TW-3-GW Grab Groundwater Sample	7042746
BM-F-1 Grab Concrete Sample	7042747
BM-F-1 Grab Concrete Sample	7042748
BM-F-2 Grab Concrete Sample	7042749
BM-F-2 Grab Concrete Sample	7042750
BM-W-1 Composite Concrete Sample	7042751
BM-W-1 Composite Concrete Sample	7042752
BM-F-3 Grab Concrete Sample	7042753
BM-F-3 Grab Concrete Sample	7042754
BM-W-2 Composite Concrete Sample	7042755
BM-W-2 Composite Concrete Sample	7042756
BM-F-4 Grab Concrete Sample	7042757
BM-F-4 Grab Concrete Sample	7042758
BM-Debris-1 Composite Concrete Sample	7042759
BM-Debris-1 Composite Concrete Sample	7042760
BM-WWTP-1 Composite Concrete Sample	7042761

BM-WWTP-1 Composite Concrete Sample	7042762
BM-W-3 Composite Concrete Sample	7042763
BM-W-3 Composite Concrete Sample	7042764
BM-W-4 Composite Concrete Sample	7042765
BM-W-4 Composite Concrete Sample	7042766
Trip Blank Water Sample	7042767

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Tetra Tech	Attn: Emily Fisher
ELECTRONIC COPY TO	Tetra Tech, Inc.	Attn: Jeff Pritchard

Respectfully Submitted,

Amek Carter

Amek Carter
Specialist

(717) 556-7252

Sample Description: GP-1-14'-16' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042730
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 10:06 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC1

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	7	J	5	16	0.78
10237	Benzene	71-43-2	0.5	J	0.4	4	0.78
10237	Bromodichloromethane	75-27-4	N.D.		0.8	4	0.78
10237	Bromoform	75-25-2	N.D.		0.8	4	0.78
10237	Bromomethane	74-83-9	N.D.		2	4	0.78
10237	2-Butanone	78-93-3	N.D.		3	8	0.78
10237	Carbon Disulfide	75-15-0	N.D.		0.8	4	0.78
10237	Carbon Tetrachloride	56-23-5	N.D.		0.8	4	0.78
10237	Chlorobenzene	108-90-7	N.D.		0.8	4	0.78
10237	Chloroethane	75-00-3	N.D.		2	4	0.78
10237	Chloroform	67-66-3	N.D.		0.8	4	0.78
10237	Chloromethane	74-87-3	N.D.		2	4	0.78
10237	Dibromochloromethane	124-48-1	N.D.		0.8	4	0.78
10237	1,1-Dichloroethane	75-34-3	N.D.		0.8	4	0.78
10237	1,2-Dichloroethane	107-06-2	N.D.		0.8	4	0.78
10237	1,1-Dichloroethene	75-35-4	N.D.		0.8	4	0.78
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	4	0.78
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	4	0.78
10237	1,2-Dichloropropane	78-87-5	N.D.		0.8	4	0.78
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.8	4	0.78
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.8	4	0.78
10237	Ethylbenzene	100-41-4	N.D.		0.8	4	0.78
10237	2-Hexanone	591-78-6	N.D.		2	8	0.78
10237	4-Methyl-2-pentanone	108-10-1	N.D.		2	8	0.78
10237	Methylene Chloride	75-09-2	N.D.		2	4	0.78
10237	Styrene	100-42-5	N.D.		0.8	4	0.78
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.8	4	0.78
10237	Tetrachloroethene	127-18-4	N.D.		0.8	4	0.78
10237	Toluene	108-88-3	N.D.		0.8	4	0.78
10237	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	4	0.78
10237	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	4	0.78
10237	Trichloroethene	79-01-6	N.D.		0.8	4	0.78
10237	Vinyl Chloride	75-01-4	N.D.		0.8	4	0.78
10237	Xylene (Total)	1330-20-7	N.D.		0.8	4	0.78
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	N.D.		0.2	0.9	21.4
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	N.D.		4.00	12.0	1
02110	Kerosene	8008-20-6	N.D.		5.00	12.0	1
02110	10W-40 Motor Oil	n.a.	N.D.		10.0	30.0	1
02110	Total TPH	n.a.	N.D.		10.0	30.0	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	20.0		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-1-14'-16' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042730
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 10:06 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	A131251AA	05/06/2013 02:17	Andrea E Lando	0.78
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/30/2013 10:06	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/30/2013 10:06	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/30/2013 10:06	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/03/2013 18:02	Laura M Krieger	21.4
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/30/2013 10:06	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/09/2013 04:16	Heather E Williams	1
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-2-10'-12' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042731
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 09:57 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**	**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.	300	870	43.4
10237	Benzene	71-43-2	N.D.	22	220	43.4
10237	Bromodichloromethane	75-27-4	N.D.	43	220	43.4
10237	Bromoform	75-25-2	N.D.	43	220	43.4
10237	Bromomethane	74-83-9	N.D.	87	220	43.4
10237	2-Butanone	78-93-3	N.D.	170	430	43.4
10237	Carbon Disulfide	75-15-0	N.D.	43	220	43.4
10237	Carbon Tetrachloride	56-23-5	N.D.	43	220	43.4
10237	Chlorobenzene	108-90-7	N.D.	43	220	43.4
10237	Chloroethane	75-00-3	N.D.	87	220	43.4
10237	Chloroform	67-66-3	N.D.	43	220	43.4
10237	Chloromethane	74-87-3	N.D.	87	220	43.4
10237	Dibromochloromethane	124-48-1	N.D.	43	220	43.4
10237	1,1-Dichloroethane	75-34-3	N.D.	43	220	43.4
10237	1,2-Dichloroethane	107-06-2	N.D.	43	220	43.4
10237	1,1-Dichloroethene	75-35-4	N.D.	43	220	43.4
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	43	220	43.4
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	43	220	43.4
10237	1,2-Dichloropropane	78-87-5	N.D.	43	220	43.4
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	43	220	43.4
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	43	220	43.4
10237	Ethylbenzene	100-41-4	N.D.	43	220	43.4
10237	2-Hexanone	591-78-6	N.D.	130	430	43.4
10237	4-Methyl-2-pentanone	108-10-1	N.D.	130	430	43.4
10237	Methylene Chloride	75-09-2	N.D.	87	220	43.4
10237	Styrene	100-42-5	N.D.	43	220	43.4
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	43	220	43.4
10237	Tetrachloroethene	127-18-4	N.D.	43	220	43.4
10237	Toluene	108-88-3	N.D.	43	220	43.4
10237	1,1,1-Trichloroethane	71-55-6	N.D.	43	220	43.4
10237	1,1,2-Trichloroethane	79-00-5	N.D.	43	220	43.4
10237	Trichloroethene	79-01-6	N.D.	43	220	43.4
10237	Vinyl Chloride	75-01-4	N.D.	43	220	43.4
10237	Xylene (Total)	1330-20-7	N.D.	43	220	43.4
	Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**	**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	280	6.7	33	836.12
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**	**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	458	4.00	12.0	1
02110	Kerosene	8008-20-6	N.D.	450	450	1
02110	10W-40 Motor Oil	n.a.	N.D.	750	750	1
02110	Total TPH	n.a.	458	10.0	30.0	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	20.7	0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-2-10'-12' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042731
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 09:57 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	R131231AA	05/03/2013 12:53	Lauren C Temple	43.4
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/26/2013 09:57	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/26/2013 09:57	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/26/2013 09:57	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/03/2013 23:27	Laura M Krieger	836.12
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/26/2013 09:57	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/09/2013 09:05	Heather E Williams	1
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-3-14'-16' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042732
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 11:50 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**	**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.	290	830	41.46
10237	Benzene	71-43-2	N.D.	21	210	41.46
10237	Bromodichloromethane	75-27-4	N.D.	41	210	41.46
10237	Bromoform	75-25-2	N.D.	41	210	41.46
10237	Bromomethane	74-83-9	N.D.	83	210	41.46
10237	2-Butanone	78-93-3	N.D.	170	410	41.46
10237	Carbon Disulfide	75-15-0	N.D.	41	210	41.46
10237	Carbon Tetrachloride	56-23-5	N.D.	41	210	41.46
10237	Chlorobenzene	108-90-7	N.D.	41	210	41.46
10237	Chloroethane	75-00-3	N.D.	83	210	41.46
10237	Chloroform	67-66-3	N.D.	41	210	41.46
10237	Chloromethane	74-87-3	N.D.	83	210	41.46
10237	Dibromochloromethane	124-48-1	N.D.	41	210	41.46
10237	1,1-Dichloroethane	75-34-3	N.D.	41	210	41.46
10237	1,2-Dichloroethane	107-06-2	N.D.	41	210	41.46
10237	1,1-Dichloroethene	75-35-4	N.D.	41	210	41.46
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	41	210	41.46
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	41	210	41.46
10237	1,2-Dichloropropane	78-87-5	N.D.	41	210	41.46
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	41	210	41.46
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	41	210	41.46
10237	Ethylbenzene	100-41-4	N.D.	41	210	41.46
10237	2-Hexanone	591-78-6	N.D.	120	410	41.46
10237	4-Methyl-2-pentanone	108-10-1	N.D.	120	410	41.46
10237	Methylene Chloride	75-09-2	N.D.	83	210	41.46
10237	Styrene	100-42-5	N.D.	41	210	41.46
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	41	210	41.46
10237	Tetrachloroethene	127-18-4	N.D.	41	210	41.46
10237	Toluene	108-88-3	N.D.	41	210	41.46
10237	1,1,1-Trichloroethane	71-55-6	N.D.	41	210	41.46
10237	1,1,2-Trichloroethane	79-00-5	N.D.	41	210	41.46
10237	Trichloroethene	79-01-6	N.D.	41	210	41.46
10237	Vinyl Chloride	75-01-4	N.D.	41	210	41.46
10237	Xylene (Total)	1330-20-7	N.D.	41	210	41.46
	Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**	**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	99	3.5	17	436.3
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**	**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	961	8.00	24.0	2
02110	Kerosene	8008-20-6	N.D.	910	910	2
02110	10W-40 Motor Oil	n.a.	N.D.	1,350	1,350	2
02110	Total TPH	n.a.	961	20.0	60.0	2
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	21.4	0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-3-14'-16' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042732
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/26/2013 11:50 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	R131231AA	05/03/2013 14:58	Lauren C Temple	41.46
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/26/2013 11:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/26/2013 11:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/26/2013 11:50	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/04/2013 00:03	Laura M Krieger	436.3
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/26/2013 11:50	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/10/2013 17:08	Heather E Williams	2
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-4-14'-16' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042733
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 11:15 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**	**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.	310	880	43.78
10237	Benzene	71-43-2	N.D.	22	220	43.78
10237	Bromodichloromethane	75-27-4	N.D.	44	220	43.78
10237	Bromoform	75-25-2	N.D.	44	220	43.78
10237	Bromomethane	74-83-9	N.D.	88	220	43.78
10237	2-Butanone	78-93-3	N.D.	180	440	43.78
10237	Carbon Disulfide	75-15-0	N.D.	44	220	43.78
10237	Carbon Tetrachloride	56-23-5	N.D.	44	220	43.78
10237	Chlorobenzene	108-90-7	N.D.	44	220	43.78
10237	Chloroethane	75-00-3	N.D.	88	220	43.78
10237	Chloroform	67-66-3	N.D.	44	220	43.78
10237	Chloromethane	74-87-3	N.D.	88	220	43.78
10237	Dibromochloromethane	124-48-1	N.D.	44	220	43.78
10237	1,1-Dichloroethane	75-34-3	N.D.	44	220	43.78
10237	1,2-Dichloroethane	107-06-2	N.D.	44	220	43.78
10237	1,1-Dichloroethene	75-35-4	N.D.	44	220	43.78
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	44	220	43.78
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	44	220	43.78
10237	1,2-Dichloropropane	78-87-5	N.D.	44	220	43.78
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	44	220	43.78
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	44	220	43.78
10237	Ethylbenzene	100-41-4	N.D.	44	220	43.78
10237	2-Hexanone	591-78-6	N.D.	130	440	43.78
10237	4-Methyl-2-pentanone	108-10-1	N.D.	130	440	43.78
10237	Methylene Chloride	75-09-2	N.D.	88	220	43.78
10237	Styrene	100-42-5	N.D.	44	220	43.78
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	44	220	43.78
10237	Tetrachloroethene	127-18-4	N.D.	44	220	43.78
10237	Toluene	108-88-3	N.D.	44	220	43.78
10237	1,1,1-Trichloroethane	71-55-6	N.D.	44	220	43.78
10237	1,1,2-Trichloroethane	79-00-5	N.D.	44	220	43.78
10237	Trichloroethene	79-01-6	N.D.	44	220	43.78
10237	Vinyl Chloride	75-01-4	N.D.	44	220	43.78
10237	Xylene (Total)	1330-20-7	N.D.	44	220	43.78
	Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**	**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	110	1.7	8.3	206.27
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**	**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	645	8.00	24.0	2
02110	Kerosene	8008-20-6	N.D.	610	610	2
02110	10W-40 Motor Oil	n.a.	N.D.	900	900	2
02110	Total TPH	n.a.	645	20.0	60.0	2
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	26.3	0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-4-14'-16' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042733
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/24/2013 11:15 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	R131231AA	05/03/2013 15:22	Lauren C Temple	43.78
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/24/2013 11:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/24/2013 11:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/24/2013 11:15	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/04/2013 00:39	Laura M Krieger	206.27
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/24/2013 11:15	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/10/2013 17:57	Heather E Williams	2
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-5-6'-8' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042734
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 12:27 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC5

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	19		5	15	0.76
10237	Benzene	71-43-2	0.4	J	0.4	4	0.76
10237	Bromodichloromethane	75-27-4	N.D.		0.8	4	0.76
10237	Bromoform	75-25-2	N.D.		0.8	4	0.76
10237	Bromomethane	74-83-9	N.D.		2	4	0.76
10237	2-Butanone	78-93-3	3	J	3	8	0.76
10237	Carbon Disulfide	75-15-0	N.D.		0.8	4	0.76
10237	Carbon Tetrachloride	56-23-5	N.D.		0.8	4	0.76
10237	Chlorobenzene	108-90-7	N.D.		0.8	4	0.76
10237	Chloroethane	75-00-3	N.D.		2	4	0.76
10237	Chloroform	67-66-3	N.D.		0.8	4	0.76
10237	Chloromethane	74-87-3	N.D.		2	4	0.76
10237	Dibromochloromethane	124-48-1	N.D.		0.8	4	0.76
10237	1,1-Dichloroethane	75-34-3	N.D.		0.8	4	0.76
10237	1,2-Dichloroethane	107-06-2	N.D.		0.8	4	0.76
10237	1,1-Dichloroethene	75-35-4	N.D.		0.8	4	0.76
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	4	0.76
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	4	0.76
10237	1,2-Dichloropropane	78-87-5	N.D.		0.8	4	0.76
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.8	4	0.76
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.8	4	0.76
10237	Ethylbenzene	100-41-4	N.D.		0.8	4	0.76
10237	2-Hexanone	591-78-6	N.D.		2	8	0.76
10237	4-Methyl-2-pentanone	108-10-1	N.D.		2	8	0.76
10237	Methylene Chloride	75-09-2	N.D.		2	4	0.76
10237	Styrene	100-42-5	N.D.		0.8	4	0.76
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.8	4	0.76
10237	Tetrachloroethene	127-18-4	N.D.		0.8	4	0.76
10237	Toluene	108-88-3	N.D.		0.8	4	0.76
10237	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	4	0.76
10237	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	4	0.76
10237	Trichloroethene	79-01-6	N.D.		0.8	4	0.76
10237	Vinyl Chloride	75-01-4	N.D.		0.8	4	0.76
10237	Xylene (Total)	1330-20-7	N.D.		0.8	4	0.76
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	N.D.		0.2	1	24.32
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	N.D.		4.00	12.0	1
02110	Kerosene	8008-20-6	N.D.		5.00	12.0	1
02110	10W-40 Motor Oil	n.a.	N.D.		10.0	30.0	1
02110	Total TPH	n.a.	N.D.		10.0	30.0	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	18.4		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-5-6'-8' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042734
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 12:27 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC5

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	A131251AA	05/06/2013 02:40	Andrea E Lando	0.76
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/30/2013 12:27	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/30/2013 12:27	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/30/2013 12:27	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/03/2013 18:38	Laura M Krieger	24.32
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/30/2013 12:27	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/09/2013 05:04	Heather E Williams	1
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-6-18'-20' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042735
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 11:14 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**	**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.	290	820	41.12
10237	Benzene	71-43-2	N.D.	21	210	41.12
10237	Bromodichloromethane	75-27-4	N.D.	41	210	41.12
10237	Bromoform	75-25-2	N.D.	41	210	41.12
10237	Bromomethane	74-83-9	N.D.	82	210	41.12
10237	2-Butanone	78-93-3	N.D.	160	410	41.12
10237	Carbon Disulfide	75-15-0	N.D.	41	210	41.12
10237	Carbon Tetrachloride	56-23-5	N.D.	41	210	41.12
10237	Chlorobenzene	108-90-7	N.D.	41	210	41.12
10237	Chloroethane	75-00-3	N.D.	82	210	41.12
10237	Chloroform	67-66-3	N.D.	41	210	41.12
10237	Chloromethane	74-87-3	N.D.	82	210	41.12
10237	Dibromochloromethane	124-48-1	N.D.	41	210	41.12
10237	1,1-Dichloroethane	75-34-3	N.D.	41	210	41.12
10237	1,2-Dichloroethane	107-06-2	N.D.	41	210	41.12
10237	1,1-Dichloroethene	75-35-4	N.D.	41	210	41.12
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	41	210	41.12
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	41	210	41.12
10237	1,2-Dichloropropane	78-87-5	N.D.	41	210	41.12
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	41	210	41.12
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	41	210	41.12
10237	Ethylbenzene	100-41-4	N.D.	41	210	41.12
10237	2-Hexanone	591-78-6	N.D.	120	410	41.12
10237	4-Methyl-2-pentanone	108-10-1	N.D.	120	410	41.12
10237	Methylene Chloride	75-09-2	N.D.	82	210	41.12
10237	Styrene	100-42-5	N.D.	41	210	41.12
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	41	210	41.12
10237	Tetrachloroethene	127-18-4	N.D.	41	210	41.12
10237	Toluene	108-88-3	N.D.	41	210	41.12
10237	1,1,1-Trichloroethane	71-55-6	N.D.	41	210	41.12
10237	1,1,2-Trichloroethane	79-00-5	N.D.	41	210	41.12
10237	Trichloroethene	79-01-6	N.D.	41	210	41.12
10237	Vinyl Chloride	75-01-4	N.D.	41	210	41.12
10237	Xylene (Total)	1330-20-7	N.D.	41	210	41.12
	Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**	**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	41	1.6	7.8	193.8
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**	**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	311	4.00	12.0	1
02110	Kerosene	8008-20-6	N.D.	300	300	1
02110	10W-40 Motor Oil	n.a.	N.D.	450	450	1
02110	Total TPH	n.a.	311	10.0	30.0	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	23.2	0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-6-18'-20' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042735
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 11:14 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	R131231AA	05/03/2013 15:44	Lauren C Temple	41.12
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/30/2013 11:14	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/30/2013 11:14	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/30/2013 11:14	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/04/2013 01:15	Laura M Krieger	193.8
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/30/2013 11:14	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/09/2013 08:17	Heather E Williams	1
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-7-18'-20' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042736
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 16:12 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC7

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.		290	820	41.19
10237	Benzene	71-43-2	N.D.		21	210	41.19
10237	Bromodichloromethane	75-27-4	N.D.		41	210	41.19
10237	Bromoform	75-25-2	N.D.		41	210	41.19
10237	Bromomethane	74-83-9	N.D.		82	210	41.19
10237	2-Butanone	78-93-3	N.D.		160	410	41.19
10237	Carbon Disulfide	75-15-0	N.D.		41	210	41.19
10237	Carbon Tetrachloride	56-23-5	N.D.		41	210	41.19
10237	Chlorobenzene	108-90-7	N.D.		41	210	41.19
10237	Chloroethane	75-00-3	N.D.		82	210	41.19
10237	Chloroform	67-66-3	N.D.		41	210	41.19
10237	Chloromethane	74-87-3	N.D.		82	210	41.19
10237	Dibromochloromethane	124-48-1	N.D.		41	210	41.19
10237	1,1-Dichloroethane	75-34-3	N.D.		41	210	41.19
10237	1,2-Dichloroethane	107-06-2	N.D.		41	210	41.19
10237	1,1-Dichloroethene	75-35-4	N.D.		41	210	41.19
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		41	210	41.19
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		41	210	41.19
10237	1,2-Dichloropropane	78-87-5	N.D.		41	210	41.19
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		41	210	41.19
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		41	210	41.19
10237	Ethylbenzene	100-41-4	N.D.		41	210	41.19
10237	2-Hexanone	591-78-6	N.D.		120	410	41.19
10237	4-Methyl-2-pentanone	108-10-1	N.D.		120	410	41.19
10237	Methylene Chloride	75-09-2	N.D.		82	210	41.19
10237	Styrene	100-42-5	N.D.		41	210	41.19
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		41	210	41.19
10237	Tetrachloroethene	127-18-4	N.D.		41	210	41.19
10237	Toluene	108-88-3	N.D.		41	210	41.19
10237	1,1,1-Trichloroethane	71-55-6	N.D.		41	210	41.19
10237	1,1,2-Trichloroethane	79-00-5	N.D.		41	210	41.19
10237	Trichloroethene	79-01-6	N.D.		41	210	41.19
10237	Vinyl Chloride	75-01-4	N.D.		41	210	41.19
10237	Xylene (Total)	1330-20-7	N.D.		41	210	41.19
	Reporting limits were raised due to interference from the sample matrix.						
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	47		1.4	7.1	176.99
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	10.4	J	4.00	12.0	1
02110	Kerosene	8008-20-6	N.D.		12.0	12.0	1
02110	10W-40 Motor Oil	n.a.	N.D.		30.0	30.0	1
02110	Total TPH	n.a.	10.4	J	10.0	30.0	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	20.8		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-7-18'-20' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042736
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 16:12 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC7

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	R131231AA	05/03/2013 16:07	Lauren C Temple	41.19
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/25/2013 16:12	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/25/2013 16:12	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/25/2013 16:12	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/04/2013 01:51	Laura M Krieger	176.99
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/25/2013 16:12	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/09/2013 05:52	Heather E Williams	1
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-8-13'-15' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042737
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 10:08 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC8

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**	**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.	300	850	42.44
10237	Benzene	71-43-2	N.D.	21	210	42.44
10237	Bromodichloromethane	75-27-4	N.D.	42	210	42.44
10237	Bromoform	75-25-2	N.D.	42	210	42.44
10237	Bromomethane	74-83-9	N.D.	85	210	42.44
10237	2-Butanone	78-93-3	N.D.	170	420	42.44
10237	Carbon Disulfide	75-15-0	N.D.	42	210	42.44
10237	Carbon Tetrachloride	56-23-5	N.D.	42	210	42.44
10237	Chlorobenzene	108-90-7	N.D.	42	210	42.44
10237	Chloroethane	75-00-3	N.D.	85	210	42.44
10237	Chloroform	67-66-3	N.D.	42	210	42.44
10237	Chloromethane	74-87-3	N.D.	85	210	42.44
10237	Dibromochloromethane	124-48-1	N.D.	42	210	42.44
10237	1,1-Dichloroethane	75-34-3	N.D.	42	210	42.44
10237	1,2-Dichloroethane	107-06-2	N.D.	42	210	42.44
10237	1,1-Dichloroethene	75-35-4	N.D.	42	210	42.44
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	42	210	42.44
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	42	210	42.44
10237	1,2-Dichloropropane	78-87-5	N.D.	42	210	42.44
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	42	210	42.44
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	42	210	42.44
10237	Ethylbenzene	100-41-4	N.D.	42	210	42.44
10237	2-Hexanone	591-78-6	N.D.	130	420	42.44
10237	4-Methyl-2-pentanone	108-10-1	N.D.	130	420	42.44
10237	Methylene Chloride	75-09-2	N.D.	85	210	42.44
10237	Styrene	100-42-5	N.D.	42	210	42.44
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	42	210	42.44
10237	Tetrachloroethene	127-18-4	N.D.	42	210	42.44
10237	Toluene	108-88-3	N.D.	42	210	42.44
10237	1,1,1-Trichloroethane	71-55-6	N.D.	42	210	42.44
10237	1,1,2-Trichloroethane	79-00-5	N.D.	42	210	42.44
10237	Trichloroethene	79-01-6	N.D.	42	210	42.44
10237	Vinyl Chloride	75-01-4	N.D.	42	210	42.44
10237	Xylene (Total)	1330-20-7	N.D.	42	210	42.44
	Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**	**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	220	6.8	34	847.46
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**	**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	946	8.00	24.0	2
02110	Kerosene	8008-20-6	N.D.	900	900	2
02110	10W-40 Motor Oil	n.a.	N.D.	1,320	1,320	2
02110	Total TPH	n.a.	946	20.0	60.0	2
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	22.8	0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-8-13'-15' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042737
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 10:08 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC8

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	R131231AA	05/03/2013 16:30	Lauren C Temple	42.44
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/25/2013 10:08	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/25/2013 10:08	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/25/2013 10:08	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/04/2013 02:27	Laura M Krieger	847.46
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/25/2013 10:08	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/10/2013 18:45	Heather E Williams	2
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-9-18'-20' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042738
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 11:55 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC9

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.		5	15	0.76
10237	Benzene	71-43-2	0.7	J	0.4	4	0.76
10237	Bromodichloromethane	75-27-4	N.D.		0.8	4	0.76
10237	Bromoform	75-25-2	N.D.		0.8	4	0.76
10237	Bromomethane	74-83-9	N.D.		2	4	0.76
10237	2-Butanone	78-93-3	N.D.		3	8	0.76
10237	Carbon Disulfide	75-15-0	N.D.		0.8	4	0.76
10237	Carbon Tetrachloride	56-23-5	N.D.		0.8	4	0.76
10237	Chlorobenzene	108-90-7	N.D.		0.8	4	0.76
10237	Chloroethane	75-00-3	N.D.		2	4	0.76
10237	Chloroform	67-66-3	N.D.		0.8	4	0.76
10237	Chloromethane	74-87-3	N.D.		2	4	0.76
10237	Dibromochloromethane	124-48-1	N.D.		0.8	4	0.76
10237	1,1-Dichloroethane	75-34-3	0.8	J	0.8	4	0.76
10237	1,2-Dichloroethane	107-06-2	N.D.		0.8	4	0.76
10237	1,1-Dichloroethene	75-35-4	N.D.		0.8	4	0.76
10237	cis-1,2-Dichloroethene	156-59-2	55		0.8	4	0.76
10237	trans-1,2-Dichloroethene	156-60-5	2	J	0.8	4	0.76
10237	1,2-Dichloropropane	78-87-5	N.D.		0.8	4	0.76
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.8	4	0.76
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.8	4	0.76
10237	Ethylbenzene	100-41-4	N.D.		0.8	4	0.76
10237	2-Hexanone	591-78-6	N.D.		2	8	0.76
10237	4-Methyl-2-pentanone	108-10-1	N.D.		2	8	0.76
10237	Methylene Chloride	75-09-2	N.D.		2	4	0.76
10237	Styrene	100-42-5	N.D.		0.8	4	0.76
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.8	4	0.76
10237	Tetrachloroethene	127-18-4	N.D.		0.8	4	0.76
10237	Toluene	108-88-3	N.D.		0.8	4	0.76
10237	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	4	0.76
10237	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	4	0.76
10237	Trichloroethene	79-01-6	15		0.8	4	0.76
10237	Vinyl Chloride	75-01-4	N.D.		0.8	4	0.76
10237	Xylene (Total)	1330-20-7	N.D.		0.8	4	0.76
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	N.D.		0.1	0.7	16.91
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	N.D.		4.00	12.0	1
02110	Kerosene	8008-20-6	N.D.		5.00	12.0	1
02110	10W-40 Motor Oil	n.a.	N.D.		10.0	30.0	1
02110	Total TPH	n.a.	N.D.		10.0	30.0	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	20.7		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-9-18'-20' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042738
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 11:55 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIEC9

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	A131251AA	05/06/2013 03:03	Andrea E Lando	0.76
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/25/2013 11:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/25/2013 11:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/25/2013 11:55	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/03/2013 19:14	Laura M Krieger	16.91
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/25/2013 11:55	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/09/2013 06:40	Heather E Williams	1
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-10-18'-20' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042739
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 15:10 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	52		6	17	0.83
10237	Benzene	71-43-2	0.6	J	0.4	4	0.83
10237	Bromodichloromethane	75-27-4	N.D.		0.8	4	0.83
10237	Bromoform	75-25-2	N.D.		0.8	4	0.83
10237	Bromomethane	74-83-9	N.D.		2	4	0.83
10237	2-Butanone	78-93-3	6	J	3	8	0.83
10237	Carbon Disulfide	75-15-0	N.D.		0.8	4	0.83
10237	Carbon Tetrachloride	56-23-5	N.D.		0.8	4	0.83
10237	Chlorobenzene	108-90-7	N.D.		0.8	4	0.83
10237	Chloroethane	75-00-3	N.D.		2	4	0.83
10237	Chloroform	67-66-3	N.D.		0.8	4	0.83
10237	Chloromethane	74-87-3	N.D.		2	4	0.83
10237	Dibromochloromethane	124-48-1	N.D.		0.8	4	0.83
10237	1,1-Dichloroethane	75-34-3	N.D.		0.8	4	0.83
10237	1,2-Dichloroethane	107-06-2	N.D.		0.8	4	0.83
10237	1,1-Dichloroethene	75-35-4	N.D.		0.8	4	0.83
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	4	0.83
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	4	0.83
10237	1,2-Dichloropropane	78-87-5	N.D.		0.8	4	0.83
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.8	4	0.83
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.8	4	0.83
10237	Ethylbenzene	100-41-4	N.D.		0.8	4	0.83
10237	2-Hexanone	591-78-6	N.D.		2	8	0.83
10237	4-Methyl-2-pentanone	108-10-1	N.D.		2	8	0.83
10237	Methylene Chloride	75-09-2	N.D.		2	4	0.83
10237	Styrene	100-42-5	N.D.		0.8	4	0.83
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.8	4	0.83
10237	Tetrachloroethene	127-18-4	N.D.		0.8	4	0.83
10237	Toluene	108-88-3	N.D.		0.8	4	0.83
10237	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	4	0.83
10237	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	4	0.83
10237	Trichloroethene	79-01-6	N.D.		0.8	4	0.83
10237	Vinyl Chloride	75-01-4	N.D.		0.8	4	0.83
10237	Xylene (Total)	1330-20-7	N.D.		0.8	4	0.83
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	N.D.		0.2	0.8	21.01
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	N.D.		4.00	12.0	1
02110	Kerosene	8008-20-6	N.D.		5.00	12.0	1
02110	10W-40 Motor Oil	n.a.	N.D.		10.0	30.0	1
02110	Total TPH	n.a.	N.D.		10.0	30.0	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	18.0		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-10-18'-20' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042739
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 15:10 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	A131251AA	05/06/2013 04:10	Andrea E Lando	0.83
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/25/2013 15:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/25/2013 15:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/25/2013 15:10	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/03/2013 19:50	Laura M Krieger	21.01
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/25/2013 15:10	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/09/2013 07:28	Heather E Williams	1
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-11-3'-5' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042740
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 14:00 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE11

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.		290	830	41.6
10237	Benzene	71-43-2	N.D.		21	210	41.6
10237	Bromodichloromethane	75-27-4	N.D.		42	210	41.6
10237	Bromoform	75-25-2	N.D.		42	210	41.6
10237	Bromomethane	74-83-9	N.D.		83	210	41.6
10237	2-Butanone	78-93-3	N.D.		170	420	41.6
10237	Carbon Disulfide	75-15-0	N.D.		42	210	41.6
10237	Carbon Tetrachloride	56-23-5	N.D.		42	210	41.6
10237	Chlorobenzene	108-90-7	N.D.		42	210	41.6
10237	Chloroethane	75-00-3	N.D.		83	210	41.6
10237	Chloroform	67-66-3	N.D.		42	210	41.6
10237	Chloromethane	74-87-3	N.D.		83	210	41.6
10237	Dibromochloromethane	124-48-1	N.D.		42	210	41.6
10237	1,1-Dichloroethane	75-34-3	N.D.		42	210	41.6
10237	1,2-Dichloroethane	107-06-2	N.D.		42	210	41.6
10237	1,1-Dichloroethene	75-35-4	N.D.		42	210	41.6
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		42	210	41.6
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		42	210	41.6
10237	1,2-Dichloropropane	78-87-5	N.D.		42	210	41.6
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		42	210	41.6
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		42	210	41.6
10237	Ethylbenzene	100-41-4	63	J	42	210	41.6
10237	2-Hexanone	591-78-6	9,500		120	420	41.6
10237	4-Methyl-2-pentanone	108-10-1	N.D.		120	420	41.6
10237	Methylene Chloride	75-09-2	N.D.		83	210	41.6
10237	Styrene	100-42-5	N.D.		42	210	41.6
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		42	210	41.6
10237	Tetrachloroethene	127-18-4	N.D.		42	210	41.6
10237	Toluene	108-88-3	N.D.		42	210	41.6
10237	1,1,1-Trichloroethane	71-55-6	N.D.		42	210	41.6
10237	1,1,2-Trichloroethane	79-00-5	N.D.		42	210	41.6
10237	Trichloroethene	79-01-6	N.D.		42	210	41.6
10237	Vinyl Chloride	75-01-4	N.D.		42	210	41.6
10237	Xylene (Total)	1330-20-7	64	J	42	210	41.6
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	290		18	92	2289.38
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	15,400		200	600	50
02110	Kerosene	8008-20-6	N.D.		15,000	15,000	50
02110	10W-40 Motor Oil	n.a.	N.D.		22,000	22,000	50
02110	Total TPH	n.a.	15,400		500	1,500	50
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	18.7		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-11-3'-5' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042740
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 14:00 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	R131231AA	05/03/2013 16:53	Lauren C Temple	41.6
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/25/2013 14:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/25/2013 14:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/25/2013 14:00	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/04/2013 03:03	Laura M Krieger	2289.38
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/25/2013 14:00	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/10/2013 19:33	Heather E Williams	50
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-12-14'-16' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042741
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 13:20 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.		6	16	0.8
10237	Benzene	71-43-2	0.7	J	0.4	4	0.8
10237	Bromodichloromethane	75-27-4	N.D.		0.8	4	0.8
10237	Bromoform	75-25-2	N.D.		0.8	4	0.8
10237	Bromomethane	74-83-9	N.D.		2	4	0.8
10237	2-Butanone	78-93-3	N.D.		3	8	0.8
10237	Carbon Disulfide	75-15-0	N.D.		0.8	4	0.8
10237	Carbon Tetrachloride	56-23-5	N.D.		0.8	4	0.8
10237	Chlorobenzene	108-90-7	N.D.		0.8	4	0.8
10237	Chloroethane	75-00-3	N.D.		2	4	0.8
10237	Chloroform	67-66-3	N.D.		0.8	4	0.8
10237	Chloromethane	74-87-3	N.D.		2	4	0.8
10237	Dibromochloromethane	124-48-1	N.D.		0.8	4	0.8
10237	1,1-Dichloroethane	75-34-3	N.D.		0.8	4	0.8
10237	1,2-Dichloroethane	107-06-2	N.D.		0.8	4	0.8
10237	1,1-Dichloroethene	75-35-4	N.D.		0.8	4	0.8
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	4	0.8
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	4	0.8
10237	1,2-Dichloropropane	78-87-5	N.D.		0.8	4	0.8
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.8	4	0.8
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.8	4	0.8
10237	Ethylbenzene	100-41-4	N.D.		0.8	4	0.8
10237	2-Hexanone	591-78-6	N.D.		2	8	0.8
10237	4-Methyl-2-pentanone	108-10-1	N.D.		2	8	0.8
10237	Methylene Chloride	75-09-2	N.D.		2	4	0.8
10237	Styrene	100-42-5	N.D.		0.8	4	0.8
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.8	4	0.8
10237	Tetrachloroethene	127-18-4	N.D.		0.8	4	0.8
10237	Toluene	108-88-3	N.D.		0.8	4	0.8
10237	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	4	0.8
10237	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	4	0.8
10237	Trichloroethene	79-01-6	N.D.		0.8	4	0.8
10237	Vinyl Chloride	75-01-4	N.D.		0.8	4	0.8
10237	Xylene (Total)	1330-20-7	N.D.		0.8	4	0.8
GC Volatiles	**OA-1 GRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	N.D.		0.2	0.8	19.08
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/kg**		**mg/kg**	**mg/kg**	
02110	Diesel/#2 Fuel	68334-30-5	N.D.		15.0	15.0	1
02110	Kerosene	8008-20-6	N.D.		15.0	15.0	1
02110	10W-40 Motor Oil	n.a.	N.D.		30.0	30.0	1
02110	Total TPH	n.a.	13.1	J	10.0	30.0	1
Wet Chemistry	**SM 2540 G-1997**		**%**		**%**	**%**	
00111	Moisture	n.a.	21.4		0.50	0.50	1

*=This limit was used in the evaluation of the final result

Sample Description: GP-12-14'-16' Soil Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042741
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/25/2013 13:20 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Wet Chemistry	**SM 2540 G-1997**		%	%	%	

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	8260 Ext. Soil Master w/GRO	SW-846 8260B	1	A131251AA	05/06/2013 04:33	Andrea E Lando	0.8
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201312230928	04/25/2013 13:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201312230928	04/25/2013 13:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201312230928	04/25/2013 13:20	Client Supplied	1
01637	TPH-GRO soil C6-C10	OA-1 GRO SW-846 8015B	1	13123A31A	05/03/2013 20:26	Laura M Krieger	19.08
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201312230928	04/25/2013 13:20	Client Supplied	n.a.
02110	TPH by OA-2 (Soils)	OA-2 DRO SW-846 8015B	1	131270009A	05/10/2013 16:20	Heather E Williams	1
11215	MO/IA Soils Extraction	SW-846 3550C	1	131270009A	05/07/2013 18:20	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	13127820002A	05/07/2013 21:12	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: GM-4-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042742
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 15:39 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE13

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	N.D.		0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.		1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	5	J	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	N.D.		1	5	1
10335	Vinyl Chloride	75-01-4	N.D.		1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.		0.050	0.10	1
02112	Kerosene	8008-20-6	N.D.		0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.		0.10	0.40	1
02112	Total TPH	n.a.	N.D.		0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: GM-4-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042742
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 15:39 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE13

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	T131231AA	05/03/2013 11:03	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131231AA	05/03/2013 11:03	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13123A53A	05/03/2013 21:54	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13123A53A	05/03/2013 21:54	Catherine J Schwarz	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131260025A	05/08/2013 20:14	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131260025A	05/07/2013 11:05	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Sample Description: GM-7-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042743
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 16:20 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.	0.050	0.10	1
02112	Kerosene	8008-20-6	N.D.	0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.	0.10	0.40	1
02112	Total TPH	n.a.	N.D.	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: GM-7-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042743
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 16:20 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE14

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	T131231AA	05/03/2013 15:00	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131231AA	05/03/2013 15:00	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13123A53A	05/03/2013 22:21	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13123A53A	05/03/2013 22:21	Catherine J Schwarz	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131260025A	05/08/2013 21:02	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131260025A	05/07/2013 11:05	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Sample Description: GM-13-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042744
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 13:46 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE15

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	N.D.		0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.		1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	N.D.		1	5	1
10335	Vinyl Chloride	75-01-4	N.D.		1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.		0.30	0.30	1
02112	Kerosene	8008-20-6	N.D.		0.30	0.30	1
02112	10W-40 Motor Oil	n.a.	0.37	J	0.10	0.40	1
02112	Total TPH	n.a.	0.27	J	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: GM-13-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042744
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 13:46 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE15

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	T131231AA	05/03/2013 15:24	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131231AA	05/03/2013 15:24	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13123A53A	05/03/2013 22:47	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13123A53A	05/03/2013 22:47	Catherine J Schwarz	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131260025A	05/08/2013 21:50	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131260025A	05/07/2013 11:05	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Sample Description: GM-15-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042745
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 14:39 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.	0.050	0.10	1
02112	Kerosene	8008-20-6	N.D.	0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.	0.10	0.40	1
02112	Total TPH	n.a.	N.D.	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: GM-15-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042745
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 14:39 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE16

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	T131231AA	05/03/2013 15:47	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131231AA	05/03/2013 15:47	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13123A53A	05/03/2013 23:14	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13123A53A	05/03/2013 23:14	Catherine J Schwarz	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131260025A	05/08/2013 22:38	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131260025A	05/07/2013 11:05	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-3-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042746
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 08:55 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.	0.050	0.10	1
02112	Kerosene	8008-20-6	N.D.	0.10	0.30	1
02112	10W-40 Motor Oil	n.a.	N.D.	0.10	0.40	1
02112	Total TPH	n.a.	N.D.	0.10	0.40	1

*=This limit was used in the evaluation of the final result

Sample Description: TW-3-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042746
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 08:55 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIE17

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	T131231AA	05/03/2013 16:11	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131231AA	05/03/2013 16:11	Linda C Pape	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13123A53A	05/03/2013 23:41	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13123A53A	05/03/2013 23:41	Catherine J Schwarz	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131260025A	05/08/2013 23:27	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131260025A	05/07/2013 11:05	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-F-1 Grab Concrete Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042747
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 10:20 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	4.72	0.327	1.98	1
06946	Barium	7440-39-3	106	0.0327	0.495	1
06949	Cadmium	7440-43-9	0.811	0.0327	0.495	1
06951	Chromium	7440-47-3	18.9	0.0871	1.49	1
06955	Lead	7439-92-1	16.8	0.465	1.49	1
06936	Selenium	7782-49-2	N.D.	0.713	1.98	1
06966	Silver	7440-22-4	N.D.	0.139	0.495	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	N.D.	0.0098	0.0984	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	N.D.	0.18	0.50	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	2.9	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06935	Arsenic	SW-846 6010B	1	131235708004	05/08/2013 00:15	John W Yanzuk II	1
06946	Barium	SW-846 6010B	1	131235708004	05/08/2013 00:15	John W Yanzuk II	1
06949	Cadmium	SW-846 6010B	1	131235708004	05/08/2013 00:15	John W Yanzuk II	1
06951	Chromium	SW-846 6010B	1	131235708004	05/08/2013 00:15	John W Yanzuk II	1
06955	Lead	SW-846 6010B	1	131235708004	05/08/2013 00:15	John W Yanzuk II	1
06936	Selenium	SW-846 6010B	1	131235708004	05/08/2013 00:15	John W Yanzuk II	1
06966	Silver	SW-846 6010B	1	131235708004	05/08/2013 00:15	John W Yanzuk II	1
00159	Mercury	SW-846 7471A	1	131265711001	05/07/2013 08:46	Damary Valentin	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131235708004	05/05/2013 21:17	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131265711001	05/07/2013 02:30	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13127102201A	05/07/2013 16:12	Venia B McFadden	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13127102201A	05/07/2013 12:15	Carolyn M Mastropietro	1
00111	Moisture	SM 2540 G-1997	1	13127820003A	05/07/2013 18:54	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-F-1 Grab Concrete Sample
Kuhlman Die Casting Site

LLI Sample # TL 7042748
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 10:20 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0107 J	0.0068	0.0200	1
07046	Barium	7440-39-3	0.183	0.00033	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.0229	0.0011	0.0150	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131275705002	05/09/2013 01:23	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	131275705002	05/09/2013 01:23	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	131275705002	05/09/2013 01:23	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	131275705002	05/09/2013 01:23	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	131275705002	05/09/2013 01:23	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131275705002	05/09/2013 01:23	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	131275705002	05/09/2013 01:23	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	131275713005	05/08/2013 10:16	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	131275705002	05/07/2013 23:50	Annamaria Stipkovits	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131275713005	05/07/2013 17:10	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	13126-482-0947A	05/06/2013 14:55	Darin P Wagner	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: BM-F-2 Grab Concrete Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042749
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 10:30 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	3.88	0.327	1.98	1
06946	Barium	7440-39-3	259	0.0327	0.495	1
06949	Cadmium	7440-43-9	0.736	0.0327	0.495	1
06951	Chromium	7440-47-3	23.7	0.0871	1.49	1
06955	Lead	7439-92-1	99.3	0.465	1.49	1
06936	Selenium	7782-49-2	N.D.	0.713	1.98	1
06966	Silver	7440-22-4	N.D.	0.139	0.495	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0185 J	0.0099	0.0990	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	N.D.	0.18	0.49	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	2.2	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06935	Arsenic	SW-846 6010B	1	131235708004	05/08/2013 00:19	John W Yanzuk II	1
06946	Barium	SW-846 6010B	1	131235708004	05/08/2013 00:19	John W Yanzuk II	1
06949	Cadmium	SW-846 6010B	1	131235708004	05/08/2013 00:19	John W Yanzuk II	1
06951	Chromium	SW-846 6010B	1	131235708004	05/08/2013 00:19	John W Yanzuk II	1
06955	Lead	SW-846 6010B	1	131235708004	05/08/2013 00:19	John W Yanzuk II	1
06936	Selenium	SW-846 6010B	1	131235708004	05/08/2013 00:19	John W Yanzuk II	1
06966	Silver	SW-846 6010B	1	131235708004	05/08/2013 00:19	John W Yanzuk II	1
00159	Mercury	SW-846 7471A	1	131265711001	05/07/2013 08:52	Damary Valentin	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131235708004	05/05/2013 21:17	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131265711001	05/07/2013 02:30	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13127102201A	05/07/2013 16:16	Venia B McFadden	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13127102201A	05/07/2013 12:15	Carolyn M Mastropietro	1
00111	Moisture	SM 2540 G-1997	1	13127820003A	05/07/2013 18:54	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-F-2 Grab Concrete Sample
Kuhlman Die Casting Site

LLI Sample # TL 7042750
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 10:30 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0087 J	0.0068	0.0200	1
07046	Barium	7440-39-3	0.189	0.00033	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.0173	0.0011	0.0150	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07036	Selenium	7782-49-2	0.0133 J	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131275705002	05/09/2013 01:31	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	131275705002	05/09/2013 01:31	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	131275705002	05/09/2013 01:31	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	131275705002	05/09/2013 01:31	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	131275705002	05/09/2013 01:31	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131275705002	05/09/2013 01:31	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	131275705002	05/09/2013 01:31	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	131275713005	05/08/2013 10:20	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	131275705002	05/07/2013 23:50	Annamaria Stipkovits	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131275713005	05/07/2013 17:10	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	13126-482-0947A	05/06/2013 14:55	Darin P Wagner	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: BM-W-1 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042751
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 10:38 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	3.34	0.327	1.98	1
06946	Barium	7440-39-3	3,200	0.327	4.95	10
06949	Cadmium	7440-43-9	1.82	0.0327	0.495	1
06951	Chromium	7440-47-3	106	0.0871	1.49	1
06955	Lead	7439-92-1	601	0.465	1.49	1
06936	Selenium	7782-49-2	N.D.	0.713	1.98	1
06966	Silver	7440-22-4	N.D.	0.139	0.495	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	5.87	0.197	1.97	20
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	N.D.	0.18	0.50	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	1.8	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06935	Arsenic	SW-846 6010B	1	131235708004	05/08/2013 00:24	John W Yanzuk II	1
06946	Barium	SW-846 6010B	1	131235708004	05/09/2013 01:38	John W Yanzuk II	10
06949	Cadmium	SW-846 6010B	1	131235708004	05/08/2013 00:24	John W Yanzuk II	1
06951	Chromium	SW-846 6010B	1	131235708004	05/08/2013 00:24	John W Yanzuk II	1
06955	Lead	SW-846 6010B	1	131235708004	05/08/2013 00:24	John W Yanzuk II	1
06936	Selenium	SW-846 6010B	1	131235708004	05/08/2013 00:24	John W Yanzuk II	1
06966	Silver	SW-846 6010B	1	131235708004	05/08/2013 00:24	John W Yanzuk II	1
00159	Mercury	SW-846 7471A	1	131265711001	05/07/2013 09:30	Damary Valentin	20
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131235708004	05/05/2013 21:17	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131265711001	05/07/2013 02:30	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13127102201A	05/07/2013 16:17	Venia B McFadden	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13127102201A	05/07/2013 12:15	Carolyn M Mastropietro	1
00111	Moisture	SM 2540 G-1997	1	13127820003A	05/07/2013 18:54	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-W-1 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # TL 7042752
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 10:38 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0159 J	0.0068	0.0200	1
07046	Barium	7440-39-3	0.178	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.0032 J	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.0172	0.0011	0.0150	1
07055	Lead	7439-92-1	0.128	0.0051	0.0150	1
07036	Selenium	7782-49-2	0.0136 J	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.000090 J	0.000070	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131275705002	05/09/2013 01:35	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	131275705002	05/09/2013 01:35	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	131275705002	05/09/2013 01:35	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	131275705002	05/09/2013 01:35	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	131275705002	05/09/2013 01:35	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131275705002	05/09/2013 01:35	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	131275705002	05/09/2013 01:35	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	131275713005	05/08/2013 10:23	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	131275705002	05/07/2013 23:50	Annamaria Stipkovits	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131275713005	05/07/2013 17:10	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	13126-482-0947A	05/06/2013 14:55	Darin P Wagner	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: BM-F-3 Grab Concrete Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042753
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 10:55 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	2.23	0.324	1.96	1
06946	Barium	7440-39-3	83.9	0.0324	0.490	1
06949	Cadmium	7440-43-9	0.139 J	0.0324	0.490	1
06951	Chromium	7440-47-3	358	0.0863	1.47	1
06955	Lead	7439-92-1	3.90	0.461	1.47	1
06936	Selenium	7782-49-2	N.D.	0.706	1.96	1
06966	Silver	7440-22-4	N.D.	0.137	0.490	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	N.D.	0.0097	0.0968	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	11.5	0.35	0.99	2
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	5.1	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06935	Arsenic	SW-846 6010B	1	131235708004	05/08/2013 00:28	John W Yanzuk II	1
06946	Barium	SW-846 6010B	1	131235708004	05/08/2013 00:28	John W Yanzuk II	1
06949	Cadmium	SW-846 6010B	1	131235708004	05/08/2013 00:28	John W Yanzuk II	1
06951	Chromium	SW-846 6010B	1	131235708004	05/08/2013 00:28	John W Yanzuk II	1
06955	Lead	SW-846 6010B	1	131235708004	05/08/2013 00:28	John W Yanzuk II	1
06936	Selenium	SW-846 6010B	1	131235708004	05/08/2013 00:28	John W Yanzuk II	1
06966	Silver	SW-846 6010B	1	131235708004	05/08/2013 00:28	John W Yanzuk II	1
00159	Mercury	SW-846 7471A	1	131265711001	05/07/2013 08:57	Damary Valentin	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131235708004	05/05/2013 21:17	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131265711001	05/07/2013 02:30	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13127102201A	05/07/2013 17:02	Venia B McFadden	2
05896	Cyanide Solid Distillation	SW-846 9012A	1	13127102201A	05/07/2013 12:15	Carolyn M Mastropietro	1
00111	Moisture	SM 2540 G-1997	1	13127820003A	05/07/2013 18:54	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-F-3 Grab Concrete Sample
Kuhlman Die Casting Site

LLI Sample # TL 7042754
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 10:55 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0101 J	0.0068	0.0200	1
07046	Barium	7440-39-3	0.0755	0.00033	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00036	0.0050	1
07051	Chromium	7440-47-3	4.96	0.0055	0.0750	5
	The chromium result was performed by the Method of Standard Addition.					
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07036	Selenium	7782-49-2	0.0093 J	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131275705002	05/09/2013 01:40	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	131275705002	05/09/2013 01:40	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	131275705002	05/09/2013 01:40	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	131275705002	05/09/2013 09:09	Joanne M Gates	5
07055	Lead	SW-846 6010B	1	131275705002	05/09/2013 01:40	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131275705002	05/09/2013 01:40	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	131275705002	05/09/2013 01:40	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	131275713005	05/08/2013 10:25	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	131275705002	05/07/2013 23:50	Annamaria Stipkovits	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131275713005	05/07/2013 17:10	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	13126-482-0947A	05/06/2013 14:55	Darin P Wagner	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: BM-W-2 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042755
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:05 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	3.03	0.330	2.00	1
06946	Barium	7440-39-3	433	0.0330	0.500	1
06949	Cadmium	7440-43-9	8.24	0.0330	0.500	1
06951	Chromium	7440-47-3	45.8	0.0880	1.50	1
06955	Lead	7439-92-1	503	0.470	1.50	1
06936	Selenium	7782-49-2	N.D.	0.720	2.00	1
06966	Silver	7440-22-4	N.D.	0.140	0.500	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.0909 J	0.0097	0.0968	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	0.46 J	0.17	0.48	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	1.5	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06935	Arsenic	SW-846 6010B	1	131235708004	05/08/2013 00:41	John W Yanzuk II	1
06946	Barium	SW-846 6010B	1	131235708004	05/08/2013 00:41	John W Yanzuk II	1
06949	Cadmium	SW-846 6010B	1	131235708004	05/08/2013 00:41	John W Yanzuk II	1
06951	Chromium	SW-846 6010B	1	131235708004	05/08/2013 00:41	John W Yanzuk II	1
06955	Lead	SW-846 6010B	1	131235708004	05/08/2013 00:41	John W Yanzuk II	1
06936	Selenium	SW-846 6010B	1	131235708004	05/08/2013 00:41	John W Yanzuk II	1
06966	Silver	SW-846 6010B	1	131235708004	05/08/2013 00:41	John W Yanzuk II	1
00159	Mercury	SW-846 7471A	1	131265711001	05/07/2013 08:59	Damary Valentin	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131235708004	05/05/2013 21:17	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131265711001	05/07/2013 02:30	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13127102201A	05/07/2013 17:01	Venia B McFadden	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13127102201A	05/07/2013 12:15	Carolyn M Mastropietro	1
00111	Moisture	SM 2540 G-1997	1	13127820003A	05/07/2013 18:54	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-W-2 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # TL 7042756
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:05 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0182 J	0.0068	0.0200	1
07046	Barium	7440-39-3	0.313	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.0115	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.0297	0.0011	0.0150	1
07055	Lead	7439-92-1	0.0504	0.0051	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131275705002	05/09/2013 01:44	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	131275705002	05/09/2013 01:44	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	131275705002	05/09/2013 01:44	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	131275705002	05/09/2013 01:44	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	131275705002	05/09/2013 01:44	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131275705002	05/09/2013 01:44	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	131275705002	05/09/2013 01:44	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	131275713005	05/08/2013 10:27	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	131275705002	05/07/2013 23:50	Annamaria Stipkovits	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131275713005	05/07/2013 17:10	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	13126-482-0947A	05/06/2013 14:55	Darin P Wagner	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: BM-F-4 Grab Concrete Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042757
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:20 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	2.05	0.324	1.96	1
06946	Barium	7440-39-3	82.7	0.0324	0.490	1
06949	Cadmium	7440-43-9	0.0971 J	0.0324	0.490	1
06951	Chromium	7440-47-3	11.2	0.0863	1.47	1
06955	Lead	7439-92-1	1.90	0.461	1.47	1
06936	Selenium	7782-49-2	N.D.	0.706	1.96	1
06966	Silver	7440-22-4	N.D.	0.137	0.490	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	N.D.	0.0099	0.0985	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	N.D.	0.18	0.51	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	3.2	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06935	Arsenic	SW-846 6010B	1	131235708004	05/08/2013 00:46	John W Yanzuk II	1
06946	Barium	SW-846 6010B	1	131235708004	05/08/2013 00:46	John W Yanzuk II	1
06949	Cadmium	SW-846 6010B	1	131235708004	05/08/2013 00:46	John W Yanzuk II	1
06951	Chromium	SW-846 6010B	1	131235708004	05/08/2013 00:46	John W Yanzuk II	1
06955	Lead	SW-846 6010B	1	131235708004	05/08/2013 00:46	John W Yanzuk II	1
06936	Selenium	SW-846 6010B	1	131235708004	05/08/2013 00:46	John W Yanzuk II	1
06966	Silver	SW-846 6010B	1	131235708004	05/08/2013 00:46	John W Yanzuk II	1
00159	Mercury	SW-846 7471A	1	131265711001	05/07/2013 09:01	Damary Valentin	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131235708004	05/05/2013 21:17	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131265711001	05/07/2013 02:30	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13127102201A	05/07/2013 16:20	Venia B McFadden	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13127102201A	05/07/2013 12:15	Carolyn M Mastropietro	1
00111	Moisture	SM 2540 G-1997	1	13127820003A	05/07/2013 18:54	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-F-4 Grab Concrete Sample
Kuhlman Die Casting Site

LLI Sample # TL 7042758
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:20 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	N.D.	0.0068	0.0200	1
07046	Barium	7440-39-3	0.373	0.00033	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.0207	0.0011	0.0150	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07036	Selenium	7782-49-2	0.0113 J	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131275705002	05/09/2013 01:48	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	131275705002	05/09/2013 01:48	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	131275705002	05/09/2013 01:48	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	131275705002	05/09/2013 01:48	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	131275705002	05/09/2013 01:48	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131275705002	05/09/2013 01:48	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	131275705002	05/09/2013 01:48	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	131275713005	05/08/2013 10:29	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	131275705002	05/07/2013 23:50	Annamaria Stipkovits	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131275713005	05/07/2013 17:10	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	13126-482-0947A	05/06/2013 14:55	Darin P Wagner	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: BM-Debris-1 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042759
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:38 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	3.99	0.320	1.94	1
06946	Barium	7440-39-3	82.1	0.0320	0.485	1
06949	Cadmium	7440-43-9	1.30	0.0320	0.485	1
06951	Chromium	7440-47-3	19.6	0.0854	1.46	1
06955	Lead	7439-92-1	15.2	0.456	1.46	1
06936	Selenium	7782-49-2	0.811 J	0.699	1.94	1
06966	Silver	7440-22-4	N.D.	0.136	0.485	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	N.D.	0.0096	0.0959	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	N.D.	0.18	0.50	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	2.6	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06935	Arsenic	SW-846 6010B	1	131235708004	05/08/2013 00:51	John W Yanzuk II	1
06946	Barium	SW-846 6010B	1	131235708004	05/08/2013 00:51	John W Yanzuk II	1
06949	Cadmium	SW-846 6010B	1	131235708004	05/08/2013 00:51	John W Yanzuk II	1
06951	Chromium	SW-846 6010B	1	131235708004	05/08/2013 00:51	John W Yanzuk II	1
06955	Lead	SW-846 6010B	1	131235708004	05/08/2013 00:51	John W Yanzuk II	1
06936	Selenium	SW-846 6010B	1	131235708004	05/08/2013 00:51	John W Yanzuk II	1
06966	Silver	SW-846 6010B	1	131235708004	05/08/2013 00:51	John W Yanzuk II	1
00159	Mercury	SW-846 7471A	1	131265711001	05/07/2013 09:03	Damary Valentin	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131235708004	05/05/2013 21:17	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131265711001	05/07/2013 02:30	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13127102201A	05/07/2013 16:24	Venia B McFadden	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13127102201A	05/07/2013 12:15	Carolyn M Mastropietro	1
00111	Moisture	SM 2540 G-1997	1	13127820003A	05/07/2013 18:54	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-Debris-1 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # TL 7042760
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:38 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0158 J	0.0068	0.0200	1
07046	Barium	7440-39-3	0.276	0.00033	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.0049 J	0.0011	0.0150	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131275705002	05/09/2013 01:52	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	131275705002	05/09/2013 01:52	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	131275705002	05/09/2013 01:52	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	131275705002	05/09/2013 01:52	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	131275705002	05/09/2013 01:52	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131275705002	05/09/2013 01:52	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	131275705002	05/09/2013 01:52	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	131275713005	05/08/2013 10:35	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	131275705002	05/07/2013 23:50	Annamaria Stipkovits	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131275713005	05/07/2013 17:10	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	13126-482-0947A	05/06/2013 14:55	Darin P Wagner	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: BM-WWTP-1 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042761
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:40 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	11.4	0.317	1.92	1
06946	Barium	7440-39-3	51.8	0.0317	0.481	1
06949	Cadmium	7440-43-9	0.296 J	0.0317	0.481	1
06951	Chromium	7440-47-3	92.8	0.0846	1.44	1
06955	Lead	7439-92-1	3.98	0.452	1.44	1
06936	Selenium	7782-49-2	N.D.	0.692	1.92	1
06966	Silver	7440-22-4	N.D.	0.135	0.481	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	N.D.	0.0095	0.0952	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	6.6	0.18	0.49	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	4.7	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06935	Arsenic	SW-846 6010B	1	131235708004	05/08/2013 00:55	John W Yanzuk II	1
06946	Barium	SW-846 6010B	1	131235708004	05/08/2013 00:55	John W Yanzuk II	1
06949	Cadmium	SW-846 6010B	1	131235708004	05/08/2013 00:55	John W Yanzuk II	1
06951	Chromium	SW-846 6010B	1	131235708004	05/08/2013 00:55	John W Yanzuk II	1
06955	Lead	SW-846 6010B	1	131235708004	05/08/2013 00:55	John W Yanzuk II	1
06936	Selenium	SW-846 6010B	1	131235708004	05/08/2013 00:55	John W Yanzuk II	1
06966	Silver	SW-846 6010B	1	131235708004	05/08/2013 00:55	John W Yanzuk II	1
00159	Mercury	SW-846 7471A	1	131265711001	05/07/2013 09:05	Damary Valentin	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131235708004	05/05/2013 21:17	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131265711001	05/07/2013 02:30	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13127102201A	05/07/2013 16:25	Venia B McFadden	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13127102201A	05/07/2013 12:15	Carolyn M Mastropietro	1
00111	Moisture	SM 2540 G-1997	1	13127820003A	05/07/2013 18:54	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-WWTP-1 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # TL 7042762
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:40 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0092 J	0.0068	0.0200	1
07046	Barium	7440-39-3	0.174	0.00033	0.0050	1
07049	Cadmium	7440-43-9	N.D.	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.0106 J	0.0011	0.0150	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131275705002	05/09/2013 01:57	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	131275705002	05/09/2013 01:57	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	131275705002	05/09/2013 01:57	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	131275705002	05/09/2013 01:57	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	131275705002	05/09/2013 01:57	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131275705002	05/09/2013 01:57	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	131275705002	05/09/2013 01:57	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	131275713005	05/08/2013 10:37	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	131275705002	05/07/2013 23:50	Annamaria Stipkovits	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131275713005	05/07/2013 17:10	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	13126-482-0947A	05/06/2013 14:55	Darin P Wagner	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: BM-W-3 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042763
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:43 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	2.74	0.324	1.96	1
06946	Barium	7440-39-3	576	0.162	2.45	5
06949	Cadmium	7440-43-9	4.52	0.0324	0.490	1
06951	Chromium	7440-47-3	16.7	0.0863	1.47	1
06955	Lead	7439-92-1	195	0.461	1.47	1
06936	Selenium	7782-49-2	N.D.	0.706	1.96	1
06966	Silver	7440-22-4	N.D.	0.137	0.490	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.185	0.0096	0.0956	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	N.D.	0.16	0.45	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	4.2	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06935	Arsenic	SW-846 6010B	1	131235708004	05/08/2013 01:00	John W Yanzuk II	1
06946	Barium	SW-846 6010B	1	131235708004	05/09/2013 01:46	John W Yanzuk II	5
06949	Cadmium	SW-846 6010B	1	131235708004	05/08/2013 01:00	John W Yanzuk II	1
06951	Chromium	SW-846 6010B	1	131235708004	05/08/2013 01:00	John W Yanzuk II	1
06955	Lead	SW-846 6010B	1	131235708004	05/08/2013 01:00	John W Yanzuk II	1
06936	Selenium	SW-846 6010B	1	131235708004	05/08/2013 01:00	John W Yanzuk II	1
06966	Silver	SW-846 6010B	1	131235708004	05/08/2013 01:00	John W Yanzuk II	1
00159	Mercury	SW-846 7471A	1	131265711001	05/07/2013 09:07	Damary Valentin	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131235708004	05/05/2013 21:17	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131265711001	05/07/2013 02:30	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13127102201A	05/07/2013 17:06	Venia B McFadden	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13127102201A	05/07/2013 12:15	Carolyn M Mastropietro	1
00111	Moisture	SM 2540 G-1997	1	13127820003A	05/07/2013 18:54	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-W-3 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # TL 7042764
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:43 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0117 J	0.0068	0.0200	1
07046	Barium	7440-39-3	0.283	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.0152	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.0027 J	0.0011	0.0150	1
07055	Lead	7439-92-1	N.D.	0.0051	0.0150	1
07036	Selenium	7782-49-2	0.0108 J	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131275705002	05/09/2013 02:01	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	131275705002	05/09/2013 02:01	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	131275705002	05/09/2013 02:01	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	131275705002	05/09/2013 02:01	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	131275705002	05/09/2013 02:01	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131275705002	05/09/2013 02:01	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	131275705002	05/09/2013 02:01	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	131275713005	05/08/2013 10:39	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	131275705002	05/07/2013 23:50	Annamaria Stipkovits	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131275713005	05/07/2013 17:10	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	13126-482-0947A	05/06/2013 14:55	Darin P Wagner	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: BM-W-4 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # SW 7042765
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:55 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	3.10	0.324	1.96	1
06946	Barium	7440-39-3	153	0.0324	0.490	1
06949	Cadmium	7440-43-9	9.30	0.0324	0.490	1
06951	Chromium	7440-47-3	8.60	0.0863	1.47	1
06955	Lead	7439-92-1	329	0.461	1.47	1
06936	Selenium	7782-49-2	N.D.	0.706	1.96	1
06966	Silver	7440-22-4	N.D.	0.137	0.490	1
	SW-846 7471A		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	0.133	0.0096	0.0956	1
Wet Chemistry	**SW-846 9012A**		**mg/kg**	**mg/kg**	**mg/kg**	
05895	Total Cyanide (solid)	57-12-5	N.D.	0.16	0.45	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	1.5	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06935	Arsenic	SW-846 6010B	1	131235708004	05/08/2013 01:04	John W Yanzuk II	1
06946	Barium	SW-846 6010B	1	131235708004	05/08/2013 01:04	John W Yanzuk II	1
06949	Cadmium	SW-846 6010B	1	131235708004	05/08/2013 01:04	John W Yanzuk II	1
06951	Chromium	SW-846 6010B	1	131235708004	05/08/2013 01:04	John W Yanzuk II	1
06955	Lead	SW-846 6010B	1	131235708004	05/08/2013 01:04	John W Yanzuk II	1
06936	Selenium	SW-846 6010B	1	131235708004	05/08/2013 01:04	John W Yanzuk II	1
06966	Silver	SW-846 6010B	1	131235708004	05/08/2013 01:04	John W Yanzuk II	1
00159	Mercury	SW-846 7471A	1	131265711001	05/07/2013 09:09	Damary Valentin	1
05708	SW SW846 ICP/ICP MS Digest	SW-846 3050B	1	131235708004	05/05/2013 21:17	Annamaria Stipkovits	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	131265711001	05/07/2013 02:30	Annamaria Stipkovits	1
05895	Total Cyanide (solid)	SW-846 9012A	1	13127102201A	05/07/2013 16:27	Venia B McFadden	1
05896	Cyanide Solid Distillation	SW-846 9012A	1	13127102201A	05/07/2013 12:15	Carolyn M Mastropietro	1
00111	Moisture	SM 2540 G-1997	1	13127820003A	05/07/2013 18:54	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Sample Description: BM-W-4 Composite Concrete Sample
Kuhlman Die Casting Site

LLI Sample # TL 7042766
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/23/2013 11:55 by KM

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0127 J	0.0068	0.0200	1
07046	Barium	7440-39-3	0.306	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.0202	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.0193	0.0011	0.0150	1
07055	Lead	7439-92-1	0.156	0.0051	0.0150	1
07036	Selenium	7782-49-2	0.0077 J	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131275705002	05/09/2013 02:13	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	131275705002	05/09/2013 02:13	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	131275705002	05/09/2013 02:13	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	131275705002	05/09/2013 02:13	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	131275705002	05/09/2013 02:13	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131275705002	05/09/2013 02:13	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	131275705002	05/09/2013 02:13	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	131275713005	05/08/2013 10:41	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	131275705002	05/07/2013 23:50	Annamaria Stipkovits	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131275713005	05/07/2013 17:10	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	13126-482-0947A	05/06/2013 14:55	Darin P Wagner	n.a.

*=This limit was used in the evaluation of the final result

Sample Description: Trip Blank Water Sample
Kuhlman Die Casting Site

LLI Sample # WW 7042767
LLI Group # 1387153
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 04/30/2013 12:47

Submitted: 05/02/2013 09:10
Reported: 05/14/2013 17:32

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

DIETB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	T131231AA	05/03/2013 09:28	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131231AA	05/03/2013 09:28	Linda C Pape	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1387153
Reported: 05/14/13 at 05:32 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: A131251AA	Sample number(s): 7042730,7042734,7042738-7042739,7042741								
Acetone	N.D.	7.	20	ug/kg	72	81	18-197	12	30
Benzene	N.D.	0.5	5	ug/kg	91	90	80-120	0	30
Bromodichloromethane	N.D.	1.	5	ug/kg	79	80	75-114	1	30
Bromoform	N.D.	1.	5	ug/kg	74	75	70-120	1	30
Bromomethane	N.D.	2.	5	ug/kg	84	83	32-162	1	30
2-Butanone	N.D.	4.	10	ug/kg	61	65	38-146	6	30
Carbon Disulfide	N.D.	1.	5	ug/kg	85	85	59-129	1	30
Carbon Tetrachloride	N.D.	1.	5	ug/kg	86	86	69-122	0	30
Chlorobenzene	N.D.	1.	5	ug/kg	98	98	80-120	0	30
Chloroethane	N.D.	2.	5	ug/kg	81	81	37-154	0	30
Chloroform	N.D.	1.	5	ug/kg	88	88	80-120	0	30
Chloromethane	N.D.	2.	5	ug/kg	72	73	56-120	1	30
Dibromochloromethane	N.D.	1.	5	ug/kg	83	83	77-120	0	30
1,1-Dichloroethane	N.D.	1.	5	ug/kg	88	87	80-120	1	30
1,2-Dichloroethane	N.D.	1.	5	ug/kg	83	82	72-126	1	30
1,1-Dichloroethene	N.D.	1.	5	ug/kg	93	92	73-129	1	30
cis-1,2-Dichloroethene	N.D.	1.	5	ug/kg	90	90	80-120	0	30
trans-1,2-Dichloroethene	N.D.	1.	5	ug/kg	91	91	79-120	0	30
1,2-Dichloropropane	N.D.	1.	5	ug/kg	89	88	77-120	1	30
cis-1,3-Dichloropropene	N.D.	1.	5	ug/kg	85	85	74-120	1	30
trans-1,3-Dichloropropene	N.D.	1.	5	ug/kg	80	81	77-120	2	30
Ethylbenzene	N.D.	1.	5	ug/kg	96	96	80-120	0	30
2-Hexanone	N.D.	3.	10	ug/kg	44	45	40-129	3	30
4-Methyl-2-pentanone	N.D.	3.	10	ug/kg	57	59	52-125	3	30
Methylene Chloride	N.D.	2.	5	ug/kg	93	92	76-124	1	30
Styrene	N.D.	1.	5	ug/kg	92	91	76-120	1	30
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/kg	78	80	71-123	2	30
Tetrachloroethene	N.D.	1.	5	ug/kg	99	100	78-126	1	30
Toluene	N.D.	1.	5	ug/kg	97	96	80-120	1	30
1,1,1-Trichloroethane	N.D.	1.	5	ug/kg	87	86	71-125	0	30
1,1,2-Trichloroethane	N.D.	1.	5	ug/kg	88	88	80-120	1	30
Trichloroethene	N.D.	1.	5	ug/kg	90	90	80-120	0	30
Vinyl Chloride	N.D.	1.	5	ug/kg	80	79	53-120	1	30
Xylene (Total)	N.D.	1.	5	ug/kg	96	96	80-120	0	30
Batch number: R131231AA	Sample number(s): 7042731-7042733,7042735-7042737,7042740								
Acetone	N.D.	350.	1,000	ug/kg	87	86	18-197	1	30
Benzene	N.D.	25.	250	ug/kg	93	93	80-120	0	30
Bromodichloromethane	N.D.	50.	250	ug/kg	90	92	75-114	2	30
Bromoform	N.D.	50.	250	ug/kg	102	102	70-120	0	30
Bromomethane	N.D.	100.	250	ug/kg	75	77	32-162	3	30
2-Butanone	N.D.	200.	500	ug/kg	92	92	38-146	0	30
Carbon Disulfide	N.D.	50.	250	ug/kg	89	91	59-129	2	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1387153
Reported: 05/14/13 at 05:32 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Carbon Tetrachloride	N.D.	50.	250	ug/kg	88	90	69-122	2	30
Chlorobenzene	N.D.	50.	250	ug/kg	97	97	80-120	1	30
Chloroethane	N.D.	100.	250	ug/kg	77	80	37-154	3	30
Chloroform	N.D.	50.	250	ug/kg	94	93	80-120	1	30
Chloromethane	N.D.	100.	250	ug/kg	74	77	56-120	3	30
Dibromochloromethane	N.D.	50.	250	ug/kg	99	98	77-120	1	30
1,1-Dichloroethane	N.D.	50.	250	ug/kg	96	95	80-120	1	30
1,2-Dichloroethane	N.D.	50.	250	ug/kg	95	95	72-126	0	30
1,1-Dichloroethene	N.D.	50.	250	ug/kg	94	96	73-129	2	30
cis-1,2-Dichloroethene	N.D.	50.	250	ug/kg	94	95	80-120	1	30
trans-1,2-Dichloroethene	N.D.	50.	250	ug/kg	93	95	79-120	2	30
1,2-Dichloropropane	N.D.	50.	250	ug/kg	97	99	77-120	2	30
cis-1,3-Dichloropropene	N.D.	50.	250	ug/kg	98	100	74-120	2	30
trans-1,3-Dichloropropene	N.D.	50.	250	ug/kg	92	96	77-120	4	30
Ethylbenzene	N.D.	50.	250	ug/kg	92	93	80-120	1	30
2-Hexanone	N.D.	150.	500	ug/kg	102	99	40-129	3	30
4-Methyl-2-pentanone	N.D.	150.	500	ug/kg	95	96	52-125	1	30
Methylene Chloride	N.D.	100.	250	ug/kg	99	100	76-124	2	30
Styrene	N.D.	50.	250	ug/kg	96	97	76-120	1	30
1,1,2,2-Tetrachloroethane	N.D.	50.	250	ug/kg	109	108	71-123	1	30
Tetrachloroethene	N.D.	50.	250	ug/kg	91	92	78-126	0	30
Toluene	N.D.	50.	250	ug/kg	91	96	80-120	5	30
1,1,1-Trichloroethane	N.D.	50.	250	ug/kg	91	93	71-125	1	30
1,1,2-Trichloroethane	N.D.	50.	250	ug/kg	99	101	80-120	2	30
Trichloroethene	N.D.	50.	250	ug/kg	92	93	80-120	1	30
Vinyl Chloride	N.D.	50.	250	ug/kg	77	76	53-120	1	30
Xylene (Total)	N.D.	50.	250	ug/kg	91	93	80-120	2	30

Batch number: T131231AA	Sample number(s): 7042742-7042746,7042767						
Acetone	N.D.	6.	20	ug/l	109		35-181
Benzene	N.D.	0.5	5	ug/l	103		77-121
Bromodichloromethane	N.D.	1.	5	ug/l	95		73-120
Bromoform	N.D.	1.	5	ug/l	96		61-120
Bromomethane	N.D.	1.	5	ug/l	89		51-120
2-Butanone	N.D.	3.	10	ug/l	97		57-141
Carbon Disulfide	N.D.	1.	5	ug/l	89		68-121
Carbon Tetrachloride	N.D.	1.	5	ug/l	113		65-137
Chlorobenzene	N.D.	0.8	5	ug/l	103		80-120
Chloroethane	N.D.	1.	5	ug/l	80		60-120
Chloroform	N.D.	0.8	5	ug/l	103		77-122
Chloromethane	N.D.	1.	5	ug/l	87		54-123
Dibromochloromethane	N.D.	1.	5	ug/l	101		72-120
1,1-Dichloroethane	N.D.	1.	5	ug/l	104		79-120
1,2-Dichloroethane	N.D.	1.	5	ug/l	102		64-130
1,1-Dichloroethene	N.D.	0.8	5	ug/l	101		76-124
cis-1,2-Dichloroethene	N.D.	0.8	5	ug/l	105		80-120
trans-1,2-Dichloroethene	N.D.	0.8	5	ug/l	106		80-120
1,2-Dichloropropane	N.D.	1.	5	ug/l	104		80-120
cis-1,3-Dichloropropene	N.D.	1.	5	ug/l	103		78-120
trans-1,3-Dichloropropene	N.D.	1.	5	ug/l	96		66-124
Ethylbenzene	N.D.	0.8	5	ug/l	99		79-120
2-Hexanone	N.D.	3.	10	ug/l	69		59-125
4-Methyl-2-pentanone	N.D.	3.	10	ug/l	74		65-122
Methylene Chloride	N.D.	2.	5	ug/l	102		84-118
Styrene	N.D.	1.	5	ug/l	101		77-120
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/l	103		70-129

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1387153
Reported: 05/14/13 at 05:32 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Tetrachloroethene	N.D.	0.8	5	ug/l	102		79-120		
Toluene	N.D.	0.7	5	ug/l	105		79-120		
1,1,1-Trichloroethane	N.D.	0.8	5	ug/l	108		66-126		
1,1,2-Trichloroethane	N.D.	0.8	5	ug/l	105		80-120		
Trichloroethene	N.D.	1.	5	ug/l	102		80-120		
Vinyl Chloride	N.D.	1.	5	ug/l	87		63-120		
Xylene (Total)	N.D.	0.8	5	ug/l	102		77-120		
Batch number: 13123A31A	Sample number(s): 7042730-7042741								
TPH-GRO soil C6-C10	N.D.	0.2	1.0	mg/kg	86	88	67-119	3	30
Batch number: 13123A53A	Sample number(s): 7042742-7042746								
TPH-GRO water C6-C10	N.D.	20.	50	ug/l	106	101	75-135	5	30
Batch number: 131260025A	Sample number(s): 7042742-7042746								
Diesel/#2 Fuel	N.D.	0.050	0.10	mg/l	77	80	63-122	3	20
Kerosene	N.D.	0.10	0.30	mg/l					
10W-40 Motor Oil	N.D.	0.10	0.40	mg/l					
Total TPH	N.D.	0.10	0.40	mg/l					
Batch number: 131270009A	Sample number(s): 7042730-7042741								
Diesel/#2 Fuel	N.D.	4.00	12.0	mg/kg	84	87	64-122	3	20
Kerosene	N.D.	5.00	12.0	mg/kg					
10W-40 Motor Oil	N.D.	10.0	30.0	mg/kg					
Total TPH	N.D.	10.0	30.0	mg/kg					
Batch number: 131235708004	Sample number(s): 7042747,7042749,7042751,7042753,7042755,7042757,7042759,7042761,7042763,7042765								
Arsenic	N.D.	0.330	2.00	mg/kg	105		80-120		
Barium	N.D.	0.0330	0.500	mg/kg	106		80-120		
Cadmium	N.D.	0.0330	0.500	mg/kg	104		80-120		
Chromium	N.D.	0.0880	1.50	mg/kg	105		80-120		
Lead	N.D.	0.470	1.50	mg/kg	109		80-120		
Selenium	N.D.	0.720	2.00	mg/kg	104		80-120		
Silver	N.D.	0.140	0.500	mg/kg	103		80-120		
Batch number: 131265711001	Sample number(s): 7042747,7042749,7042751,7042753,7042755,7042757,7042759,7042761,7042763,7042765								
Mercury	N.D.	0.0100	0.100	mg/kg	104		80-120		
Batch number: 131275705002	Sample number(s): 7042748,7042750,7042752,7042754,7042756,7042758,7042760,7042762,7042764,7042766								
Arsenic	N.D.	0.0068	0.0200	mg/l	114		80-120		
Barium	0.00064 J	0.00033	0.0050	mg/l	98		80-120		
Cadmium	N.D.	0.00036	0.0050	mg/l	101		80-120		
Chromium	N.D.	0.0011	0.0150	mg/l	102		80-120		
Lead	N.D.	0.0051	0.0150	mg/l	97		80-120		
Selenium	N.D.	0.0075	0.0200	mg/l	117		80-120		
Silver	N.D.	0.0012	0.0050	mg/l	114		80-120		
Batch number: 131275713005	Sample number(s): 7042748,7042750,7042752,7042754,7042756,7042758,7042760,7042762,7042764,7042766								

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1387153
Reported: 05/14/13 at 05:32 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Mercury	N.D.	0.00007 0	0.00020	mg/l	98		80-120		
Batch number: 13127102201A	Sample number(s): 7042747,7042749,7042751,7042753,7042755,7042757,7042759,7042761,7042763,7042765								
Total Cyanide (solid)	N.D.	0.18	0.50	mg/kg	97		90-110		
Batch number: 13127820002A	Sample number(s): 7042730-7042741								
Moisture					100		99-101		
Batch number: 13127820003A	Sample number(s): 7042747,7042749,7042751,7042753,7042755,7042757,7042759,7042761,7042763,7042765								
Moisture					100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: A131251AA	Sample number(s): 7042730,7042734,7042738-7042739,7042741 UNSPK: P045445								
Acetone	71		31-195						
Benzene	88		55-143						
Bromodichloromethane	79		53-136						
Bromoform	77		38-124						
Bromomethane	82		42-168						
2-Butanone	75		37-163						
Carbon Disulfide	87		48-146						
Carbon Tetrachloride	89		45-153						
Chlorobenzene	87		49-135						
Chloroethane	82		39-152						
Chloroform	88		61-142						
Chloromethane	79		36-143						
Dibromochloromethane	85		51-128						
1,1-Dichloroethane	88		63-142						
1,2-Dichloroethane	86		49-150						
1,1-Dichloroethene	97		61-149						
cis-1,2-Dichloroethene	90		49-153						
trans-1,2-Dichloroethene	92		51-153						
1,2-Dichloropropane	88		48-145						
cis-1,3-Dichloropropene	82		35-151						
trans-1,3-Dichloropropene	81		30-149						
Ethylbenzene	82		44-141						
2-Hexanone	57		32-160						
4-Methyl-2-pentanone	76		46-139						
Methylene Chloride	95		49-160						
Styrene	77		35-134						
1,1,2,2-Tetrachloroethane	93		40-152						
Tetrachloroethene	90		42-149						
Toluene	90		50-146						

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1387153
Reported: 05/14/13 at 05:32 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1,1-Trichloroethane	88		43-150						
1,1,2-Trichloroethane	93		47-161						
Trichloroethene	86		53-144						
Vinyl Chloride	89		50-154						
Xylene (Total)	81		44-136						
Batch number: T131231AA	Sample number(s): 7042742-7042746,7042767 UNSPK: 7042742								
Acetone	86	102	33-159	17	30				
Benzene	111	111	72-134	0	30				
Bromodichloromethane	104	102	78-125	2	30				
Bromoform	98	101	48-118	4	30				
Bromomethane	103	101	47-129	2	30				
2-Butanone	89	93	57-138	5	30				
Carbon Disulfide	103	101	67-135	2	30				
Carbon Tetrachloride	129	127	72-135	1	30				
Chlorobenzene	109	110	87-124	1	30				
Chloroethane	91	88	51-145	3	30				
Chloroform	112	111	81-134	1	30				
Chloromethane	96	96	46-137	1	30				
Dibromochloromethane	101	100	74-116	1	30				
1,1-Dichloroethane	114	112	84-129	2	30				
1,2-Dichloroethane	107	105	68-131	2	30				
1,1-Dichloroethene	113	112	75-155	1	30				
cis-1,2-Dichloroethene	118	115	80-141	3	30				
trans-1,2-Dichloroethene	118	119	81-142	1	30				
1,2-Dichloropropane	110	112	83-124	1	30				
cis-1,3-Dichloropropene	110	110	70-116	1	30				
trans-1,3-Dichloropropene	97	99	74-119	3	30				
Ethylbenzene	107	110	71-134	3	30				
2-Hexanone	67	70	55-127	5	30				
4-Methyl-2-pentanone	76	77	63-123	2	30				
Methylene Chloride	116	110	78-133	5	30				
Styrene	108	111	78-125	3	30				
1,1,2,2-Tetrachloroethane	107	104	72-128	3	30				
Tetrachloroethene	111	116	80-128	4	30				
Toluene	110	114	80-125	3	30				
1,1,1-Trichloroethane	126	122	69-140	3	30				
1,1,2-Trichloroethane	107	110	71-141	3	30				
Trichloroethene	114	114	88-133	0	30				
Vinyl Chloride	99	96	66-133	3	30				
Xylene (Total)	108	112	79-125	4	30				
Batch number: 131235708004	Sample number(s): 7042747,7042749,7042751,7042753,7042755,7042757,7042759,7042761,7042763,7042765 UNSPK: P041087 BKG: P041087								
Arsenic	108	99	75-125	8	20	1.81 J	1.13 J	46* (1)	20
Barium	112	105	75-125	5	20	31.4	31.6	1	20
Cadmium	100	98	75-125	2	20	0.642	0.521	21* (1)	20
Chromium	131*	122	75-125	5	20	14.9	13.1	13	20
Lead	158 (2)	-25 (2)	75-125	9	20	292	281	4	20
Selenium	97	97	75-125	1	20	N.D.	N.D.	0 (1)	20
Silver	79	88	75-125	11	20	N.D.	N.D.	0 (1)	20

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Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1387153
Reported: 05/14/13 at 05:32 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 131265711001	Sample number(s): 7042747,7042749,7042751,7042753,7042755,7042757,7042759,7042761,7042763,7042765 UNSPK: P045258 BKG: P045258								
Mercury	109	110	80-120	3	20	0.0830 J	0.0787 J	5 (1)	20
Batch number: 131275705002	Sample number(s): 7042748,7042750,7042752,7042754,7042756,7042758,7042760,7042762,7042764,7042766 UNSPK: P044947 BKG: P044947								
Arsenic	100	100	75-125	0	20	N.D.	N.D.	0 (1)	20
Barium	86	88	75-125	2	20	0.0666	0.0672	1	20
Cadmium	89	88	75-125	1	20	0.0010 J	0.00086 J	15 (1)	20
Chromium	91	91	75-125	0	20	0.0015 J	0.0019 J	27* (1)	20
Lead	86	86	75-125	1	20	0.0101 J	0.0138 J	31* (1)	20
Selenium	105	105	75-125	0	20	N.D.	N.D.	0 (1)	20
Silver	99	99	75-125	1	20	N.D.	N.D.	0 (1)	20
Batch number: 131275713005	Sample number(s): 7042748,7042750,7042752,7042754,7042756,7042758,7042760,7042762,7042764,7042766 UNSPK: P044947 BKG: P044947								
Mercury	84	83	80-120	1	20	N.D.	N.D.	0 (1)	20
Batch number: 13127102201A	Sample number(s): 7042747,7042749,7042751,7042753,7042755,7042757,7042759,7042761,7042763,7042765 UNSPK: 7042747 BKG: 7042747								
Total Cyanide (solid)	99		68-134			N.D.	N.D.	0 (1)	20
Batch number: 13127820002A	Sample number(s): 7042730-7042741 BKG: 7042736								
Moisture						20.8	19.7	6	13
Batch number: 13127820003A	Sample number(s): 7042747,7042749,7042751,7042753,7042755,7042757,7042759,7042761,7042763,7042765 BKG: P043182								
Moisture						9.0	8.4	8	13

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 Ext. Soil Master w/GRO
Batch number: A131251AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7042730	97	103	104	94
7042734	97	105	104	95
7042738	99	105	110	88
7042739	100	105	104	97
7042741	99	104	105	94

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Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1387153
Reported: 05/14/13 at 05:32 PM

Surrogate Quality Control

Blank	95	99	105	96
LCS	95	96	106	97
LCSD	95	95	106	97
MS	96	98	107	97
Limits:	50-141	54-135	52-141	50-131

Analysis Name: 8260 Ext. Soil Master w/GRO
Batch number: R131231AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7042731	65	68	88	83
7042732	67	70	69	80
7042733	71	74	72	81
7042735	71	74	75	76
7042736	69	70	71	72
7042737	69	71	74	96
7042740	61	63	59	82
Blank	90	93	93	92
LCS	91	91	89	89
LCSD	92	91	91	91
Limits:	50-141	54-135	52-141	50-131

Analysis Name: 8260 Ext. Water Master w/GRO
Batch number: T131231AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7042742	100	103	99	100
7042743	99	101	100	99
7042744	100	101	101	98
7042745	99	101	102	99
7042746	100	102	102	100
7042767	100	100	101	96
Blank	100	100	101	102
LCS	99	102	101	100
MS	100	102	101	100
MSD	98	100	101	103
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO soil C6-C10
Batch number: 13123A31A

	Trifluorotoluene-F
7042730	66
7042731	81
7042732	74
7042733	68
7042734	82
7042735	70
7042736	71
7042737	69
7042738	64
7042739	63
7042740	59*

*- Outside of specification
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Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1387153
Reported: 05/14/13 at 05:32 PM

Surrogate Quality Control

7042741	69
Blank	95
LCS	93
LCSD	96
Limits:	61-122

Analysis Name: TPH-GRO water C6-C10
Batch number: 13123A53A

	Trifluorotoluene-F
7042742	77
7042743	77
7042744	80
7042745	77
7042746	77
Blank	76
LCS	85
LCSD	83
Limits:	63-135

Analysis Name: TPH by OA-2 (Waters)
Batch number: 131260025A

	Chlorobenzene	Orthoterphenyl
7042742	88	97
7042743	93	99
7042744	96	97
7042745	94	99
7042746	75	72
Blank	92	95
LCS	83	98
LCSD	84	102
Limits:	28-152	52-131

Analysis Name: TPH by OA-2 (Soils)
Batch number: 131270009A

	Chlorobenzene	Orthoterphenyl
7042730	87	91
7042731	102	96
7042732	94	103
7042733	112	113
7042734	88	88
7042735	103	99
7042736	81	80
7042737	137*	122
7042738	96	95
7042739	82	92
7042740	0*	155*
7042741	91	97
Blank	94	105
LCS	88	103
LCSD	98	106

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1387153
Reported: 05/14/13 at 05:32 PM

Surrogate Quality Control

Limits:	49-125	59-129

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

Acct. # 14738 For Eurofins Lancaster Laboratories use only Group # 1387153 Sample # 7042730-67
Instructions on reverse side correspond with circled numbers.

COC # 325531

1 Client Information

Client: Tetra Tech Inc. Emily Fischer
Acct. #:
Project Name/#: Kuhlman Diecasting Site
PWSID #:
Project Manager: Jeff Pritchard
P.O. #:
Sampler: K. Mammoliti / Greg Dillon
Quote #:
Name of state where samples were collected: Kansas

4 Matrix: Sediment ☐ Soil ☒ Water: Ground ☐ Potable ☐ NPDES ☐ Surface ☐ Other: ☐

5 Analysis Requested — Preservation Codes: O | | O

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	VOCs by 8260	TPH-DRO Soil	TPH-GRO Soil C6-C10	Moisture	Hold by Lab	Remarks
GP-1-14'-16'	4/30/13	1006	X	X	6	X	X	X	X		MeOH, NaHSO4
GP-2-10'-12'	4/26/13	0957	X	X	6	X	X	X	X		
GP-3-14'-16'	4/26/13	1150	X	X	6	X	X	X	X		
GP-4-14'-16'	4/24/13	1115	X	X	6	X	X	X	X		
GP-5-6'-8'	4/30/13	1227	X	X	6	X	X	X	X		
GP-6-18'-20'	4/30/13	1114	X	X	6	X	X	X	X		
GP-7-18'-20'	4/25/13	1612	X	X	6	X	X	X	X		
GP-8-13'-15'	4/25/13	1008	X	X	6	X	X	X	X		
GP-9-18'-20'	4/25/13	1155	X	X	6	X	X	X	X		
GP-10-18-20'	4/25/13	1510	X	X	6	X	X	X	X		

7 Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed:

E-mail address: jpritchard@stagnollenvirotech.com

8 Data Package Options (circle if required)
Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	5/1/13	1600			

9

EDD Required? Yes No
If yes, format:
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx X Other ____
Temperature upon receipt 1.3-2.3 °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

Acct. # 14738 For Eurofins Lancaster Laboratories use only Group # 1387153 Sample # 7042730-67
Instructions on reverse side correspond with circled numbers.

COC # 325530

1 Client Information

Client: Tetra Tech Inc. Emily Fischer
Acct. #:
Project Name/#: Kuhlman Diecasting Site
PWSID #:
Project Manager: Jeff Pritchard
P.O. #:
Sampler: K. Mammoliti, G. Dillon
Quote #:
Name of state where samples were collected: Kansas

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	4 Matrix: Soil	Water	Other	Total # of Containers	5 Analysis Requested: Preservation Codes										
									O		O		H	H					
									VOCs by 8260	TPH-DRO Soil	TPH-GRO Soil C6-C10	Moisture	TPH-GRO Water	TPH-DRO Water	VOCs GRO				
GP-11-3'-5'	4/25/13	1400	X	X	X			6	X	X	X	X							MeOH, NaHSO4
GP-12-14'-16'	4/25/13	1320	X	X	X			6	X	X	X	X							MeOH, NaHSO4
GM-4-GW	4/30/13	1539	X			X		8	X				X	X					
GM-7-GW	4/30/13	1620	X			X		8	X				X	X					
GM-13-GW	4/30/13	1346	X			X		8	X				X	X					
GM-15-GW	4/30/13	1439	X			X		8	X				X	X					
~~GM~~ TW-3-GW	4/30/13	0855	X			X		8	X				X	X					
~~BM-W-1~~	~~4/23/13~~	~~1020~~																	GRO
BM-F-1	4/23/13	1020	X				X												
BM-F-2	4/23/13	1030	X				X												

7 Turnaround Time (TAT) Requested (please circle)
~~Standard~~ Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed:

E-mail address: jpritchard@seaglenvirotech.com

8 Data Package Options (circle if required)
Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	5/1/13	1600			
			Pat Gu	5/2/13	0910

9

EDD Required? Yes No
If yes, format:
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx X Other ____
Temperature upon receipt 1.3-2.3 °C

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

Acct. # 14738 For Eurofins Lancaster Laboratories use only Group # 1387153 Sample # 7042730-67
Instructions on reverse side correspond with circled numbers.

COC # 325380

1 Client Information

Client: Tetra Tech Inc. Emily Fischer
Acct. #:
Project Name/#: Kuhlman Diecasting Site
PWSID #:
Project Manager: Jeff Pritchard
P.O. #:
Sampler: K Mammoliti, C. Dillon
Quote #:
Name of state where samples were collected: Kansas

4 Matrix: Sediment ☐ Soil ☐ Water: Ground ☐ Potable ☐ NPDES ☐ Surface ☐ Other: Concrete Chip

5 Analysis Requested — Preservation Codes: H

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Total # of Containers	TCLP Metals	Total Metals	VOCs by 8260
BM-W-1	4/23/13	1038		X	2	X	X	
BM-F-3	4/23/13	1055	X		2	X	X	
BM-W-2	4/23/13	1105		X	2	X	X	
BM-F-4	4/23/13	1120	X		2	X	X	
BM-Debris-1	4/23/13	1138	X	X	2	X	X	
BM-WWTP-1	4/23/13	1140		X	2	X	X	
BM-W-3	4/23/13	1143		X	2	X	X	
BM-W-4	4/23/13	1155		X	2	X	X	
Trip Blank	4/30/13	1247	X		2			X

For Lab Use Only
FSC:
SCR#: 138131

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

6 Remarks

7 Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
E-mail address: jpritchard@seagullenvirotech.com

8 Data Package Options (circle if required)
Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Angela S. Montgomery	4/18/13	13:22			
	5/1/13	1600			
			Pat Gh	5/2/13	0910

9

EDD Required? Yes No
If yes, format:
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx X ____ Other ____
Temperature upon receipt 1.3-2 ③ PG 5/2/13 °C 1.3-2.3

eurofins | Lancaster Laboratories

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

June 26, 2013

Project: Kuhlman Die Casting Site

Submittal Date: 06/14/2013
Group Number: 1397251
PO Number: 1093775
State of Sample Origin: KS

Client Sample Description	Lancaster Labs (LLI) #
MW-3-GW Grab Groundwater Sample	7093482
MW-2-GW Grab Groundwater Sample	7093483
MW-1-GW Grab Groundwater Sample	7093484
MW-1-GW Filtered Grab Groundwater Sample	7093485

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Tetra Tech	Attn: Emily Fisher
ELECTRONIC COPY TO	Tetra Tech, Inc.	Attn: Jeff Pritchard

Respectfully Submitted,

Amek Carter
Specialist

(717) 556-7252

Sample Description: MW-3-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7093482
LLI Group # 1397251
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 06/12/2013 12:44 by CC

Submitted: 06/14/2013 09:25
Reported: 06/26/2013 15:24

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

MW3GW

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.		6	20	1
10335	Benzene	71-43-2	N.D.		0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.		1	5	1
10335	Bromoform	75-25-2	N.D.		1	5	1
10335	Bromomethane	74-83-9	N.D.		1	5	1
10335	2-Butanone	78-93-3	N.D.		3	10	1
10335	Carbon Disulfide	75-15-0	N.D.		1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10335	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10335	Chloroethane	75-00-3	N.D.		1	5	1
10335	Chloroform	67-66-3	N.D.		0.8	5	1
10335	Chloromethane	74-87-3	N.D.		1	5	1
10335	Dibromochloromethane	124-48-1	N.D.		1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.		1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.		1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	8		0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10335	2-Hexanone	591-78-6	N.D.		3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10335	Methylene Chloride	75-09-2	N.D.		2	5	1
10335	Styrene	100-42-5	N.D.		1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10335	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10335	Toluene	108-88-3	N.D.		0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10335	Trichloroethene	79-01-6	2	J	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.		1	5	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**		**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.		20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**		**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.		0.25	0.50	1
02112	Kerosene	8008-20-6	N.D.		0.50	1.5	1
02112	10W-40 Motor Oil	n.a.	N.D.		1.0	2.0	1
02112	Total TPH	n.a.	N.D.		0.50	2.0	1

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: MW-3-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7093482
LLI Group # 1397251
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 06/12/2013 12:44 by CC

Submitted: 06/14/2013 09:25
Reported: 06/26/2013 15:24

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

MW3GW

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	Y131761AA	06/25/2013 16:24	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y131761AA	06/25/2013 16:24	Angela D Sneeringer	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13171C20A	06/22/2013 00:41	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13171C20A	06/22/2013 00:41	Marie D John	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131650038A	06/18/2013 01:12	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131650038A	06/17/2013 03:00	Sherry L Morrow	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-2-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7093483
LLI Group # 1397251
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 06/12/2013 13:54 by CC

Submitted: 06/14/2013 09:25
Reported: 06/26/2013 15:24

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

MW2GW

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	N.D.	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	12	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.	0.25	0.50	1
02112	Kerosene	8008-20-6	N.D.	0.50	1.5	1
02112	10W-40 Motor Oil	n.a.	N.D.	0.50	2.0	1
02112	Total TPH	n.a.	N.D.	0.50	2.0	1

Reporting limits were raised due to interference from the sample matrix.

*=This limit was used in the evaluation of the final result

Sample Description: MW-2-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7093483
LLI Group # 1397251
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 06/12/2013 13:54 by CC

Submitted: 06/14/2013 09:25
Reported: 06/26/2013 15:24

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

MW2GW

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	Y131761AA	06/25/2013 16:45	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y131761AA	06/25/2013 16:45	Angela D Sneeringer	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13171C20A	06/22/2013 01:03	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13171C20A	06/22/2013 01:03	Marie D John	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131650038A	06/18/2013 02:00	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131650038A	06/17/2013 03:00	Sherry L Morrow	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-1-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7093484
LLI Group # 1397251
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 06/12/2013 14:53 by CC

Submitted: 06/14/2013 09:25
Reported: 06/26/2013 15:24

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

MW1GW

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10335	Acetone	67-64-1	N.D.	6	20	1
10335	Benzene	71-43-2	N.D.	0.5	5	1
10335	Bromodichloromethane	75-27-4	N.D.	1	5	1
10335	Bromoform	75-25-2	N.D.	1	5	1
10335	Bromomethane	74-83-9	N.D.	1	5	1
10335	2-Butanone	78-93-3	N.D.	3	10	1
10335	Carbon Disulfide	75-15-0	N.D.	1	5	1
10335	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10335	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10335	Chloroethane	75-00-3	N.D.	1	5	1
10335	Chloroform	67-66-3	N.D.	0.8	5	1
10335	Chloromethane	74-87-3	13	1	5	1
10335	Dibromochloromethane	124-48-1	N.D.	1	5	1
10335	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10335	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10335	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10335	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10335	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10335	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10335	2-Hexanone	591-78-6	N.D.	3	10	1
10335	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10335	Methylene Chloride	75-09-2	N.D.	2	5	1
10335	Styrene	100-42-5	N.D.	1	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10335	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10335	Toluene	108-88-3	N.D.	0.7	5	1
10335	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10335	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10335	Trichloroethene	79-01-6	N.D.	1	5	1
10335	Vinyl Chloride	75-01-4	N.D.	1	5	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC Volatiles	**OA-1 GRO SW-846 8015B**		**ug/l**	**ug/l**	**ug/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	50	1
GC Petroleum Hydrocarbons	**OA-2 DRO SW-846 8015B**		**mg/l**	**mg/l**	**mg/l**	
02112	Diesel/#2 Fuel	68334-30-5	N.D.	0.50	1.0	1
02112	Kerosene	8008-20-6	N.D.	1.0	3.0	1
02112	10W-40 Motor Oil	n.a.	N.D.	1.0	4.0	1
02112	Total TPH	n.a.	N.D.	1.0	4.0	1
Reporting limits were raised due to interference from the sample matrix.						
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0896	0.0068	0.0200	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-1-GW Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7093484
LLI Group # 1397251
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 06/12/2013 14:53 by CC

Submitted: 06/14/2013 09:25
Reported: 06/26/2013 15:24

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

MW1GW

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07046	Barium	7440-39-3	2.91	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.0143	0.00036	0.0050	1
07051	Chromium	7440-47-3	0.292	0.0011	0.0150	1
07055	Lead	7439-92-1	0.369	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0075	0.0200	1
07066	Silver	7440-22-4	0.0092	0.0012	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.00067	0.000070	0.00020	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	8260 Ext. Water Master w/GRO	SW-846 8260B	1	Y131761AA	06/25/2013 17:06	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y131761AA	06/25/2013 17:06	Angela D Sneeringer	1
01635	TPH-GRO water C6-C10	OA-1 GRO SW-846 8015B	1	13171C20A	06/21/2013 22:51	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13171C20A	06/21/2013 22:51	Marie D John	1
02112	TPH by OA-2 (Waters)	OA-2 DRO SW-846 8015B	1	131650038A	06/18/2013 02:48	Heather E Williams	1
11177	MO/IA Waters Extraction	SW-846 3510C	1	131650038A	06/17/2013 03:00	Sherry L Morrow	1
07035	Arsenic	SW-846 6010B	1	131701848004	06/21/2013 05:23	Tara L Snyder	1
07046	Barium	SW-846 6010B	1	131701848004	06/21/2013 05:23	Tara L Snyder	1
07049	Cadmium	SW-846 6010B	1	131701848004	06/21/2013 05:23	Tara L Snyder	1
07051	Chromium	SW-846 6010B	1	131701848004	06/21/2013 05:23	Tara L Snyder	1
07055	Lead	SW-846 6010B	1	131701848004	06/25/2013 04:44	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131701848004	06/21/2013 05:23	Tara L Snyder	1
07066	Silver	SW-846 6010B	1	131701848004	06/21/2013 05:23	Tara L Snyder	1
00259	Mercury	SW-846 7470A	1	131705713005	06/21/2013 09:57	Damary Valentin	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	131701848004	06/20/2013 11:07	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131705713005	06/20/2013 15:30	Nelli S Markaryan	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-1-GW Filtered Grab Groundwater Sample
Kuhlman Die Casting Site

LLI Sample # WW 7093485
LLI Group # 1397251
Account # 14738

Project Name: Kuhlman Die Casting Site

Collected: 06/12/2013 14:53 by CC

Submitted: 06/14/2013 09:25
Reported: 06/26/2013 15:24

Tetra Tech, Inc.
415 Oak Street
Kansas City MO 64106

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
07035	Arsenic	7440-38-2	0.0251	0.0068	0.0200	1
07046	Barium	7440-39-3	0.217	0.00033	0.0050	1
07049	Cadmium	7440-43-9	0.00041 J	0.00036	0.0050	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07055	Lead	7439-92-1	0.0075 J	0.0047	0.0150	1
07036	Selenium	7782-49-2	N.D.	0.0075	0.0200	1
07066	Silver	7440-22-4	N.D.	0.0012	0.0050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000070	0.00020	1

General Sample Comments

This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	131701848004	06/21/2013 05:27	Tara L Snyder	1
07046	Barium	SW-846 6010B	1	131701848004	06/21/2013 05:27	Tara L Snyder	1
07049	Cadmium	SW-846 6010B	1	131701848004	06/21/2013 05:27	Tara L Snyder	1
07051	Chromium	SW-846 6010B	1	131701848004	06/21/2013 05:27	Tara L Snyder	1
07055	Lead	SW-846 6010B	1	131701848004	06/25/2013 04:48	John W Yanzuk II	1
07036	Selenium	SW-846 6010B	1	131701848004	06/21/2013 05:27	Tara L Snyder	1
07066	Silver	SW-846 6010B	1	131701848004	06/21/2013 05:27	Tara L Snyder	1
00259	Mercury	SW-846 7470A	1	131705713005	06/21/2013 09:59	Damary Valentin	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	131701848004	06/20/2013 11:07	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	131705713005	06/20/2013 15:30	Nelli S Markaryan	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1397251
Reported: 06/26/13 at 03:24 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: Y131761AA	Sample number(s): 7093482-7093484								
Acetone	N.D.	6.	20	ug/l	81		35-181		
Benzene	N.D.	0.5	5	ug/l	91		77-121		
Bromodichloromethane	N.D.	1.	5	ug/l	90		73-120		
Bromoform	N.D.	1.	5	ug/l	82		61-120		
Bromomethane	N.D.	1.	5	ug/l	71		51-120		
2-Butanone	N.D.	3.	10	ug/l	85		57-141		
Carbon Disulfide	N.D.	1.	5	ug/l	79		68-121		
Carbon Tetrachloride	N.D.	1.	5	ug/l	93		65-137		
Chlorobenzene	N.D.	0.8	5	ug/l	94		80-120		
Chloroethane	N.D.	1.	5	ug/l	81		60-120		
Chloroform	N.D.	0.8	5	ug/l	93		77-122		
Chloromethane	N.D.	1.	5	ug/l	92		54-123		
Dibromochloromethane	N.D.	1.	5	ug/l	87		72-120		
1,1-Dichloroethane	N.D.	1.	5	ug/l	94		79-120		
1,2-Dichloroethane	N.D.	1.	5	ug/l	99		64-130		
1,1-Dichloroethene	N.D.	0.8	5	ug/l	90		76-124		
cis-1,2-Dichloroethene	N.D.	0.8	5	ug/l	90		80-120		
trans-1,2-Dichloroethene	N.D.	0.8	5	ug/l	94		80-120		
1,2-Dichloropropane	N.D.	1.	5	ug/l	96		80-120		
cis-1,3-Dichloropropene	N.D.	1.	5	ug/l	93		78-120		
trans-1,3-Dichloropropene	N.D.	1.	5	ug/l	93		66-124		
Ethylbenzene	N.D.	0.8	5	ug/l	91		79-120		
2-Hexanone	N.D.	3.	10	ug/l	83		59-125		
4-Methyl-2-pentanone	N.D.	3.	10	ug/l	84		65-122		
Methylene Chloride	N.D.	2.	5	ug/l	96		84-118		
Styrene	N.D.	1.	5	ug/l	89		77-120		
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/l	79		70-129		
Tetrachloroethene	N.D.	0.8	5	ug/l	115		79-120		
Toluene	N.D.	0.7	5	ug/l	94		79-120		
1,1,1-Trichloroethane	N.D.	0.8	5	ug/l	87		66-126		
1,1,2-Trichloroethane	N.D.	0.8	5	ug/l	92		80-120		
Trichloroethene	N.D.	1.	5	ug/l	104		80-120		
Vinyl Chloride	N.D.	1.	5	ug/l	87		63-120		
Xylene (Total)	N.D.	0.8	5	ug/l	90		77-120		
Batch number: 13171C20A	Sample number(s): 7093482-7093484								
TPH-GRO water C6-C10	N.D.	20.	50	ug/l	99	95	75-135	4	30
Batch number: 131650038A	Sample number(s): 7093482-7093484								
Diesel/#2 Fuel	N.D.	0.050	0.10	mg/l	89	78	63-122	12	20
Kerosene	N.D.	0.10	0.30	mg/l					
10W-40 Motor Oil	N.D.	0.10	0.40	mg/l					
Total TPH	N.D.	0.10	0.40	mg/l					

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1397251
Reported: 06/26/13 at 03:24 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 131701848004	Sample number(s): 7093484-7093485								
Arsenic	N.D.	0.0068	0.0200	mg/l	103		90-113		
Barium	N.D.	0.00033	0.0050	mg/l	103		90-110		
Cadmium	N.D.	0.00036	0.0050	mg/l	103		90-112		
Chromium	N.D.	0.0011	0.0150	mg/l	101		90-110		
Lead	N.D.	0.0047	0.0150	mg/l	106		88-110		
Selenium	N.D.	0.0075	0.0200	mg/l	101		80-120		
Silver	N.D.	0.0012	0.0050	mg/l	109		80-120		
Batch number: 131705713005	Sample number(s): 7093484-7093485								
Mercury	N.D.	0.00007 0	0.00020	mg/l	92		80-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: Y131761AA	Sample number(s): 7093482-7093484 UNSPK: P100716								
Acetone	54	59	33-159	6	30				
Benzene	-828 (2)	-2440 (2)	72-134	90*	30				
Bromodichloromethane	109	107	78-125	2	30				
Bromoform	82	85	48-118	3	30				
Bromomethane	83	86	47-129	4	30				
2-Butanone	62	65	57-138	3	30				
Carbon Disulfide	99	98	67-135	1	30				
Carbon Tetrachloride	108	110	72-135	2	30				
Chlorobenzene	102	102	87-124	0	30				
Chloroethane	92	97	51-145	6	30				
Chloroform	133	120	81-134	10	30				
Chloromethane	111	111	46-137	0	30				
Dibromochloromethane	89	92	74-116	3	30				
1,1-Dichloroethane	112	111	84-129	1	30				
1,2-Dichloroethane	172*	129	68-131	28	30				
1,1-Dichloroethene	106	106	75-155	1	30				
cis-1,2-Dichloroethene	99	102	80-141	3	30				
trans-1,2-Dichloroethene	107	109	81-142	2	30				
1,2-Dichloropropane	112	111	83-124	1	30				
cis-1,3-Dichloropropene	101	103	70-116	2	30				
trans-1,3-Dichloropropene	99	100	74-119	2	30				
Ethylbenzene	23*	-87*	71-134	38*	30				
2-Hexanone	81	81	55-127	0	30				
4-Methyl-2-pentanone	83	85	63-123	3	30				
Methylene Chloride	105	106	78-133	0	30				
Styrene	99	101	78-125	2	30				
1,1,2,2-Tetrachloroethane	97	98	72-128	1	30				
Tetrachloroethene	102	103	80-128	1	30				
Toluene	31*	-64*	80-125	48*	30				
1,1,1-Trichloroethane	100	103	69-140	2	30				

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1397251
Reported: 06/26/13 at 03:24 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1,2-Trichloroethane	180*	158*	71-141	13	30				
Trichloroethene	119	113	88-133	5	30				
Vinyl Chloride	100	101	66-133	1	30				
Xylene (Total)	80	51*	79-125	13	30				
Batch number: 131701848004	Sample number(s): 7093484-7093485 UNSPK: P094198 BKG: P094198								
Arsenic	102	104	81-123	2	20	N.D.	N.D.	0 (1)	20
Barium	102	103	78-118	1	20	0.0885	0.0882	0	20
Cadmium	102	103	83-116	1	20	0.0012 J	0.0013 J	10 (1)	20
Chromium	103	104	81-120	1	20	N.D.	0.0013 J	200* (1)	20
Lead	108	108	75-125	0	20	N.D.	0.0051 J	200* (1)	20
Selenium	85	86	75-125	1	20	N.D.	N.D.	0 (1)	20
Silver	110	112	75-125	2	20	0.0017 J	0.0014 J	18 (1)	20
Batch number: 131705713005	Sample number(s): 7093484-7093485 UNSPK: P098196 BKG: P098196								
Mercury	93	90	80-120	3	20	N.D.	N.D.	0 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 Ext. Water Master w/GRO
Batch number: Y131761AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7093482	91	91	87	88
7093483	90	91	90	88
7093484	91	93	91	89
Blank	88	91	93	88
LCS	90	93	94	91
MS	90	89	95	95
MSD	91	90	94	93
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO water C6-C10
Batch number: 13171C20A

	Trifluorotoluene-F
7093482	87
7093483	87
7093484	85
Blank	87
LCS	119
LCSD	118
Limits:	63-135

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Tetra Tech, Inc. Group Number: 1397251
Reported: 06/26/13 at 03:24 PM

Surrogate Quality Control

Analysis Name: TPH by OA-2 (Waters)
Batch number: 131650038A

	Chlorobenzene	Orthoterphenyl
7093482	92	96
7093483	70	79
7093484	78	77
Blank	88	94
LCS	91	103
LCSD	77	95
Limits:	28-152	52-131

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody

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Acct. # 14738 Group # 1397251 Sample # 7093482-85 **COC #**

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: Tetra Tech Inc Emily Fischer Acct. #:

Project Name/#: Kuhlman Diecasting PWSID #:

Project Manager: Jeff Pritchard P.O.#:

Sampler: C. Canacari, G. Dillon Quote #:

Name of state where samples were collected: Kansas

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Matrix: Soil	Sediment	Water (Ground / Surface / Potable / NPDES)	Other:	(4) Total # of Containers	(5) Analyses Requested / Preservation Codes: VOCs (H)	TPH-GRO (H)	TPH-DRO (H)	Total zinc (N)	Remarks
MW-3-GW	6/12/13	12:44	X				X		8	X	X	X		
MW-2-GW	6/12/13	13:54	X				X		8	X	X	X		
MW-1-GW	6/12/13	14:53	X				X		10	X	X	X	X	

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

(6) Temperature of samples upon receipt (if requested)

(7) **Turnaround Time Requested** (TAT) (please circle): Standard Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone E-mail
Phone #:
E-mail address: jpritchard@seagatenviro tech.com

(8) **Data Package Options** (please circle if required)
Type I (Validation/non-CLP) MA MCP CT RCP
Type III (Reduced non-CLP)
Type IV (CLP SOW)
Type VI (Raw Data Only)
TX TRRP-13

EDD Required? Yes No

Site-specific QC (MS/MSD/Dup)? Yes No
(if yes, indicate QC sample and submit triplicate sample volume)

Relinquished by:	Date	Time	Received by:	Date	Time
	6/13/13	15:30			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	6/14/13	925

(9)

Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300
The white copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the client.

Issued by Dept. 40 Management 7044.01

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

APPENDIX H

TABLES

TABLE H-1

VOCS AND TPH IN SUBSURFACE SOIL
KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Sample ID	Depth (ft bgs)	Volatile Organic Compounds (Results in µg/kg)										TPH (Results in mg/kg)	
		Acetone	Benzene	2-Butanone (MEK)	1,1-DCA	*cis* -1,2-DCE	*trans* -1,2-DCE	Ethylbenzene	2-Hexanone	Trichloroethene	Xylenes	TPH-DRO	TPH-GRO
GP-1-14-16	14-16	**7.0 J**	**0.5 J**	< 3	< 0.8	< 0.8	< 0.8	< 0.8	< 2	< 0.8	< 0.8	< 1.0	< 0.20
GP-2-10-12	10-12	< 300	< 22	< 170	< 43	< 43	< 43	< 43	< 130	< 43	< 43	**458**	**280**
GP-3-14-16	14-16	< 290	< 21	< 170	< 41	< 41	< 41	< 41	< 120	< 41	< 41	**961**	**99**
GP-4-14-16	14-16	< 310	< 22	< 180	< 44	< 44	< 44	< 44	< 130	< 44	< 44	**645**	**110**
GP-5-6-8	6-8	**19**	**0.4 J**	**3.0 J**	< 0.8	< 0.8	< 0.8	< 0.8	< 2	< 0.8	< 0.8	< 10.0	< 0.20
GP-6-18-20	18-20	< 290	< 21	< 160	< 41	< 41	< 41	< 41	< 120	< 41	< 41	**311**	**41**
GP-7-18-20	18-20	< 290	< 21	< 160	< 41	< 41	< 41	< 41	< 120	< 41	< 41	**10.4 J**	**47**
GP-8-13-15	13-15	< 300	< 21	< 170	< 42	< 42	< 42	< 42	< 120	< 42	< 42	**946**	**220**
GP-9-18-20	18-20	< 5	**0.7 J**	< 3	**0.8 J**	**55**	**2.0 J**	< 0.8	< 2	**15**	< 0.8	< 10.0	< 0.10
GP-10-18-20	18-20	**52**	**0.6 J**	**6.0 J**	< 0.8	< 0.8	< 0.8	< 0.8	< 2	< 0.8	< 0.8	< 10.0	< 0.20
GP-11-3-5	3-5	< 290	< 21	< 170	< 42	< 42	< 42	**63 J**	**9,500**	< 42	**64 J**	**15,400**	**290**
GP-12-14-16	14-16	< 6	**0.7 J**	< 3	< 0.8	< 0.8	< 0.8	< 0.8	< 2	< 0.8	< 0.8	< 26.4	< 0.20
KDHE RSK - Residential Soil		**5E+07**	**15,900**	**2.5E+07**	**46,800**	**115,000**	**202,000**	**82,000**	**NE**	**41,000**	**936,000**	**2,000**	**220**
KDHE RSK - Non-Residential Soil		**4.1E+08**	**28,200**	**1E+08**	**79,900**	**194,000**	**333,000**	**145,000**	**NE**	**69,800**	**1,410,000**	**20,000**	**450**

Notes:

Sample results were compared to Risk-Based Standards for Kansas developed by the Kansas Department of Health and Environment.
Bold result indicates analyte was detected above the laboratory detection limit.
Shaded result indicates analyte was detected above a respective RSK value.

<	Less than	KDHE	Kansas Department of Health and Environment
DCA	Dichloroethane	mg/kg	Milligrams per kilogram
DCE	Dichloroethene	NE	Not established
ft bgs	Feet below ground surface	RSK	Risk-based Standards for Kansas
DRO	Diesel range organics	TPH	Total petroleum hydrocarbons
GRO	Gasoline range organics	µg/kg	Micrograms per kilogram
ID	Identification	VOC	Volatile organic compound
J	Estimated value		

TABLE H-2

VOCS AND TPH IN GROUNDWATER
KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Sample ID	Sample Location	Depth (ft bgs)	Volatile Organic Compounds (micrograms per liter)									TPH (milligrams per liter)	
			Acetone	Chloroform	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	*cis* -1,2-Dichloroethene	*trans* -1,2-Dichloroethene	Trichloroethene	Vinyl Chloride	TPH-DRO	TPH-GRO
Geoprobe® Temporary Wells													
TW-1-GW	TW-1	26-30	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
TW-2-GW	TW-2	24-27	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	**2.5**	**0.730**
TW-3-GW	TW-3	25-29	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
TW-4-GW	TW-4	26-30	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	**1.0 J**	**0.37 J**	< 0.020
TW-5-GW	TW-5	26-30	< 6.0	**1.0 J**	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	**0.16 J**	< 0.020
TW-6-GW	TW-6	22-26	< 6.0	**0.9 J**	< 1.0	**1.0 J**	< 0.8	**100**	< 0.8	< 1.0	**1.0 J**	**0.12 J**	**0.092**
TW-7-GW	TW-7	23-27	**6.0 J**	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	**7.9**	**0.190**
TW-8-GW	TW-8	24-28	< 6.0	< 0.8	< 1.0	**3.0 J**	**3.0 J**	**260**	**3.0 J**	**240**	< 1.0	< 0.10	**0.270**
TW-9-GW	TW-9	22-26	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	**0.11 J**	< 0.020
TW-10-GW	TW-10	22-26	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
TW-11-GW	TW-11	20-24	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
TW-12-GW	TW-12	24-28	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
TW-13-GW	TW-13	26-30	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
TW-14-GW	TW-14	20-24	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
Permanent Monitoring Wells													
GM-4-GW	GM-4	3-19.5	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	**5.0 J**	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
GM-7-GW	GM-7	7.5-22.5	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
GM-13-GW	GM-13	17.5-27.5	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	**0.27**	< 0.020
GM-15-GW	GM-15	15-25	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
MW-1-GW	MW-1	15-30	< 6.0	< 0.8	**13**	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 1.0	< 0.020
MW-2-GW	MW-2	5-25	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	**12**	< 0.8	< 1.0	< 1.0	< 0.5	< 0.020
MW-3-GW	MW-3	13-28	< 6.0	< 0.8	< 1.0	< 1.0	< 0.8	**8.0**	< 0.8	**2.0 J**	< 1.0	< 0.5	< 0.020
Rinsate Blank			**12 J**	**1.0 J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.10	< 0.020
Field Blank			**10 J**	**1.0 J**	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 1.0	< 1.0	< 0.10	< 0.020
Trip Blank			< 6.0	< 0.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.10	< 0.020

TABLE H-2

VOCS AND TPH IN GROUNDWATER
KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Sample ID	Sample Location	Depth (ft bgs)	Volatile Organic Compounds (micrograms per liter)									TPH (milligrams per liter)	
			Acetone	Chloroform	Chloromethane	1,1-Dichloroethane	1,1-Dichloroethene	*cis* -1,2-Dichloroethene	*trans* -1,2-Dichloroethene	Trichloroethene	Vinyl Chloride	TPH-DRO	TPH-GRO
KDHE RSK - Residential Pathway			**11,500**	**80**	**127**	**25**	**7.0**	**70**	**100**	**5.0**	**2.0**	**0.5**	**0.5**
KDHE RSK - Non-Residential Pathway			**45,500**	**80**	**238**	**46.1**	**7.0**	**70**	**100**	**5.0**	**2.0**	**0.72**	**0.5**

Notes:

Sample results were compared to Risk-Based Standards for Kansas developed by the Kansas Department of Health and Environment.

Bold result indicates analyte was detected above laboratory detection limit.

Shaded result indicates analyte was detected above a respective RSK value.

<	Less than	J	Estimate value
DRO	Diesel range organics	KDHE	Kansas Department of Health and Environment
ft bgs	Feet below ground surface	TPH	Total petroleum hydrocarbons
GRO	Gasoline range organics	RSK	Risk-Based Standards for Kansas
ID	Identification	VOC	Volatile organic compound

TABLE H-3

METALS IN GROUNDWATER
KUHLMAN DIECASTING SITE, STANLEY, KANSAS

Sample ID	Sample Location	Depth (ft bgs)	Metals *(milligrams per liter)*															
			Arsenic		Barium		Cadmium		Chromium		Lead		Mercury		Selenium		Silver	
			Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TW-14-GW	TW-14	20-24	**0.035**	**0.0256**	**1.58**	**0.649**	**0.0037**	< 0.00036	**0.0303**	< 0.0011	**0.0437**	< 0.0051	**0.0001**	< 0.00007	< 0.0075	< 0.0075	< 0.0012	< 0.0012
MW-1-GW	MW-1	20-21	**0.0896**	**0.0251**	**2.91**	**0.217**	**0.0143**	**0.00041**	**0.292**	< 0.0011	**0.369**	**0.0075**	**0.0006**	< 0.00007	< 0.0075	< 0.0075	**0.0092**	< 0.0012
KDHE RSK - Residential Pathway			**0.01**		**2.0**		**0.005**		**0.1**		**0.015**		**0.002**		**0.05**		**0.0779**	
KDHE RSK - Non-Residential Pathway			**0.01**		**2.0**		**0.005**		**0.1**		**0.015**		**0.002**		**0.05**		**0.508**	

Notes:

Sample results were compared to Risk-Based Standards for Kansas developed by the Kansas Department of Health and Environment.

Bold result indicates analyte was detected above laboratory detection limit.

Shaded result indicates analyte was detected above a respective RSK value.

<	Less than
ft bgs	Feet below ground surface
ID	Identification
KDHE	Kansas Department of Health and Environment
RSK	Risk-Based Standards for Kansas

TABLE H-4

METALS AND CYANIDE IN BUILDING MATERIALS
KUHLMAN DIECASTING SITE, STANLEY KANSAS

	Analytical Results																	
	Arsenic		Barium		Cadmium		Chromium		Cyanide		Lead		Selenium		Silver		Mercury	
	Total	TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total	TCLP
Sample ID	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L
BM-F-1	**4.72**	**10.7**	**106**	**183**	**0.811**	< 0.36	**18.9**	**22.9**	< 0.18	NA	**16.8**	< 5.1	< 0.713	< 7.5	< 0.139	< 1.2	< 0.0098	< 0.070
BM-F-2	**3.88**	**8.7**	**259**	**189**	**0.736**	< 0.36	**23.7**	**17.3**	< 0.18	NA	**99.3**	< 5.1	< 0.713	**13.3**	< 0.139	< 1.2	< 0.0099	< 0.070
BM-F-3	**2.23**	**10.1**	**83.9**	**75.5**	**0.139**	< 0.36	**358**	**4,960**	**11.5**	NA	**3.9**	< 5.1	< 0.706	**9.3**	< 0.137	< 1.2	< 0.0097	< 0.070
BM-F-4	**2.05**	< 6.8	**82.7**	**373**	**0.097**	< 0.36	**11.2**	**20.7**	< 0.18	NA	**1.9**	< 5.1	< 0.706	**11.3**	< 0.137	< 1.2	< 0.0099	< 0.070
BM-W-1	**3.34**	**15.9**	**3,200**	**178**	**1.82**	**3.2**	**106**	**17.2**	< 0.18	NA	**601**	**128**	< 0.713	**13.6**	< 0.139	< 1.2	**5.87**	< 0.070
BM-W-2	**3.03**	**18.2**	**433**	**313**	**8.24**	**11.5**	**45.8**	**29.7**	**0.46**	NA	**503**	**50.4**	< 0.720	< 7.5	< 0.140	< 1.2	< 0.0097	< 0.070
BM-W-3	**2.74**	**11.7**	**576**	**283**	**4.52**	**15.2**	**16.7**	**2.7**	< 0.16	NA	**195**	< 5.1	< 0.706	10.8	< 0.137	< 1.2	**0.185**	< 0.070
BM-W-4	**3.1**	**12.7**	**153**	**306**	**9.30**	**20.2**	**8.60**	**19.3**	< 0.16	NA	**329**	**156**	< 0.706	**7.7**	< 0.137	< 1.2	**0.133**	< 0.070
BM-Debris-1	**3.99**	**15.8**	**82.1**	**276**	**1.30**	< 0.36	**19.6**	**4.9**	< 0.18	NA	**15**	< 5.1	**0.811**	< 7.5	< 0.137	< 1.2	< 0.0096	< 0.070
BM-WWTP-1	**11.4**	**9.2**	**51.8**	**174**	**0.296**	< 0.36	**92.8**	**10.6**	**6.6**	NA	**3.98**	< 5.1	< 0.692	< 7.5	<0.135	< 1.2	< 0.0095	< 0.070
TCLP Regulatory Limit (µg/L)	**5,000**		**100,000**		**1,000**		**5,000**		**NE**		**5,000**		**1,000**		**5,000**		**200**	
KDHE RSK - Residential Soil (mg/kg)	**11.3**		**15,300**		**39**		**33.6**		**1,560**		**400**		**391**		**391**		**2**	
KDHE RSK - Non-Residential Soil (mg/kg)	**38**		**277,000**		**965**		**111**		**40,900**		**1,000**		**10,200**		**10,200**		**20**	

Notes:

Sample results were compared to TCLP regulatory limits established in *Code of Federal Regulations* (CFR) 40 Part 261.24 and KDHE RSKs.

Bold result indicates analyte was detected above laboratory detection limit.

Shaded result indicates analyte was detected above a respective TCLP regulatory limit or RSK value.

<	Less than	NA	Not analyzed
ID	Identification	NE	Not establishe
KDHE	Kansas Department of Health and Environment	TCLP	Toxicity Characteristic Leaching Procedure
µg/L	Micrograms per liter	RSK	Risk-Based Standards for Kansas
mg/kg	Milligrams per kilogram		