

FINAL

**TANK REMOVAL WORK PLAN
TONAWANDA COKE CORPORATION
SITE 108
3800 RIVER ROAD
TONAWANDA, NEW YORK**

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LIST OF ACRONYMS

CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulations
ft.	foot/feet
GAC	granulated activated carbon
HASP	health and safety plan
HAZWOPER	Hazardous Waste Operations and Emergency Response Standard
HDPE	high-density polyethylene
ICR	Industrial Code Rule
LDR	Land Disposal Restrictions
LLDPE	linear low-density polyethylene
NCP	National Contingency Plan
NYCRR	New York Codes Rules and Regulations
NYSDOH	New York State Department of Health
NYSDOL	New York State Department of Labor
OSC	On-site coordinator
OSHA	Occupational Safety and Health Administration
PID	photo-ionization detectors
PM	particulate matter
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
SACM	suspect asbestos containing material
SHSO	site health and safety officer
SVOC	semivolatile organic compound
TCC	Tonawanda Coke Corporation
TCLP	toxicity characteristic leaching procedure
ug/m ³	micrograms per cubic meter
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

1.0 INTRODUCTION

This work plan presents proposed activities to remove three aboveground storage tanks and their remaining contents (tar and water) at Site 108 of the Tonawanda Coke Corporation (TCC) property in Tonawanda, NY. Planned activities include construction preparation, the removal of the tar and water, removal of the tanks, removal of surface tar from the berms and within the secondary containment areas, a survey to determine the presence and assess condition of all asbestos insulation present on-site by a certified Asbestos Inspector/Management Planner¹ and submittal of a report and work plan summarizing findings and asbestos abatement² recommendations, removal of the soil piles staged on-site from previous cleanup actions and site restoration upon completion of the work, as detailed below.

Procedures have also been developed to protect the health and safety of on-site personnel and ensure that further contamination will not occur as a result of this project (Parsons' Site Health and Safety Plan (HASP), Appendix A; Ontario Specialty Corporation's HASP, Appendix H). Air monitoring will be conducted in accordance with Section 3.4 and the Community Air Monitoring Plan (CAMP) provided as Appendix B. A Quality Assurance Project Plan will be submitted to EPA for review prior to collecting samples for analysis.

2.0 BACKGROUND

The subject property is part of the TCC plant. The main plant is located at 3875 River Road in Tonawanda, NY. Site 108 is located across the street at 3800 River Road (Figure 1). Site 108 extends from River Road to the Niagara River. Site access is restricted with a locked gate on the property boundary along River Road. There is a perimeter containment berm around the three tanks (Figure 2).

Background information indicates the site was primarily used for main plant shipping and deliveries by way of the Niagara River, including coke, coal, and coal tar (GHD 2017). Based on available information, it is understood that the three tanks were used for storage of coal tar produced from the coking operations.

Several rounds of investigation have been conducted at the site. Key findings relative to the storage tanks are as follows (GHD 2017):

- Storage Tanks – Each of the three tanks is about 45 feet (ft.) in diameter and has a concrete base.
 - Tank 1
 - Partially demolished; cut down to about 10 ft. in height
 - 4 to 5 ft. of waste coal tar was noted inside
 - Tank 2
 - About 36 ft. in height

¹ 12 NYCRR 56 defines a Management Planner as "Any person who assesses the hazard posed by the presence of asbestos or asbestos containing material and/or who recommends appropriate response actions and a schedule for such response actions..."

² 12 NYCRR 56 defines abatement as "Any portion of an asbestos project that includes procedures to control fiber release from asbestos containing material. This includes removal, encapsulation, enclosure, repair, or handling of asbestos material that may result in the release of asbestos fiber."

- A large hole, about 12-ft. by 12-ft., exists in the top of the tank
- About 9 ft. of waste coal tar was noted in the tank
- About 3.5 ft. of water is present on top of the tar
- One small hole was noted on the north side of the tank
- Tank 3
 - About 36 ft. in height
 - Several weep holes were noted in the tank walls
 - About 2 ft. of waste coal tar was noted in the tank
- Samples of tar from each tank show elevated levels of semivolatile organic compounds (SVOCs), including naphthalene, benzo compounds, pyrene, fluoranthene, and chrysene, all of which are consistent with a coal tar product (GHD 2017).
- There is tar present in most areas within the bermed areas. The thickness of the soft tar layer within the bermed area is up to 16 inches. Three samples of the tar were collected from within the bermed area and analyzed for SVOCs. The results matched the SVOC concentrations found in the tanks.

Observations during a site visit by Parsons for Honeywell on November 12, 2018 indicated that recent remedial construction activities had occurred, most notably:

- Several holes had been created in the side walls of Tank 3 approximately 5 ft. from the bottom of the tank.
- A portion of the berm adjacent to the north side of Tank 2 had been mechanically breached and partially repaired.
- Portions of the berm adjacent to Tanks 1 and 2 had been disturbed. Disturbed areas southwest of the berm appeared to be berm material relocated as part of the prior site activities.
- Pipes which appear to have been cut from Tank 2 and poly sheeting were laying inside the secondary containment area on the north side of Tank 2. A black material was noted to be floating on the surface of the water on the north side of Tank 2 as well. A pipe connecting to a damaged valve on the north side of Tank 2 has been cut and a drop of black material on the lip of the pipe evidenced it may have released material into the water below.

To address potential short-term concerns raised by USEPA based on site conditions, Honeywell implemented interim measures per a USEPA-approved workplan (Parsons 2018) which included repairs to the perimeter berms, covering of two onsite soil piles, and related activities. Repair of the berms was completed in February 2019. In addition, site conditions and water levels within the secondary containment areas are now monitored monthly and after significant precipitation events. If water levels within the secondary containment comes within two feet of the top of the berm at any location, water will be removed and managed as discussed in Section 4.3.

Tank content samples were collected by Parsons for Honeywell on April 11, 2019, including one tar sample from Tank 1 (west tank) and one tar sample from Tank 3 (east tank). The tar in Tank 2 was not accessible for sampling. A second round of tar samples (Tanks 1 and 2) were collected on June 6, 2019 as the laboratory was unable to run TCLP on the initial samples collected in April.

Table 1 presents tar sample results, including results from a 2016 sampling effort by GHD (GHD 2017) and TCLP testing results. Benzene exceeds TCLP hazardous waste criteria (D018) in both tar samples.

Laboratory results are included in Appendix C. One water sample (water on top of the tar) was collected from Tank 2 and analyzed. There was insufficient water in Tanks 1 and 3 for sampling. Table 2 presents the water sample results from Tank 2. The laboratory report from the April 2019 sampling is included as Appendix C. Table 3 presents previously submitted water sample results from the secondary containment stormwater. Table 4 presents a summary of the waste coal tar fluid properties (viscosity, density, and specific gravity) results and Table 5 presents a summary of moisture loss test results for the tar. Waste coal tar BTU and sulfur results were as follows:

Tank	BTU/lb.	Sulfur (mg/Kg)
Tank 1	13,700	1,410
Tank 3	16,000	3,150

3.0 TANK REMOVAL AND ASSOCIATED ACTIVITIES

This section details the activities associated with the removal of tar and water from the tanks and the subsequent demolition of the tanks. Work on the project will be completed by a qualified contractor. Specific activities to be completed include:

- Site control
- Mobilization and site preparation
- Temporary soil erosion and stormwater controls
- Air monitoring
- A site survey to identify and assess asbestos present on site and submittal of a report with findings and abatement recommendations
- Removal of piping and ancillary equipment within the secondary containment area and associated piping containing hazardous substances up to the point of the pump house
- Removal of tar and water from the tanks and tank demolition
- Removal of surface coal tar waste and other coal tar waste encountered during the work from within the secondary containment areas
- Removal of two soil piles staged on site remaining from previous cleanup actions (covered tarps adjacent to the south fence line)

Each of these activities are discussed below.

3.1 SITE CONTROL

The project area will be made secure from access by unauthorized personnel by use of the gate off River Road. The gate will be kept closed at all times. The gate shall be locked at the conclusion of work each day. Only authorized vehicles and personnel will be allowed into the project area. Site orientation, including review of the project HASP as appropriate, will be required for all site workers and visitors. All employees, subcontractors and visitors will be required to sign in and out before entering/leaving the site. This practice is important for the safety and security of the site and will be strictly adhered to by all parties. Any individual or party entering the site will be presented with, and required to sign, the HASP. By signing,

they agree that they understand the procedures, hazards and policies that must be followed on-site. Vehicular traffic will be limited to the designated roads and parking areas. Access to the controlled work zone will only be granted when approved by the Site Superintendent/Site Health and Safety Officer (SHSO). At the end of each work day, the contractor will account for all personnel, secure all portable equipment in designated areas and stage heavy equipment and tools in a safe, centralized location. Work zone control will be accomplished using appropriate barriers (barrier tape, concrete barriers, fencing, cones, rope, etc.). Honeywell and its contractors will be responsible for site security during site operations.

3.2 MOBILIZATION AND SITE PREPARATION

Mobilization and site preparation activities will include:

- Mobilization and establishment of work zone demarcation
- Installation of traffic signage
- Dust and emission controls
- Construction of temporary roads and ramps for access
- Construction of erosion and sediment control
- Construction of temporary waste staging/decontamination pad

Equipment and materials involved in the removal of tar and water, tank cleaning and tank removal activities will be mobilized and staged in the vicinity of the project area. Mobilization tasks include the following:

- Equipment Delivery – Equipment delivered to the site will be fit for duty and will have all applicable safety guards in place.
- Temporary Facilities – A crew trailer will be furnished and installed, along with a generator for power.
- Photo Documentation – Preconstruction pictures will be taken to document existing conditions at the site as well as public roadways adjacent to the site to be used during the performance of remediation activities.

The following equipment is planned for the project:

- 400 and 300 Series excavators
- Shear and grapple attachments for excavators
- Manlifts
- Steam generators & pressure washer
- Generator(s)
- Frac tank
- Weir tank
- Front end loader
- Pumps
- Granulated activated carbon (GAC) water treatment system
- Skid steer
- Office trailer
- Support trailer with small tools

Figure 2 presents the planned site layout, including work and support zones, temporary roads, and erosion and sediment controls. All adjacent utility services and overhead lines will be delineated and protected, including components not scheduled for removal. The following work/support zones will be established.

Zone	Use	Setup Details
Work Zone	Tank demolition and tar removal	Demarcated to control access
Decontamination Pad	Final cleaning of scrap metal and staging of scrap metal that will be shipped as hazardous debris.	75'x75'; bermed area with 20-mil poly overlain by composite mats to protect poly lining. A 6-foot tall temporary chain-link fence will be installed around a portion of the perimeter of the decontamination pad, with 6- mil poly sheeting secured to the chain-link fence to capture fugitive spray. The bottom of the 6-mil poly sheeting will terminate within the decontamination pad.
Equipment Decontamination Pad	Cleaning of equipment prior to exiting the work area.	30'x15', bermed area with 20-mil poly overlain by composite mats to protect poly lining. The equipment decontamination pad will be constructed as described above for the decontamination pad.
Staging Area	Delivery and staging of supplies and temporary holding for cleaned scrap metal	Gravel pad (portions of the construction access road); approximately 10,000 SF.
Support Zone	Vehicle parking, crew trailer, porta jons and handwash stations.	Gravel as needed.

The decontamination pads will be used for the removal of residual contaminated material from equipment and materials prior to leaving the site. The areas will be equipped with a pressure washer or similar appropriate equipment and sloped to drain water for pumping. The pads will be constructed as follows (Appendix D presents a figure detailing the decontamination pad construction):

- Base: concrete screenings or sand above adequate subbase layer
- Intermediate layer: 8 – 10 ounce geotextile fabric
- Liner: 20 millimeter linear low-density polyethylene (LLDPE) or high-density polyethylene (HDPE) single piece liner with no seams
- Side berms: sand/stone, hay bales or concrete jersey barriers
- Interior liner protection: composite mats

Imported materials will be tested and approved in accordance with NYSDEC DER-10 5.4(e). Decontamination water will be treated through a weir tank and GAC system prior to discharge to a frac

tank. The stored water shall be sampled and analyzed to determine if it meets discharge permit requirements prior to discharge to the Town of Tonawanda sanitary system. The water will be tested in accordance with Section 4.3. For water that does not meet discharge permit requirements, the media will be sent to Heritage Thermal Services.

Competent secondary containment berms are present around the tanks. These berms will be preserved until removal of the tank contents is complete. The berms will be expanded as necessary to form a work platform if necessary for access.

Any existing water within the secondary containment areas will be removed prior to construction. Water management will be conducted as detailed in Section 4.3.

3.3 TEMPORARY SOIL EROSION AND STORMWATER CONTROLS

Prior to the start of the tank removal activities, temporary erosion control and stormwater management structures will be installed throughout the project area as necessary to control surface water and minimize the potential for erosion. The existing berms and tank shells will be used to contain tank contents and other residual tar during project activities. Figure 2 shows the planned layout for stormwater and erosion control features, including the following, as necessary:

- Silt fence or socks around the perimeter of the work area
- Temporary check dams, diversion ditches, and hay bales to divert surface water flow around the work area as needed

Daily Inspections of these controls will be performed as a part of the site maintenance activities and required corrections and adjustments/modifications will be made in a timely manner.

3.4 AIR MONITORING

In accordance with NYSDOH requirements, demolition, tar removal, soil pile loadout and other intrusive activities at the site will be continuously monitored for volatile organic compounds (VOCs) and particulates (i.e., dust) at locations downwind and upwind of the perimeter of the work area. This monitoring will be conducted in accordance with the CAMP provided as Appendix B. The purpose of the air monitoring program is to ensure that the community and general public are not exposed to hazardous constituents at levels above accepted regulatory limits.

Dust will be monitored to document that concentrations at the work zone perimeter remain below site-specific action levels established for this stage of the project. The NYSDOH has established action levels for particulates at 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) above background levels. If the action level is exceeded for a 15-minute period, the work will be stopped and additional dust suppression measures (such as increasing the use of water or reducing equipment speeds) will be implemented. The dust monitoring will use real-time monitors capable of measuring dust less than 10 micrometers (PM-10) and capable of integrating PM-10 concentrations over a period of 15 minutes. Equipment will alert technicians immediately if dust exceeds the action level.

Air monitoring for VOCs will also be conducted in accordance with the CAMP to document total VOC concentrations at the work zone perimeter do not exceed action levels. VOC monitoring equipment will consist of photo-ionization detectors (PIDs) that will measure total VOC concentrations continually during all construction activities. The equipment will log data real time and send alarms to alert the technician if action levels are reached. The NYSDOH has established action levels for VOCs at 5 parts per million (ppm) above background levels. To provide additional assurance, the equipment will be set at a lower site-specific alert level of 1 ppm above background above background for the 15-minute average. If the air monitors detect VOC concentrations exceeding the site-specific level, the source of the emissions will be investigated and evaluated. If a reading of 5 ppm above background for the 15-minute average is reached or exceeded, work will be stopped until corrective measures are implemented. Rusmar spray foam (AC 667SE; Safety Data Sheet included in Appendix E) or equivalent and a pneumatic foam generating unit (self-contained trailer unit) will be maintained onsite during construction activities in the event air emissions cannot be controlled by other means. The foam can be applied to form a barrier between the waste coal tar or impacted media and the atmosphere to provide an immediate and effective barrier to minimize emissions.

The air monitoring will be conducted by way of upwind and downwind stations using a MiniRAE 3000 (10.6 bulb), or equivalent for total VOCs and a DustTrak2 Desktop Monitor 8530, or equivalent, for monitoring dust. The monitoring equipment will be setup in weather-proof cases with telemetric capabilities for email and text notifications to the construction manager, site superintendent and safety officer. An UltraRAE 3000 (9.8 eV bulb) will also be maintained on site for periodic monitoring of benzene levels.

Air monitoring will also be conducted during the project as necessary to ensure that work does not expose on-site personnel to potentially harmful contaminants. Controls will be put in place to limit exposure to dust and emissions. Personal air monitoring will be conducted as necessary.

3.5 PIPING AND ANCILLARY EQUIPMENT REMOVAL

Certain pipe insulation was sampled on February 28, 2019 and found to contain asbestos. Results of the asbestos inspection are presented in Appendix F. Additional surveying of all remaining Suspected Asbestos Containing Material (SACM) on-site shall be conducted to determine the presence of all asbestos insulation on-site. SACM shall be confirmed through sampling and polarized light microscopy (“PLM”) and transmission electron microscopy (“TEM”) analysis as necessary³. All asbestos identified in this survey shall be assessed for abatement needs with findings and recommendations presented in a report and abatement workplan. The work plan will include a schedule for implementing the asbestos abatement recommendations.

³ TEM is only necessary for non-friable organically bound (NOB) samples such as tar coatings, roofing materials, mastic, glue, and floor tiles, that are non-detect for asbestos when analyzed by PLM and/or the NYSDOH ELAP Gravimetric Reduction Method (NYS DOH ELAP Manual Item 198.1).

Under this workplan, asbestos removal procedures such as glove bags will be used to remove the asbestos insulation from the pipes located between the pumphouse and the storage tanks. Asbestos removal will be conducted in accordance with New York State Department of Labor (NYSDOL) Industrial Code Rule (ICR)- 56 by a NYSDOL-licensed asbestos abatement contractor using NYSDOL-certified workers. Project and air monitoring will be conducted as necessary by a NYSDOL-certified project monitor/air sampling technician. Asbestos waste will be appropriately bagged, labeled, transported and disposed at a USEPA approved landfill in compliance with USEPA's Offsite Rule and in compliance with New York Codes Rules and Regulations (NYCRR), Part 364 and Part 360. Asbestos waste will be staged in a lockable trailer or lockable hardtop dumpster at the end of each shift. Asbestos waste may stay in a lockable trailer or lockable hard top dumpster until filled, but in no instance longer than ten (10) calendar days after completion of abatement work. Waste transport trailers and dumpsters used to transport asbestos waste, shall be hard topped, lockable and lined with two (2) layers of six (6) mil fire-retardant polyethylene. Prior to transport from the work site, all waste trailers and dumpsters shall be sealed to ensure air, dust and watertight integrity, utilizing six (6) mil plastic, duct tape and expandable foam sealant as necessary. Prior to removal of the tanks, piping and ancillary equipment within the secondary containment area or otherwise inhibiting access to the tanks will be disconnected or cut. All piping containing hazardous substances in the secondary containment area and up to the point of the pump house shall be drained and removed. Pipe and equipment removal will be done using a combination of cutting and mechanical shearing. Contaminated piping and ancillary equipment will be wrapped in 6 mil poly and transported to the decontamination area for cleaning, as necessary for scrap recycling. Cleaning of the pipe will be done as described in Section 4.2. The waste coal tar will be collected and handled in accordance with Section 4.1.

3.6 TAR AND WATER REMOVAL AND TANK DEMOLITION

As discussed in Section 4.1, the waste coal tar will be managed as a listed waste (K142). Based on preliminary evaluations, it is anticipated the tar will be stabilized *in situ* prior to removal from the tanks through the use of a stabilization agent such as cement kiln dust, Portland cement or other applicable substances. If subsequent evaluations, including subsequent discussions with disposal and recycling facilities, determine an alternative removal approach, such as heating and pumping, is more appropriate, details will be provided to USEPA for approval prior to implementation. Work will be conducted using equipment listed in Section 3.2. Work crews, the designated on-site Health and Safety Officer and supervisors will have Occupational Safety and Health Administration (OSHA) 40-Hour Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training. The designated Health and Safety Officer will be onsite during construction.

Removal will begin with the demolition and removal of the top portion of the tanks. To decrease the potential hazards associated with the tar remaining in the tanks, the demolition will utilize cold cut and mechanical shear procedures. The tanks will be demolished from the top down to about two to three feet above the current tar levels. Any water overlaying the waste coal tar shall be removed and managed as described in Section 4.3. The remaining bottom portion of the tanks will be left in place and utilized as a mixing basin to stabilize the tar. Cut tank sections will be inspected for residuals. Sections of steel with no visual evidence of waste coal tar residual (e.g., tank sections with no visual indication of waste coal tar contact) will be transported to the staging area for scrap recycling. Pieces with residual tar will be

transported to the decontamination pad by way of direct placement, wrapping and transport, or use of an off-road truck.

Prior to stabilization, water remaining in the tanks will be removed by pumping and managed in accordance with Section 4.3. Tank 2 shall be the first tank cut and drained of water so that a waste coal tar sample can be collected for analysis with a one week, or shorter, turnaround time. The stabilization agent will be added in an adequate quantity to ensure that the mixed material passes the paint filter test before removal from the site. Paint filter testing will be done in the field in accordance with SW-846 Test Method 9095B. Load-out and off-site disposal of the stabilized tar will begin following stabilization of the waste coal tar in the tanks. The stabilized waste coal tar will be placed directly into lined and covered transport containers. The container types will depend on the transport vendor and may vary based on container availability. Plastic sheeting will be placed under and around the transportation containers to capture any waste material dropping from the bucket during movement between the tanks and the container. It is anticipated final removal of the waste coal tar from each tank will involve exposing heating coils inside the tanks. Heating coil pipe removal will be done using hand cutting tools and/or mechanical shear cutting to remove the pipes. As these pipes are removed, they will be wrapped and transported to the decontamination pad for cleaning. Residual water in the heating pipes will be handled in accordance with Section 4.3. After completion of waste coal tar removal from the tanks, the bottom portion of the tank walls will be cleaned to the extent practical prior to cutting by way of scraping and/or pressure washing. Depending on how well the final tank sections can be cleaned they will either be placed in the staging area (debris free) or brought to the decontamination pad for additional cleaning as discussed in Section 4.2. Wash water used to clean the tanks will be managed in accordance with Section 4.3.

Scrap metal from demolition will be further downsized as necessary and processed for off-site recycling or disposal in accordance with Section 4.2.

Following the completion of tank removal work, the berms and secondary containment areas soil will be investigated, in conjunction with USEPA, to determine the extent of required surface tar removal. Surface tar within the areas will be removed and placed directly in containers similar to the way the waste coal tar will be handled for offsite disposal shipment.

4.0 MATERIAL MANAGEMENT

This section details the activities surrounding the management of materials generated during the removal of the tanks. Any material generated will be managed in compliance with all applicable regulations and which limits environmental impacts. Applicable hazardous and non-hazardous waste manifests will accompany all materials from the site to their destination. A detailed description of the management of site materials is provided below, including:

- Waste Coal Tar
- Metal and concrete
- Water
- Soil

4.1 COAL TAR REUSE/DISPOSAL

As discussed in Section 2, preliminary testing of tank contents was conducted, and tar sample results received to date are summarized in Table 1. An assessment of re-use, recycling, and disposal options were conducted as follows:

Vendor	Role	Findings
Coopers Creek Chemical Corp	Manufacturer of disinfectants, asphalt coatings, waterproofing materials	Previous buyer of TCC coal tar. No interest in aged and weathered material.
Heritage Environmental Services	Waste transport and disposal broker	Operates hazardous waste incinerator, has arrangements with cement kilns, and owns rail cars.
Sumpter Transportation Corp	Tank content removal, waste transport and disposal broker	Has arrangements with cement kilns and proprietary tank extraction procedures.
Horizon Environment, Inc. (Canada)	Thermal desorption facility	Not allowed under permit
Earth Watch Waste Systems	Waste transport and disposal	Response pending
WTS	Waste transport and disposal	Response pending

The estimated volume of waste coal tar is 200,000 gallons. Based on findings to date, recycling options are limited to hazardous secondary materials for energy recovery at Resource Conservation and Recovery Act (RCRA) permitted waste incineration facilities or at RCRA permitted cement kilns.

Under this scenario, the materials would likely be shipped to one of the following facilities as a listed (K142), as described further below. However, these facilities have load and debris content limitations that will likely limit the amount of materials shipped to them.

- Green America Recycling, Hannibal, MO – USEPA ID#: MOD 054 018 288
- Greencastle WDF, Greencastle, IN – USEPA ID#: IND 006 419 212

Analytical results show the material is characteristic hazardous waste for benzene (D018).

Due to the accumulation of waste coal tar residue in the storage tanks, all material in the tanks will be managed as K142 listed waste under RCRA. The contaminated water and soil in the eastern and western secondary containment areas will also be classified as listed K142 waste. Water contained within all tanks will be classified as listed K142 waste.

All other waste coal tar material and contaminated media addressed under this Work Plan must be evaluated to determine whether the waste exhibits one or more characteristics of a hazardous waste.

An alternative and more likely disposal approach for a majority of the waste coal tar would be to transport the material to the following facilities for incineration, given the load and debris limitations associated with use as a fuel:

- RSI Environmental, Saint-Ambroise, Quebec, Canada; Quebec Permit # 1169045474. Bill Eaton at 978.692.9990.
- Heritage Thermal Services, 1250 St. George Street, East Liverpool, OH – USEPA ID#: OHD 980 613 541. Carrie Beringer at 330.386.2196.

Transport of waste material will be by way of truck with all loads adequately covered and sealed. Any changes to these disposal plans will be reviewed with USEPA in advance.

4.2 METAL AND CONCRETE

The tanks and pipes will be cut into manageable sized pieces and inspected. Debris-free sections will be placed in the staging area for recycling. Sections with visible waste coal tar impact will be transferred directly to the decontamination area for cleaning by way of pressure washing to the extent practical. Cleaned steel will then be moved to the staging area. Cleaned steel in the staging area will be shipped to one or more of the following recycling facilities:

- Metalico Buffalo, 127 Filmore Ave., Buffalo, NY. Eric Walton at 716.823.3788.
- Niagara Metals, 4861 Packard Road, Niagara Falls, NY. Todd Levin at 716.282.6200.
- Diamond Hurwitz Scrap, 267 Marilla St., Buffalo, NY. Stuart Blair at 716.823.2863.

If tank and pipe sections cannot be reasonably cleaned, use of an alternate treatment (e.g., macro encapsulation) covered under the Alternative Treatment Standards (40 CFR 268.45) will be reviewed with the USEPA.

We anticipate the tanks are sitting on top of concrete pads. Once the tank demolition is complete, the concrete pads will be demolished and inspected. If the concrete is visually clean the concrete will be placed in the staging area for transport to the following facility for disposal as non-hazardous waste:

- Swift River Associates, River Road, Tonawanda, NY. Tom Bieter at 716.875.6168.

If visual evidence of waste coal tar impacts is observed, the impacted concrete sections will be cleaned and placed in a lined and covered roll-off container and sampled for RCRA hazardous waste characteristics testing as necessary. All debris (steel, concrete, etc.) processing shall meet the requirements of 40 CFR 268.45 Treatment Standards for Hazardous Debris and 268.45(d) for treatment residuals, as applicable for disposal, unless the hazardous debris meets an exclusion or exemption such as 261.4(a)(13) (excluded scrap metal being recycled), in which case it would not be subject to 40 CFR part 26. Where applicable, if the hazardous debris is not impacted by K142 waste and tests as a characteristic hazardous waste and meets Land Disposal Restrictions (LDR) the material will be disposed at the following subtitle C landfill:

- Heritage Environmental Service' Roachdale, IN, Landfill USEPA ID#: IND 980 503 890. Craig Hogarth at 317.486.2783.

In regard to non-K142 listed waste debris, if the analytical results show the material is not a characteristic hazardous waste, the material may be landfilled at a Subtitle D landfill.

4.3 WATER

Pending approval from the USEPA for discharge to the Town of Tonawanda sanitary system (permit included in Appendix G), water from within the containment areas will be pumped to a weir tank and a GAC treatment system and subsequently to a nearby sanitary manhole along River Road on the Niagara River World property as per the current easement agreement.

Water is also present within the tanks. As discussed in Section 2, one sample was collected from water within Tank 2 in April 2019 (insufficient water was available in the other two tanks for sampling). As shown in Table 2, there are low levels of impact from the waste coal tar demonstrating the water may be acceptable for discharge to the POTW. Contaminated water will also be generated during tank and equipment cleaning and decontamination. Contaminated water from these sources will be pumped through a weir tank and a GAC treatment system and then to frac tanks and sampled/analyzed for potential discharge to the POTW. Sample analysis will include as necessary (consistent with the Interim Measures Work Plan):

- VOCs – EPA Method 624.1
- SVOCs – EPA Method 625.1
- Priority pollutant metals – EPA Method 200.7
- pH – field measurement.
- Cyanide – EPA Method 335.4
- Mercury – EPA Method 245.1
- Oil and Grease (1664B)

All sample results and the final proposed management approach will be provided to USEPA for approval prior to implementation and a modified permit application will be submitted to the Town for approval. Water that does not meet discharge permit requirements will be transported and disposed at Heritage Thermal Services. Spent GAC will be returned to the vendor for reactivation or disposal. Characterization and disposal will be reviewed with and approved by the EPA in advance.

4.4 BERM AREA SOILS

As discussed in Section 3.6, following the completion of tank removal work, the berms and secondary containment areas soil will be investigated, in conjunction with USEPA, to determine the extent of required surface tar removal. Surface tar within the areas will be removed and placed directly in containers consistent with procedures outlined in Section 4.1.

4.5 SOIL PILES

As discussed in Section 2, two soil piles were generated from previous site activities and covered by Honeywell earlier this year. The smaller pile is about 100 cubic yards and the larger pile is about 2,500 cubic yards. Waste characterization sampling will be conducted during construction activities to assess disposal requirements. The piles will be temporarily uncovered and sampled using a backhoe or excavator. The sampling effort will be coordinated with the USEPA. Representative samples will be collected and submitted for the following analysis:

- TCLP
 - VOCs
 - SVOCs
 - RCRA 8 metals
 - Pesticides/Herbicides

- Total PCBs
- Reactive Sulfide & Reactive Cyanide
- Ignitability/Flashpoint
- pH
- % Solids

Results and disposal plans will be reviewed with and approved by the USEPA.

5.0 SITE RESTORATION AND REPAIRS

This section details the efforts that will be made to restore the areas of the site that were impacted by the work. A description of the elements of the site restoration plan is provided below, which includes:

- Material Staging and Decontamination Area
- Grading and Seeding
- Erosion and Stormwater Controls
- Demobilization

5.1 MATERIAL STAGING AND DECONTAMINATION AREA

Upon completion of work, equipment used within the work zone will be decontaminated and the staging, decontamination, and support areas will be visually inspected, deconstructed and cleaned as necessary. Water handling equipment will be emptied and cleaned prior to demobilization. Dismantling of the decontamination pad will be as follows:

- Composite mats will be cleaned and returned to the vendor.
- The liner material will be cleaned by pressure washing and disposed at a subtitle D landfill.
- The underlying geotextile fabric and berm material will be inspected and if determined to be clean disposed at a subtitle D landfill. Contaminated materials shall either be cleaned or disposed of at a USEPA approved subtitle C disposal facility.

The weir and frac tanks, piping and GAC system will be flushed and cleaned prior to return to the vendors. The cleaning process will progress through the system from “dirty” to “clean” with a final flushing with clean water to the POTW. Residual sludges and debris will be containerized and characterized for offsite disposal. Results will be reviewed with the USEPA for disposal approval.

5.2 GRADING AND SEEDING

After removal of surface tar from the berms and within the secondary containment areas and impacted concrete a separation geotextile will be installed over the tank area footprint and the remaining berms containing uncontaminated soil will be deconstructed and used for grading of the tank area footprint. Grading will be mounded to facilitate shedding of water radially from the former tank area footprint. This will prevent ponding of water in this area. Seeding will be done in disturbed areas to establish erosion control. Starter fertilizer shall either be a component of the seed mix or added separately. The intent of

seeding will be for soil stabilization, as future site activities are anticipated. Therefore, a standard erosion control cover mix will be used with a mix of perennial and annual ryegrass. The specific seed type will be submitted as a pre-work submittal. Seeding rate will be as specified by the manufacturer (typically 50 lbs./acre). Seeded areas will be inspected weekly and watered as necessary until seedlings have established. Additional seeding will be done as necessary.

5.3 EROSION AND STORMWATER CONTROL

Temporary stormwater and erosion controls will be removed once vegetation in disturbed areas have established.

5.4 DEMOBILIZATION

At the conclusion of work, all personnel, equipment, supplies and materials will be demobilized from the site leaving it in an orderly condition. Gravel applied to some work areas may remain in place if approved by USEPA. All temporary signage will also be removed. A final inspection will be conducted to confirm that demobilization has been completed in a satisfactory manner.

6.0 REPORTING

All site activities will be documented appropriately. This will include the following information daily during site activities:

- On-site personnel
- Date of work
- Photo documentation of material and on-site activities
- Quantities of materials transported off site
- Issues or concerns

Monthly reports will be issued upon work plan approval until covered work is completed. Weekly reports will be issued during site activities. The weekly reports will describe significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems. Reporting shall meet the requirement of the Administrative Settlement Agreement and Order on Consent for a Removal Action, Index No. CERCLA-02-2019-2006, Paragraph 27. Following completion of the project's activities, a final report will be prepared consistent with the requirements set forth in Section 300.165 of the National Contingency Plan (NCP) entitled "On-site Coordinator (OSC) Reports" and will include the following information:

- Certification by a licensed professional engineer that the on-site activity was performed in accordance with the work plan
- A summary of the activities conducted at the site
- A summary of the management of all materials generated during the tank removal process

The final report will also include a listing of quantities and types of materials removed off-site and handled on-site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests and permits). The final report shall meet the requirement of the Administrative Settlement Agreement and Order on Consent for a Removal Action, Index No.CERCLA-02-2019-2006, Paragraph 28.

7.0 SCHEDULE

Figure 3 presents the anticipated construction schedule. Note the following:

- Mobilization will start within 14 days of Work Plan approval, pending acceptance of waste profiles at the designated disposal facilities.
- Post-construction seeding will be monitored on a weekly basis and watered as necessary. Once established erosion control features will be removed.
- The draft Final Report will be issued to USEPA within 45 days of construction completion.

8.0 REFERENCES

- GHD. 2017. Confirmation Investigation Report for Site 108 – Tonawanda Coke Corporation. Prepared by GHD, Buffalo, New York. Revised March 17, 2017.
https://www.dec.ny.gov/docs/remediation_hudson_pdf/tc2.pdf
- Neu-Velle. 2019. Site 108 Remediation Activities Summary Report. Prepared by Neu-Velle. March 2019.
- Parsons. 2018. Interim Measures Work Plan Tonawanda Coke Corporation Site 108. Prepared by Parsons for Honeywell International. December 3, 2018.

FIGURES



FIGURE 1

Honeywell TONAWANDA COKE CORPORATION
 SITE 108 - 3800 RIVER RD
 TONAWANDA, NEW YORK

SITE LOCATION MAP

PARSONS
 301 PLANFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

FILE NAME: P:\HONEYWELL -SYRA\551470 - TONAWANDA COKE SHT -108\10.0 TECHNICAL CATEGORIES\10.6 CAD\TANK REMOVAL\451470_TC_NO-LABELS.DWG
PLOT DATE: 8/19/2019 9:11 PM PLOTTED BY: GOLDTRWANT, JAMES



SCALE: 1"=120'

FIGURE 2

Honeywell

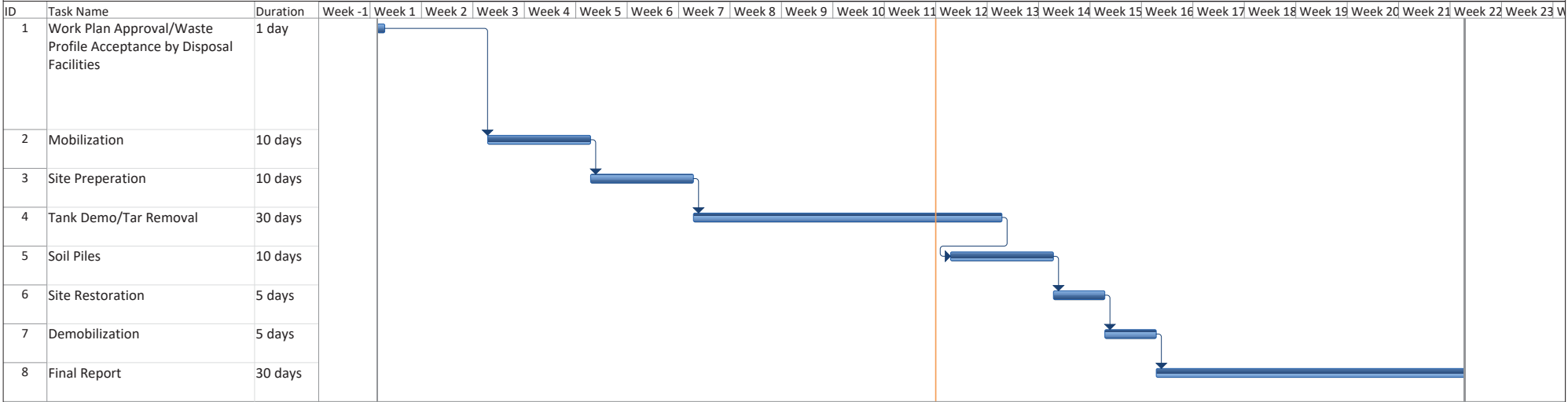
TONAWANDA COKE CORPORATION
SITE 108 - 3800 RIVER RD
TONAWANDA, NEW YORK

SITE OVERVIEW

PARSONS

301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 • 315-451-9560

**Figure 3
Tonawanda Coke Site 108 Tank Demolition Schedule**



Project: Tank Demolition Schedul
Date: Sun 8/18/19

Task		Project Summary		Inactive Milestone		Manual Summary Rollup		Deadline	
Split		External Tasks		Inactive Summary		Manual Summary		Progress	
Milestone		External Milestone		Manual Task		Start-only			
Summary		Inactive Task		Duration-only		Finish-only			

TABLES

**TABLE 1
COAL TAR SAMPLE RESULTS**

Honeywell - Tonawanda Coke Site 108 Tank Tar Data		Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	TANK 1 TANK 1-09152016	TANK 1 TANK 1-04112019 480-151896-4	TANK 2 TANK 2-09152016	TANK 3 TANK 3-09152016	TANK 3 TANK 3-04112019 480-151896-5	TANK 1 Tank 1 TAR JC89622-1	TANK 3 Tank 3 TAR JC89622-2
CAS NO.	COMPOUND	UNITS:	9/15/2016	4/11/2019	9/15/2016	9/15/2016	4/11/2019	SOLID 6/6/2019	SOLID 6/6/2019
	VOLATILES								
71-55-6	1,1,1-Trichloroethane (TCA)	mg/kg		10 U			5 U		
79-34-5	1,1,2,2-Tetrachloroethane	mg/kg		10 U			5 U		
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	mg/kg		10 U			5 U		
79-00-5	1,1,2-Trichloroethane	mg/kg		10 U			5 U		
75-34-3	1,1-Dichloroethane	mg/kg		10 U			5 U		
75-35-4	1,1-Dichloroethene	mg/kg		10 U			5 U		
120-82-1	1,2,4-Trichlorobenzene	mg/kg		10 U			5 U		
96-12-8	1,2-Dibromo-3-Chloropropane	mg/kg		10 U			5 U		
106-93-4	1,2-Dibromoethane	mg/kg		10 U			5 U		
95-50-1	1,2-Dichlorobenzene	mg/kg		10 U			5 U		
107-06-2	1,2-Dichloroethane	mg/kg		10 U			5 U		
78-87-5	1,2-Dichloropropane	mg/kg		10 U			5 U		
541-73-1	1,3-Dichlorobenzene	mg/kg		10 U			5 U		
106-46-7	1,4-Dichlorobenzene	mg/kg		10 U			5 U		
591-78-6	2-Hexanone	mg/kg		50 U			25 U		
67-64-1	Acetone	mg/kg		50 U			25 U		
71-43-2	Benzene	mg/kg		120			12		
75-27-4	Bromodichloromethane	mg/kg		10 U			5 U		
75-25-2	Bromoform	mg/kg		10 U			5 U		
74-83-9	Bromomethane	mg/kg		10 U			5 U		
75-15-0	Carbon Disulfide	mg/kg		10 U			5 U		
56-23-5	Carbon Tetrachloride	mg/kg		10 U			5 U		
108-90-7	Chlorobenzene	mg/kg		10 U			5 U		
75-00-3	Chloroethane	mg/kg		10 U			5 U		
67-66-3	Chloroform	mg/kg		10 U			5 U		
74-87-3	Chloromethane	mg/kg		10 U			5 U		
156-59-2	Cis-1,2-Dichloroethylene	mg/kg		10 U			5 U		
10061-01-5	Cis-1,3-Dichloropropene	mg/kg		10 U			5 U		
110-82-7	Cyclohexane	mg/kg		10 U			5 U		
124-48-1	Dibromochloromethane	mg/kg		10 U			5 U		
75-71-8	Dichlorodifluoromethane	mg/kg		10 U			5 U		
100-41-4	Ethylbenzene	mg/kg		10 U			5 U		
98-82-8	Isopropylbenzene (Cumene)	mg/kg		10 U			5 U		
79-20-9	Methyl Acetate	mg/kg		50 U			25 U		
78-93-3	Methyl Ethyl Ketone (2-Butanone)	mg/kg		50 U			25 U		
108-10-1	Methyl Isobutyl Ketone	mg/kg		50 U			25 U		
108-87-2	Methylcyclohexane	mg/kg		10 U			5 U		
75-09-2	Methylene Chloride	mg/kg		10 U			5 U		
100-42-5	Styrene	mg/kg		7.8 J			1.6 J		
1634-04-4	Tert-Butyl Methyl Ether	mg/kg		10 U			5 U		
127-18-4	Tetrachloroethylene (PCE)	mg/kg		10 U			5 U		
108-88-3	Toluene	mg/kg		64			6.2		
156-60-5	Trans-1,2-Dichloroethene	mg/kg		10 U			5 U		
10061-02-6	Trans-1,3-Dichloropropene	mg/kg		10 U			5 U		
79-01-6	Trichloroethylene (TCE)	mg/kg		10 U			5 U		
75-69-4	Trichlorofluoromethane	mg/kg		10 U			5 U		
75-01-4	Vinyl Chloride	mg/kg		10 U			5 U		
1330-20-7	Xylenes	mg/kg		41			4.2 J		

**TABLE 1
COAL TAR SAMPLE RESULTS**

Honeywell - Tonawanda Coke Site 108 Tank Tar Data		Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	TANK 1 TANK 1-09152016	TANK 1 TANK 1-04112019 480-151896-4 - 480-151896-1 WASTE 4/11/2019	TANK 2 TANK 2-09152016	TANK 3 TANK 3-09152016	TANK 3 TANK 3-04112019 480-151896-5 - 480-151896-1 SOLID 4/11/2019	TANK 1 Tank 1 TAR JC89622-1 - SOLID 6/6/2019	TANK 3 Tank 3 TAR JC89622-2 - SOLID 6/6/2019
CAS NO.	COMPOUND	UNITS:							
	SEMIVOLATILES								
39638-32-9	2,2-Oxybis(2-Chloropropane)	mg/kg	130 U	360 U.*	1.8 U	89 U	850 U.*		
95-95-4	2,4,5-Trichlorophenol	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
88-06-2	2,4,6-Trichlorophenol	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
120-83-2	2,4-Dichlorophenol	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
105-67-9	2,4-Dimethylphenol	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
51-28-5	2,4-Dinitrophenol	mg/kg	250 U	3600 U	3.5 U	170 U	8300 U		
121-14-2	2,4-Dinitrotoluene	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
606-20-2	2,6-Dinitrotoluene	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
91-58-7	2-Chloronaphthalene	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
95-57-8	2-Chlorophenol	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
91-57-6	2-Methylnaphthalene	mg/kg	6400	4700	12	620	700 J		
95-48-7	2-Methylphenol (O-Cresol)	mg/kg	320	250 J	8.5	89 U	850 U		
88-74-4	2-Nitroaniline	mg/kg	250 U	710 U.*	3.5 U	170 U	1700 U.*		
88-75-5	2-Nitrophenol	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
91-94-1	3,3'-Dichlorobenzidine	mg/kg	130 U	710 U	3.5 U	1700 U	1700 U		
108-39-4	3-Methylphenol	mg/kg		900			220 J		
99-09-2	3-Nitroaniline	mg/kg	250 U	710 U	3.5 U	170 U	1700 U		
534-52-1	4,6-Dinitro-2-Methylphenol	mg/kg	250 U	710 U.*	3.5 U	170 U	1700 U.*		
101-55-3	4-Bromophenyl Phenyl Ether	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
59-50-7	4-Chloro-3-Methylphenol	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
106-47-8	4-Chloroaniline	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
7005-72-3	4-Chlorophenyl Phenyl Ether	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
106-44-5	4-Methylphenol (P-Cresol)	mg/kg	990	900	28	170 U	220 J		
100-01-6	4-Nitroaniline	mg/kg	250 U	710 U	3.5 U	170 U	1700 U		
100-02-7	4-Nitrophenol	mg/kg	250 U	710 U	3.5 U	170 U	1700 U		
83-32-9	Acenaphthene	mg/kg	880	870	1.8 U	160	190 J		
208-96-8	Acenaphthylene	mg/kg	4400	3500	15	770	1000		
98-86-2	Acetophenone	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
120-12-7	Anthracene	mg/kg	8300	3900	1.4	1300	1500		
1912-24-9	Atrazine	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
100-52-7	Benzaldehyde	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
56-55-3	Benzo(A)Anthracene	mg/kg	14000	6900	26	1200	1300		
50-32-8	Benzo(A)Pyrene	mg/kg	8800	6000	29	970	1000		
205-99-2	Benzo(B)Fluoranthene	mg/kg	9400	8000	38	1200	1100		
191-24-2	Benzo(G,H,I)Perylene	mg/kg	4800	4100	20	450	620 J		
207-08-9	Benzo(K)Fluoranthene	mg/kg	7400	3500	15	520	710 J		
85-68-7	Benzyl Butyl Phthalate	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
92-52-4	Biphenyl (Diphenyl)	mg/kg	1300	1100	3.5	170	240 J		
111-91-1	Bis(2-Chloroethoxy) Methane	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
111-44-4	Bis(2-Chloroethyl) Ether	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
117-81-7	Bis(2-Ethylhexyl) Phthalate	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
105-60-2	Caprolactam	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
86-74-8	Carbazole	mg/kg	5400	3600	29	800	1000		
218-01-9	Chrysene	mg/kg	49000	8000	1100	1100	1200		
53-70-3	Dibenz(A,H)Anthracene	mg/kg	130 U	1200	1.8 U	89 U	850 U		
132-64-9	Dibenzofuran	mg/kg	5600	4400	14	1000	1100		
84-66-2	Diethyl Phthalate	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
131-11-3	Dimethyl Phthalate	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
84-74-2	Di-N-Butyl Phthalate	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
117-84-0	Di-N-Octylphthalate	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
206-44-0	Fluoranthene	mg/kg	21000	17000	81	3900	3500		
86-73-7	Fluorene	mg/kg	9400	7600	23	1700	1800		
118-74-1	Hexachlorobenzene	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
87-68-3	Hexachlorobutadiene	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
77-47-4	Hexachlorocyclopentadiene	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
67-72-1	Hexachloroethane	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
193-39-5	Indeno(1,2,3-C,D)Pyrene	mg/kg	4600	3800	18	450	570 J		
78-59-1	Isophorone	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
91-20-3	Naphthalene	mg/kg	56000	49000	160	5900	5600		
98-95-3	Nitrobenzene	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
621-64-7	N-Nitrosodi-N-Propylamine	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
86-30-6	N-Nitrosodiphenylamine	mg/kg	130 U	360 U	1.8 U	89 U	850 U		
87-86-5	Pentachlorophenol	mg/kg	250 U	710 U	3.5 U	170 U	1700 U		
85-01-8	Phenanthrene	mg/kg	30000	26000	100	5900	6600		
108-95-2	Phenol	mg/kg	1100	950	79	89 U	850 U		

**TABLE 1
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			TCLP Criteria	9/15/2016	9/15/2016	9/15/2016	9/15/2016	6/6/2019	6/6/2019
CAS NO.	COMPOUND	UNITS:							
129-00-0	Pyrene	mg/kg	15000	14000	60	2700	2800		
110-86-1	Pyridine	mg/kg		710 U			1700 U		

**TABLE 1
COAL TAR SAMPLE RESULTS**

Honeywell - Tonawanda Coke Site 108 Tank Tar Data		Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	TANK 1 TANK 1-09152016	TANK 1 TANK 1-04112019 480-151896-4	TANK 2 TANK 2-09152016	TANK 3 TANK 3-09152016	TANK 3 TANK 3-04112019 480-151896-5	TANK 1 Tank 1 TAR JC89622-1	TANK 3 Tank 3 TAR JC89622-2
		TCLP Criteria	9/15/2016	480-151896-1 WASTE 4/11/2019	9/15/2016	9/15/2016	480-151896-1 SOLID 4/11/2019	SOLID 6/6/2019	SOLID 6/6/2019
CAS NO.	COMPOUND	UNITS:							
PESTICIDES									
12789-03-6	Chlordane (Technical)	mg/kg		91 U			140 U		
72-20-8	Endrin	mg/kg		9.1 U			14 U		
58-89-9	Gamma Bhc (Lindane)	mg/kg		9.1 U			14 U		
76-44-8	Heptachlor	mg/kg		9.1 U			14 U		
1024-57-3	Heptachlor Epoxide	mg/kg		9.1 U			14 U		
72-43-5	Methoxychlor	mg/kg		9.1 U			14 U		
8001-35-2	Toxaphene	mg/kg		91 U			140 U		
PCBS									
12674-11-2	PCB-1016 (Aroclor 1016)	mg/kg		3.8 U			6.7 U		
11104-28-2	PCB-1221 (Aroclor 1221)	mg/kg		3.8 U			6.7 U		
11141-16-5	PCB-1232 (Aroclor 1232)	mg/kg		3.8 U			6.7 U		
53469-21-9	PCB-1242 (Aroclor 1242)	mg/kg		3.8 U			6.7 U		
12672-29-6	PCB-1248 (Aroclor 1248)	mg/kg		3.8 U			6.7 U		
11097-69-1	PCB-1254 (Aroclor 1254)	mg/kg		3.8 U			6.7 U		
11096-82-5	PCB-1260 (Aroclor 1260)	mg/kg		3.8 U			6.7 U		
HERBICIDES									
93-72-1	Silvex (2,4,5-TP)	mg/kg		0.58 U			0.59 U		
94-75-7	2,4-D (Dichlorophenoxyacetic Acid)	mg/kg		2.3 U			2.4 U		
93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	mg/kg		0.58 U			0.59 U		
INORGANICS									
7429-90-5	Aluminum	mg/kg		637			4.9 J		
7440-36-0	Antimony	mg/kg		15.6 U			15.4 U		
7440-38-2	Arsenic	mg/kg		4.2			2.1 U		
7440-39-3	Barium	mg/kg		6.4			0.51 U		
7440-41-7	Beryllium	mg/kg		0.063 J			0.21 U		
7440-43-9	Cadmium	mg/kg		2.3			0.21 U		
7440-70-2	Calcium	mg/kg		377 B			15.7 J,B		
7440-47-3	Chromium, Total	mg/kg		1.6 B			0.49 J,B		
7440-48-4	Cobalt	mg/kg		0.48 J			0.51 U		
7440-50-8	Copper	mg/kg		3			0.34 J		
7439-89-6	Iron	mg/kg		2530			15		
7439-92-1	Lead	mg/kg		73.5			1 U		
7439-95-4	Magnesium	mg/kg		99 B			2.8 J,B		
7439-96-5	Manganese	mg/kg		9.4 B			0.14 J,B		
7439-97-6	Mercury	mg/kg		0.14			0.02 U		
7440-02-0	Nickel	mg/kg		1.4 J			5.1		
7440-09-5	Potassium	mg/kg		81.8			30.8 U		
7782-49-2	Selenium	mg/kg		2.7 J			4.1 U		
7440-22-4	Silver	mg/kg		0.62 U			0.62 U		
7440-23-5	Sodium	mg/kg		184			47.4 J,B,^		
7440-28-0	Thallium	mg/kg		4.1 J			6.2 U		
7440-62-2	Vanadium	mg/kg		1.4			29.8		
7440-66-6	Zinc	mg/kg		106			2.1 U		
OTHER									
FLASHPT	Flash Point	deg F		> 176			> 176		
PH	pH	S.U.		7.7 HF			6.1 HF		
TEMP	Temperature for sample or purge water	deg C		21.1 HF			21.4 HF		
WASTE CHARACTERISTICS									
REAC-CN	Cyanide, Reactive	mg/kg		10 U			10 U		
REAC-S	Sulfide, Reactive	mg/kg		10 U			10 U		
TX	TOTAL HALIDES (TX)	mg/kg		1130			86 J		
VOLATILES									
75-34-3	1,1-Dichloroethane	0.5 mg/L					0.05 U		0.0050 U
75-35-4	1,1-Dichloroethene	0.7 mg/L					0.05 U		0.0050 U
106-46-7	1,4-Dichlorobenzene	7.5 mg/L					0.05 U		0.0050 U
71-43-2	Benzene	0.5 mg/L					7.74		0.91
56-23-5	Carbon Tetrachloride	0.5 mg/L					0.05 U		0.0050 U
108-90-7	Chlorobenzene	100 mg/L					0.05 U		0.0050 U
67-66-3	Chloroform	6 mg/L					0.05 U		0.0050 U
78-93-3	Methyl Ethyl Ketone (2-Butanone)	200 mg/L					1.0 U		0.10 U
127-18-4	Tetrachloroethylene (PCE)	0.7 mg/L					0.05 U		0.0050 U
79-01-6	Trichloroethylene (TCE)	0.5 mg/L					0.05 U		0.0050 U
75-01-4	Vinyl Chloride	0.2 mg/L					0.05 U		0.0050 U
SEMIVOLATILES									
95-95-4	2,4,5-Trichlorophenol	400 mg/L					0.050 U		0.050 U

**TABLE 1
COAL TAR SAMPLE RESULTS**

Honeywell - Tonawanda Coke Site 108 Tank Tar Data		Location ID: Sample ID: Lab Sample Id: Depth: Source: SDG: Matrix: Sampled: Validated:	TANK 1 TANK 1-09152016	TANK 1 TANK 1-04112019 480-151896-4 480-151896-1 WASTE 4/11/2019	TANK 2 TANK 2-09152016	TANK 3 TANK 3-09152016	TANK 3 TANK 3-04112019 480-151896-5 480-151896-1 SOLID 4/11/2019	TANK 1 Tank 1 TAR JC89622-1 SOLID 6/6/2019	TANK 3 Tank 3 TAR JC89622-2 SOLID 6/6/2019
CAS NO.	COMPOUND	TCCLP Criteria	UNITS:						
88-06-2	2,4,6-Trichlorophenol	2	mg/L					0.050 U	0.050 U
121-14-2	2,4-Dinitrotoluene	0.13	mg/L					0.020 U	0.020 U
95-48-7	2-Methylphenol (O-Cresol)	200	mg/L					0.738	0.161
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol (P-Cresol)							0.261	0.374
118-74-1	Hexachlorobenzene	0.13	mg/L					0.020 U	0.020 U
87-68-3	Hexachlorobutadiene	0.5	mg/L					0.010 U	0.010 U
67-72-1	Hexachloroethane	3	mg/L					0.050 U	0.050 U
98-95-3	Nitrobenzene	2	mg/L					0.020 U	0.020 U
87-86-5	Pentachlorophenol	100	mg/L					0.10 U	0.10 U
110-86-1	Pyridine	5	mg/L					0.020 U	0.020 U
PESTICIDES									
12789-03-6	Chlordane (Technical)	0.03	mg/L					0.0033 U	0.0033 U
72-20-8	Endrin	0.02	mg/L					0.000067 U	0.000067 U
58-89-9	Gamma Bhc (Lindane)	0.4	mg/L					0.000067 U	0.000067 U
76-44-8	Heptachlor	0.008	mg/L					0.000067 U	0.000067 U
72-43-5	Methoxychlor	10	mg/L					0.00013 U	0.00013 U
8001-35-2	Toxaphene	0.5	mg/L					0.0017 U	0.0017 U
HERBICIDES									
93-72-1	Silvex (2,4,5-TP)	1	mg/L					0.0012 U	0.0012 U
94-75-7	2,4-D (Dichlorophenoxyacetic Acid)	10	mg/L					0.0042 U	0.0042 U
INORGANICS									
7440-38-2	Arsenic	5	mg/L					0.5 U	0.5 U
7440-39-3	Barium	100	mg/L					1.0 U	1.0 U
7440-43-9	Cadmium	1	mg/L					0.02 U	0.02 U
7440-47-3	Chromium, Total	5	mg/L					0.05 U	0.05 U
7439-92-1	Lead	5	mg/L					0.5 U	0.5 U
7439-97-6	Mercury	0.2	mg/L					0.0002 U	0.0002 U
7782-49-2	Selenium	1	mg/L					0.5 U	0.5 U
7440-22-4	Silver	5	mg/L					0.05 U	0.05 U

TABLE 2
TANK 2 WATER SAMPLE RESULTS

Honeywell - Tonawanda Coke Site 108 Tank Waste Data April 2019 SDG: 480-151896-1		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	TANK 2 TANK 2-04112019 480-151896-3 480-151896-1 WATER 4/11/2019
CAS NO.	COMPOUND	UNITS:	
	VOLATILES		
71-55-6	1,1,1-Trichloroethane (TCA)	mg/L	0.005 U
79-34-5	1,1,2,2-Tetrachloroethane	mg/L	0.005 U
79-00-5	1,1,2-Trichloroethane	mg/L	0.005 U
75-34-3	1,1-Dichloroethane	mg/L	0.005 U
75-35-4	1,1-Dichloroethene	mg/L	0.005 U
120-82-1	1,2,4-Trichlorobenzene	mg/L	0.0095 U
95-50-1	1,2-Dichlorobenzene	mg/L	0.005 U
107-06-2	1,2-Dichloroethane	mg/L	0.005 U
78-87-5	1,2-Dichloropropane	mg/L	0.005 U
541-73-1	1,3-Dichlorobenzene	mg/L	0.005 U
106-46-7	1,4-Dichlorobenzene	mg/L	0.005 U
110-75-8	2-Chloroethyl Vinyl Ether	mg/L	0.025 U
107-02-8	Acrolein	mg/L	0.1 U
107-13-1	Acrylonitrile	mg/L	0.05 U
71-43-2	Benzene	mg/L	0.0038 J
75-27-4	Bromodichloromethane	mg/L	0.005 U
75-25-2	Bromoform	mg/L	0.005 U
74-83-9	Bromomethane	mg/L	0.005 U
56-23-5	Carbon Tetrachloride	mg/L	0.005 U
108-90-7	Chlorobenzene	mg/L	0.005 U
75-00-3	Chloroethane	mg/L	0.005 U
67-66-3	Chloroform	mg/L	0.005 U
74-87-3	Chloromethane	mg/L	0.005 U
10061-01-5	Cis-1,3-Dichloropropene	mg/L	0.005 U
124-48-1	Dibromochloromethane	mg/L	0.005 U
540-59-0	Dichloroethylenes	mg/L	0.01 U
100-41-4	Ethylbenzene	mg/L	0.005 U
75-09-2	Methylene Chloride	mg/L	0.005 U
127-18-4	Tetrachloroethylene (PCE)	mg/L	0.005 U
108-88-3	Toluene	mg/L	0.0016 J
156-60-5	Trans-1,2-Dichloroethene	mg/L	0.005 U
10061-02-6	Trans-1,3-Dichloropropene	mg/L	0.005 U
79-01-6	Trichloroethylene (TCE)	mg/L	0.005 U
75-01-4	Vinyl Chloride	mg/L	0.005 U
179601-23-1	m-Xylene & p-Xylene	mg/L	0.010 U
95-47-6	o-Xylene	mg/L	0.005 U
	SEMIVOLATILES		
88-06-2	2,4,6-Trichlorophenol	mg/L	0.0048 U
120-83-2	2,4-Dichlorophenol	mg/L	0.0048 U
105-67-9	2,4-Dimethylphenol	mg/L	0.0018 J
51-28-5	2,4-Dinitrophenol	mg/L	0.0095 U
121-14-2	2,4-Dinitrotoluene	mg/L	0.0095 U
606-20-2	2,6-Dinitrotoluene	mg/L	0.0048 U

TABLE 2
TANK 2 WATER SAMPLE RESULTS

Honeywell - Tonawanda Coke Site 108 Tank Waste Data April 2019 SDG: 480-151896-1		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	TANK 2 TANK 2-04112019 480-151896-3 480-151896-1 WATER 4/11/2019
CAS NO.	COMPOUND	UNITS:	
91-58-7	2-Chloronaphthalene	mg/L	0.0048 U
95-57-8	2-Chlorophenol	mg/L	0.0048 U
88-75-5	2-Nitrophenol	mg/L	0.0048 U
91-94-1	3,3'-Dichlorobenzidine	mg/L	0.0048 U
534-52-1	4,6-Dinitro-2-Methylphenol	mg/L	0.0095 U
101-55-3	4-Bromophenyl Phenyl Ether	mg/L	0.0048 U
59-50-7	4-Chloro-3-Methylphenol	mg/L	0.0048 U
7005-72-3	4-Chlorophenyl Phenyl Ether	mg/L	0.0048 U
100-02-7	4-Nitrophenol	mg/L	0.014 U
83-32-9	Acenaphthene	mg/L	0.0048 U
208-96-8	Acenaphthylene	mg/L	0.0048 U
120-12-7	Anthracene	mg/L	0.0048 U
56-55-3	Benzo(A)Anthracene	mg/L	0.0048 U
50-32-8	Benzo(A)Pyrene	mg/L	0.0048 U
205-99-2	Benzo(B)Fluoranthene	mg/L	0.0048 U
191-24-2	Benzo(G,H,I)Perylene	mg/L	0.0048 U
207-08-9	Benzo(K)Fluoranthene	mg/L	0.0048 U
85-68-7	Benzyl Butyl Phthalate	mg/L	0.0048 U
111-91-1	Bis(2-Chloroethoxy) Methane	mg/L	0.0048 U
111-44-4	Bis(2-Chloroethyl) Ether	mg/L	0.0048 U
108-60-1	Bis(2-Chloroisopropyl) Ether	mg/L	0.0048 U
117-81-7	Bis(2-Ethylhexyl) Phthalate	mg/L	0.0095 U
218-01-9	Chrysene	mg/L	0.0048 U
53-70-3	Dibenz(A,H)Anthracene	mg/L	0.0048 U
84-66-2	Diethyl Phthalate	mg/L	0.0048 U
131-11-3	Dimethyl Phthalate	mg/L	0.0048 U
84-74-2	Di-N-Butyl Phthalate	mg/L	0.0048 U
117-84-0	Di-N-Octylphthalate	mg/L	0.0048 U
206-44-0	Fluoranthene	mg/L	0.0017 J
86-73-7	Fluorene	mg/L	0.001 J
118-74-1	Hexachlorobenzene	mg/L	0.0048 U
87-68-3	Hexachlorobutadiene	mg/L	0.0048 U
77-47-4	Hexachlorocyclopentadiene	mg/L	0.0095 U
67-72-1	Hexachloroethane	mg/L	0.0048 U
193-39-5	Indeno(1,2,3-C,D)Pyrene	mg/L	0.0048 U
78-59-1	Isophorone	mg/L	0.0048 U
91-20-3	Naphthalene	mg/L	0.0048 U
98-95-3	Nitrobenzene	mg/L	0.0048 U
62-75-9	N-Nitrosodimethylamine	mg/L	0.0095 U
621-64-7	N-Nitrosodi-N-Propylamine	mg/L	0.0048 U
86-30-6	N-Nitrosodiphenylamine	mg/L	0.0048 U
87-86-5	Pentachlorophenol	mg/L	0.0095 U
85-01-8	Phenanthrene	mg/L	0.0048 U
108-95-2	Phenol	mg/L	0.013

TABLE 2
TANK 2 WATER SAMPLE RESULTS

Honeywell - Tonawanda Coke Site 108 Tank Waste Data April 2019 SDG: 480-151896-1		Location ID: Sample ID: Lab Sample Id: Source: SDG: Matrix: Sampled: Validated:	TANK 2 TANK 2-04112019 480-151896-3 480-151896-1 WATER 4/11/2019
CAS NO.	COMPOUND	UNITS:	
129-00-0	Pyrene	mg/L	0.0048 U
	PCBS		
12674-11-2	PCB-1016 (Aroclor 1016)	mg/L	0.000057 U
11104-28-2	PCB-1221 (Aroclor 1221)	mg/L	0.000057 U
11141-16-5	PCB-1232 (Aroclor 1232)	mg/L	0.000057 U
53469-21-9	PCB-1242 (Aroclor 1242)	mg/L	0.000057 U
12672-29-6	PCB-1248 (Aroclor 1248)	mg/L	0.000057 U
11097-69-1	PCB-1254 (Aroclor 1254)	mg/L	0.000057 U
11096-82-5	PCB-1260 (Aroclor 1260)	mg/L	0.000057 U
37324-23-5	PCB-1262 (Aroclor 1262)	mg/L	0.000057 U
11100-14-4	PCB-1268 (Aroclor 1268)	mg/L	0.000057 U
1336-36-3	Polychlorinated Biphenyl (PCBs)	mg/L	0.000057 U
	INORGANICS		
7440-36-0	Antimony	mg/L	0.02 U
7440-38-2	Arsenic	mg/L	0.015 U
7440-41-7	Beryllium	mg/L	0.002 U
7440-43-9	Cadmium	mg/L	0.002 U
7440-47-3	Chromium, Total	mg/L	0.004 U
7440-50-8	Copper	mg/L	0.01 U
7439-92-1	Lead	mg/L	0.01 U
7439-97-6	Mercury	mg/L	0.0002 U
7440-02-0	Nickel	mg/L	0.0014 J
7782-49-2	Selenium	mg/L	0.025 U
7440-22-4	Silver	mg/L	0.006 U
7440-28-0	Thallium	mg/L	0.02 U
7440-66-6	Zinc	mg/L	0.0024 J
57-12-5	Cyanide	mg/L	0.008 J,*
	OTHER		
122-66-7	1,2-Diphenylhydrazine	mg/L	0.0095 U
92-87-5	Benzidine	mg/L	0.076 U

**TABLE 3
BERM WATER ANALYTICAL**

ANALYTE	UNITS	480-145167-1	480-145712-1	480-145712-2	480-145167-2	480-145712-3	480-145712-4	480-145712-5
		EASTBERM 11/13/2018	EASTBERM-1 11/26/2018	EASTBERM-2 11/26/2018	WESTBERM 11/13/2018	WESTBERM1 11/26/2018	WESTBERM-2 11/26/2018	WESTBERM-3 11/26/2018
1,4-Dichlorobenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	2000 U
2,2'-oxybis[1-chloropropane]	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
2,4,6-Trichlorophenol	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
2,4-Dichlorophenol	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
2,4-Dimethylphenol	ug/L	10 U	5.0 U	5.0 U	10 U	2.0 J	5.0 U	1000 U
2,4-Dinitrophenol	ug/L	20 U	10 U	10 U	20 U	10 U	10 U	2000 U
2,4-Dinitrotoluene	ug/L	2.0 U	10 U	10 U	2.0 U	10 U	10 U	2000 U
2,6-Dinitrotoluene	ug/L	2.0 U	5.0 U	5.0 U	2.0 U	5.0 U	5.0 U	1000 U
2-Chloronaphthalene	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
2-Chlorophenol	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
2-Nitrophenol	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
3,3'-Dichlorobenzidine	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
4,6-Dinitro-2-methylphenol	ug/L	20 U	10 U	10 U	20 U	10 U	10 U	2000 U
4-Bromophenyl phenyl ether	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
4-Chloro-3-methylphenol	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
4-Chlorophenyl phenyl ether	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
4-Nitrophenol	ug/L	20 U	15 U	15 U	20 U	15 U	15 U	3000 U
Acenaphthene	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Acenaphthylene	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Anthracene	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Benzidine	ug/L	10 U	80 U	80 U	10 U	80 U	80 U	16000 U
Benzo[a]anthracene	ug/L	1.0 U	5.0 U	5.0 U	1.0 U	1.1 J	5.0 U	250 J
Benzo[a]pyrene	ug/L	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1000 U
Benzo[b]fluoranthene	ug/L	2.0 U	5.0 U	5.0 U	2.0 U	1.4 J	5.0 U	1000 U
Benzo[g,h,i]perylene	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Benzo[k]fluoranthene	ug/L	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1000 U
Bis(2-chloroethoxy)methane	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Bis(2-chloroethyl)ether	ug/L	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1000 U
Bis(2-ethylhexyl) phthalate	ug/L	2.0 U	10 U	10 U	2.0 U	10 U	10 U	2000 U
Butyl benzyl phthalate	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Chrysene	ug/L	2.0 U	5.0 U	5.0 U	2.0 U	5.0 U	5.0 U	250 J
Dibenz(a,h)anthracene	ug/L	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1000 U
Diethyl phthalate	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Dimethyl phthalate	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Di-n-butyl phthalate	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Di-n-octyl phthalate	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Fluoranthene	ug/L	10 U	5.0 U	5.0 U	10 U	4.6 J	5.0 U	700 J
Fluorene	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	250 J
Hexachlorobenzene	ug/L	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1000 U
Hexachlorobutadiene	ug/L	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1000 U
Hexachlorocyclopentadiene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	2000 U
Hexachloroethane	ug/L	2.0 U	5.0 U	5.0 U	2.0 U	5.0 U	5.0 U	1000 U

**TABLE 3
BERM WATER ANALYTICAL**

ANALYTE	UNITS	480-145167-1	480-145712-1	480-145712-2	480-145167-2	480-145712-3	480-145712-4	480-145712-5
		EASTBERM 11/13/2018	EASTBERM-1 11/26/2018	EASTBERM-2 11/26/2018	WESTBERM 11/13/2018	WESTBERM1 11/26/2018	WESTBERM-2 11/26/2018	WESTBERM-3 11/26/2018
Indeno[1,2,3-cd]pyrene	ug/L	2.0 U	5.0 U	5.0 U	2.0 U	5.0 U	5.0 U	1000 U
Isophorone	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Naphthalene	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	960 J
Nitrobenzene	ug/L	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1000 U
N-Nitrosodimethylamine	ug/L	10 U *	10 U	10 U	10 U *	10 U	10 U	2000 U
N-Nitrosodi-n-propylamine	ug/L	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1000 U
N-Nitrosodiphenylamine	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Pentachlorophenol	ug/L	20 U	10 U	10 U	20 U	10 U	10 U	2000 U
Phenanthrene	ug/L	10 U	5.0 U	5.0 U	0.67 J	5.0 U	1.5 J	1100
Phenol	ug/L	10 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	1000 U
Pyrene	ug/L	10 U	5.0 U	5.0 U	10 U	3.6 J	5.0 U	550 J
METALS								
Antimony	mg/L	0.010 U	0.020 U	NA	0.010 U	0.020 U	0.020 U	0.020 U
Arsenic	mg/L	0.005 U	0.015 U	NA	0.005 U	0.015 U	0.015 U	0.015 U
Beryllium	mg/L	0.002 U	0.0020 U	NA	0.002 U	0.0020 U	0.0020 U	0.0020 U
Cadmium	mg/L	0.005 U	0.0020 U	NA	0.005 U	0.0020 U	0.0020 U	0.0020 U
Chromium	mg/L	0.010 U	0.0053	NA	0.010 U	0.0040 U	0.0040 U	0.0018 J
Copper	mg/L	0.0096 J	0.0033 J	NA	0.025 U	0.010 U	0.0023 J	0.0028 J
Lead	mg/L	0.005 U	0.0033 J	NA	0.005 U	0.010 U	0.010 U	0.010 U
Mercury	mg/L	0.0002 U	0.00020 U	NA	0.0002 U	0.00020 U	0.00020 U	0.00020 U
Nickel	mg/L	0.040 U	0.0030 J	NA	0.040 U	0.0016 J	0.0018 J	0.0029 J
Selenium	mg/L	0.005 U	0.025 U	NA	0.005 U	0.025 U	0.025 U	0.025 U
Silver	mg/L	0.010 U	0.0060 U	NA	0.010 U	0.0060 U	0.0060 U	0.0060 U
Thallium	mg/L	0.010 U	0.020 U	NA	0.010 U	0.020 U	0.020 U	0.020 U
Zinc	mg/L	0.0186 J	0.018 B	NA	0.0097 J	0.013 B	0.015 B	0.017 B
GENERAL CHEMISTRY								
Biochemical Oxygen Demand	mg/L		3.8	NA		3.6 b	2.8	2.6
Cyanide, Total	mg/L	0.0035 J	0.0064 J	NA	0.011	0.010 U	0.011	0.011
Oil & Grease	mg/L		3.6 J	4.3 J B		8.7 B	2.4 J B	2.4 J B
Ammonia	mg/L		0.090 B	NA		2.5	0.30 B	0.37 B
Total Phosphorus	mg/L		0.0055 J	NA		0.013	0.010 U	0.011
Total Suspended Solids	mg/L		18.0	13.6		6.8	15.6	16.4

NOTES:

b: results was detected in the unseeded control blank

B: compound was found in the blank and sample

J: results is less than the RDL but greater than or equal to the MDL and the concentration is an approximate value

U: indicates the analyte was analyzed for but not detected

NA: insufficient volume was provided and the analysis was not completed

TABLE 4
VISCOSITY, DENSITY, and SPECIFIC GRAVITY DATA
(METHODOLOGY: ASTM D445, ASTM D1481, API RP40)

Project Name: TCC Area 108 Tanks
PTS File No: 49052
Client: Parsons
Report Date: 05/31/19

SAMPLE ID	MATRIX	TEMPERATURE, °F	SPECIFIC GRAVITY	DENSITY, g/cc	VISCOSITY	
					centistokes	centipoise
*Tank 1_04112019	DNAPL	70	1.3155	1.3152	*	*
		100	1.3112	1.3021	*	*
		130	1.3087	1.2904	*	*
*Tank 1_04112019	DNAPL	105	1.3015	1.3013	*	*
		150	1.2889	1.2799	*	*
		180	1.2634	1.2457	*	*
Tank 3_04112019	DNAPL	70	0.9800	0.9798	200000.00	195958.07
		100	0.9806	0.9738	3921.39	3818.54
		130	0.9706	0.9638	776.34	748.26
Tank 3_04112019	DNAPL	105	0.9722	0.9720	2664.37	2589.73
		150	0.9629	0.9562	336.70	321.94
		180	0.9594	0.9459	151.19	143.01

***Tank 1_04112019 coal tar was too thick that we couldn't get it flow through available viscosimeters.
(Only Density & Specific gravity measurements were done).**

INTERFACIAL / SURFACE TENSION DATA
(METHODOLOGY: DuNuoy Method - ASTM D971)

Project Name: TCC Area 108 Tanks
Project No:

PHASE PAIR		TEMPERATURE, °F	INTERFACIAL TENSION, Dynes/centimeter
SAMPLE ID / PHASE	SAMPLE ID / PHASE		
Houston_Tap Water	Air	74.0	71.1
Tank 3_04112019_DNAPL	Air	81.0	34.0
Houston_Tap Water	Tank 3_04112019_DNAPL	77.0	43.9

QUALITY CONTROL DATA

Date: 05/10/19
FLUID TYPE: Cannon® CVS S3
TEMPERATURE, °F: 70
DENSITY, MEASURED: 0.8616
DENSITY, PUBLISHED: 0.8615
RPD: 0.01
VISCOSITY, MEASURED: 4.50
VISCOSITY, PUBLISHED: 4.47
RPD: 0.59
CVS Lot #: 17301

CVS = Certified Viscosity Standard

TABLE 5
WATER /MOISTURE LOSS OF TAR SAND BY MASS
(Methodology: ASTM D 2216)

Project Name: TCC Area 108 Tanks
Project No:
PTS File No: 49052
Client: Parsons
Report Date: 05/31/19

SAMPLE ID.	Depth, ft	Temp °F	ANALYSIS DATE	ANALYSIS TIME	MATRIX	TARE WEIGHT, grams	WET SAMPLE + TARE WT., grams	DRY SAMPLE + TARE WT., grams	Moisture Loss by weight grams	MOISTURE CONTENT, % dry weight
Tank 1_04112019	N/A	105	20190507	1030	Coal Tar	76.13	125.94	125.38	0.56	1.1
	N/A	150	20190508	1000	Coal Tar	76.13	125.94	124.77	1.17	2.4
	N/A	180	20190514	1447	Coal Tar	76.13	125.94	122.65	3.29	7.1
Tank 3_04112019	N/A	105	20190507	1030	Coal Tar	75.45	138.94	138.78	0.21	0.3
	N/A	150	20190508	1000	Coal Tar	75.45	138.94	138.02	0.97	1.5
	N/A	180	20190514	1447	Coal Tar	75.45	138.94	134.70	4.29	7.2

APPENDIX A

PROJECT SAFETY, HEALTH AND ENVIRONMENTAL PLAN

**TONAWANDA COKE SITE 108
PROJECT SAFETY, HEALTH, AND
ENVIRONMENTAL PLAN
TONAWANDA, NEW YORK**

Prepared For:

Honeywell

301 Plainfield Road
Suite 330
Syracuse, New York 13212

Prepared By:

PARSONS

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Phone: (315) 451-9560
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REVIEWED AND APPROVED BY:

Project Manager:

_____ Date
Tom Abrams

Project Safety Manager:

_____ Date
Bill Moon

Senior Safety Specialist:

_____ Date
Susan Gould

June 2019

**TONAWANDA COKE SITE 108
PROJECT SAFETY, HEALTH, AND
ENVIRONMENTAL PLAN**

Project Key Personnel

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Client Project Management POC		Contact Information
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- ATTACHMENT H LEGAL COMPLIANCE REGISTER**
- ATTACHMENT I TRAINING MATRIX**

LIST OF ACRONYMS

AED	Automated External Defibrillator
AHA	Activity Hazard Analysis
BBO	Behavior Based Observation
CPR	Cardiopulmonary Resuscitation
CRZ	Contamination Reduction Zone
CSE	Contractor Safety Evaluation
EBS	Employee Based Safety
ERT	Emergency Response Team
ESHARP	Environment, Safety, Health and Risk Management Program
EZ	Exclusion Zone
ft.	Feet
GFCI	ground fault circuit interrupters
HAZWOPER	Hazardous Waste Operations and Emergency Response
IMA	Industrial Medical Associates
JSA	Job Safety Analysis
LHA	Labor Harmony Agreement
LOTO	Lockout/Tagout
MOC	Management of Change
MRO	Medical Review Officer
NYDOT	New York Department of Transportation
OM&M	Operation, Maintenance, and Monitoring
OSHA	Occupational Health and Safety Administration
PFD	Personal Flotation Device
PM	Project Manager
PPE	Personal Protective Equipment
PrM	Program Manager
PSHEP	Project Safety, Health, and Environmental Plan
PrSM	Program Safety Manager
RFP	Request for Proposal
SDS	Safety Data Sheets
SH&E	Safety, Health and Environment
SOW	Scope of Work
SSHEP	Subcontractor Safety, Health, and Environment Plan
SSO	Site Safety Officer
TCC	Tonawanda Coke Corporation
UV	Ultraviolet Radiation
USEPA	United States Environmental Protection Agency

SECTION 1

INTRODUCTION

This Project Safety, Health, and Environmental Plan (PSHEP) has been prepared for the Honeywell field operations at Tonawanda Coke Site 108 located at 3800 River Road, Tonawanda, New York. This PSHEP covers construction management for tank product removal and demolition of onsite aboveground tanks and is intended to be amended as needed to address subsequent site activities. Subcontractor construction activities will be covered by their own Subcontractor Safety, Health, and Environment Plan (SSHEP).

During field activities, Parsons' staff and its subcontractors may be exposed to hazards associated with the scope of work (SOW) activities. Employees will be required to use personal protective equipment (PPE) suitable for the task at hand. Upgrades to PPE will be implemented as necessary.

Field staff may also be exposed to other hazards that are encountered during field activities including slips, trip, and falls; working in proximity to heavy equipment, winches, suspended loads, hazardous energy sources, traffic hazards, and automobile use. Depending on the time of season, field staff may be exposed to biological hazards such as insect bites, stings, ticks, and snakes. Meteorological hazards such as lightning, wind, rain, and ultraviolet radiation may also be present. This PSHEP addresses the various hazards that may be encountered during completion of the SOW.

This PSHEP is based upon the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, The Parsons Environment, Safety, Health, and Risk Management Program (ESHARP) Manual, Version 7.0 , April 2017, and the Parsons Corporate Safety and Health Manual. The Parsons Corporate Safety, Health, and Environment (SH&E) Policy is provided in Exhibit 1-1. Honeywell safety requirements have also been incorporated.

1.1 PARSONS SAFETY, HEALTH & ENVIRONMENT POLICY**Exhibit 1-1 – Parsons Corporate SH&E Policy**

PARSONS


Corporate Safety, Health & Environment Policy Statement

As an industry-leading engineering, construction, and technical services firm, Parsons is firmly committed to maintaining a safe, healthy, and environmentally compliant workplace at all its offices and project facilities. We have adopted the following code of ethics:

- We will hold Safety, Health and Environment (SH&E) as our highest core value.
- Executive management will lead the SH&E improvement process.
- SH&E will be a responsibility shared by everyone in our organization.
- SH&E performance will be a key indicator of our organizational excellence and will be incorporated into our business processes.
- We will communicate SH&E performance openly with employees.
- Employees will be given the knowledge and skills necessary to perform their jobs in a SH&E compliant manner.
- We will extend our SH&E efforts beyond the workplace to include travel, homes, and communities.
- We will continually strive to improve our SH&E processes.

To meet our SH&E objectives, all employees are expected to be actively engaged with regard to SH&E issues. This requires the combined efforts of a concerned management, responsible and knowledgeable supervision, and conscientious, well-trained employees.

Parsons will meet or exceed the applicable SH&E legal and other requirements and will continuously monitor and improve operations, procedures, technologies, and programs that are conducive to maintaining a safe, healthy, and environmentally compliant workplace.


Charles L. Harrington
Chairman and Chief Executive Officer

1.2 THE PROJECT SAFETY, HEALTH, AND ENVIRONMENT PLAN

Parsons' goal is zero accidents using control measures designed to minimize or eliminate hazards to personnel, process, equipment, the general public and the environment. This PSHEP outlines SH&E requirements and guidelines developed by Parsons for project work. When implemented, these requirements will help protect site personnel, visitors, the public, and the environment from exposure from incidents caused due to SH&E hazards. Parsons employees should never perform a task that may endanger their own safety and health, the safety and health of coworkers or the public, or damage the environment.

This plan should be updated as conditions or situations change, usually by addenda to the PSHEP. All Parsons and subcontractor personnel must understand and implement the PSHEP and any addenda. Parsons documents this process by having employees sign an acknowledgement form stating that they understand the PSHEP and its requirements.

1.3 SUBCONTRACTOR SAFETY, HEALTH, AND ENVIRONMENT PLANS (SSHEPs)

Subcontractors must establish a safety program for their work and employees. Contract specifications require all subcontractors to accept the Parsons' PSHEP and prepare their own SSHEP for work activities the subcontractor has responsibility for performing. The subcontractor will present the SSHEP to the Parsons' Project and Safety Managers at least 10 business days before site mobilization. At a minimum, subcontractor plans must meet the requirements of this PSHEP and provide SH&E equipment and safeguards suitable for the hazards involved. This PSHEP may not cover all potential hazards on every project, and subcontractors must ensure that appropriate SH&E information is available for all of the subcontractor's project tasks.

All PSHEP requirements for Parsons' personnel (e.g., training, substance abuse screening, and incident reporting, etc.) also apply to subcontractor personnel and will be included in the SSHEP, if applicable.

If the subcontractor is performing activities that require specialized training (i.e., confined space entry, excavation/trenching, scaffold use, HAZWOPER, etc.), copies of training certifications must be provided for applicable employees AND the supervisor. Refer to Section 5 for more details on SSHEP requirements and Safety Evaluation information.

For these projects, there will be subcontractors directly hired by Parsons. Each contractor hired by Parsons, regardless of whether they are performing intrusive work activities, must complete the Parsons Online Contractor Safety Evaluation (CSE) Program and maintain a subscription with a satisfactory rating in the Honeywell ISNetwork system before being eligible to work for Parsons. Detailed information concerning the Parsons CSE Program is covered in Section 5.4.

Below are the names of subcontractors and the work activities each will be performing as part of the Honeywell – Tonawanda Coke Site 108.

SUBCONTRACTOR	CONSTRUCTION ACTIVITIES
Ontario Specialty Contracting (anticipated)	Tank demolition and product removal

1.4 MANAGEMENT OF CHANGE (MOC)

An important aspect of project management that is equally important to safety management is the process for Management of Change (MOC). In accordance with Parsons' ESHARP requirements, field modifications may be made to this document after discussion and approval by the Parsons Honeywell Program Safety Manager. Make note of any pertinent notations in the comment section below (insert additional rows as necessary).

Requirements for MOC include:

- Documentation of the proposed change, including identification of affected documents and the changed conditions
- Independent design review of potential safety, health, and environmental impacts
- Identification of modified or new hazards as a result of change
- Resolution of safety, health, and environmental concerns generated during all stages of the review
- Approval and authorization of the change
- Communication (and training, if needed) of the change to affected personnel

PSHEP Section	SSO Initials	Date	Comments

SECTION 2

SCOPE OF WORK

Parsons, in its contracted role with Honeywell International Inc., will be conducting interim measures to address the aboveground storage tanks and the associated secondary containment areas at the subject site. The initial scope includes removal of three aboveground storage tanks and their remaining contents (tar and water) at Site 108 of the Tonawanda Coke Corporation (TCC) property in Tonawanda, NY. The anticipated scope is outlined below.

Piping and Ancillary Equipment Removal

Prior to removal of the tanks, piping and ancillary equipment associated with the tanks will be disconnected and removed to the extent necessary to facilitate tank removal. The pipe insulation was sampled on February 28, 2019 and found to contain asbestos. Asbestos removal procedures such as glove bags will be used to remove the asbestos insulation from the pipes, or the pipes will be cut in sections with the insulation intact. Pipe and equipment removal will be done using a combination of cutting and mechanical shearing. Contaminated piping and ancillary equipment will be wrapped in 6 mil poly and transported to the decontamination area for cleaning, as necessary. All non-contaminated piping and ancillary equipment removed will also be taken to the decontamination facility before transport off-site for disposal or salvage. Remaining piping will be inspected and the ends blind flanged if tar is present in the pipes.

Tar and Water Removal and Tank Demolition

Based on preliminary evaluations, it is anticipated the tar will be stabilized *in situ* prior to removal from the tanks through the use of a stabilization agent such as wood chips/saw dust, lime kiln dust, cement kiln dust, or other applicable substances. This assumption forms the basis for the removal plan detailed below. If subsequent evaluations, including review of tank content testing results (anticipated mid-May) and subsequent discussions with disposal and recycling facilities, determine an alternative removal approach, such as heating and pumping, is more appropriate, details will be provided to United States Environmental Protection Agency (USEPA) for approval prior to implementation.

Removal will begin with the demolition and removal of the top portion of the tanks. To decrease the hazards associated with the tar remaining in the tanks, the demolition will utilize cold cut and mechanical shear procedures. The tanks will be demolished from the top down to about two to three feet above the current tar levels. The remaining bottom portion of the tanks will be left in place and utilized as a mixing basin to stabilize the tar.

Prior to stabilization, water remaining in the tanks will be removed and managed as discussed below. The stabilization agent will then be added in an adequate quantity to ensure that the mixed material passes the paint filter test before removal from the site. Load-out and off-site disposal of the stabilized tar will begin following stabilization of tar from the first tank. After completion of stabilized tar removal from the tanks, the bottom portion of the tank walls will be demolished.

Scrap metal from demolition be further downsized and processed for off-site recycling or disposal as discussed below.

Tar Reuse/Disposal

Prior to offsite reuse or disposal, the tar in the tanks will be undergo laboratory analysis to determine the most appropriate management approach. Samples of the remaining tar in the tanks were collected on April 11, 2019. The results of this testing and the proposed material management approach will be provided to USEPA for approval prior to mobilization to the site.

Tank Metal Management

The tanks will be cut into manageable sized pieces and moved to the decontamination area. If the metal can be successfully decontaminated, it will be collected in the staging area post-decontamination in preparation for off-site removal to a salvage facility. If it determined that decontamination is not practical, the metal materials will be managed for disposal at an appropriate disposal facility.

Water Management

Site conditions and water levels within the berms are monitored monthly and after significant precipitation events. If water levels within the secondary containment comes within two feet of the top of the berm at any location, water removal will be implemented. As specified in the Interim Measures Work Plan, pending analytical results, review and approval by the Town of Tonawanda wastewater treatment plant and approval from the USEPA for discharge to the Town of Tonawanda sanitary system if water removal from within the berms is required, it will be discharged either directly to a nearby sanitary manhole along River Road or trucked to a nearby discharge point. In anticipation of the need for water removal, Honeywell has sampled water from within the berms and based on those results and discussions with the Town of Tonawanda, it is anticipated that discharge of this water to the sanitary sewer system will be acceptable.

Water is also present within the tanks. Samples of the water in the tanks were collected on April 11, 2019. The results of this testing and the proposed water management approach will be provided to USEPA for approval prior to mobilization to the site. This water is presumably contaminated due to being in direct contact with tar. Contaminated water will also be generated during tank and equipment decontamination. Contaminated water from these sources will be containerized as necessary and sampled for potential discharge to the sanitary sewers. If sampling indicates discharge to the sanitary sewers is not appropriate, it will be pretreated as necessary prior to discharge to the sanitary sewers or disposed of off site. All sample results and the proposed management approach will be provided to USEPA for approval prior to implementation.

2.1 POTENTIAL HAZARDS

Electrical

Overhead power lines, downed electrical wires, and buried cables all pose a danger of shock or electrocution if contacted or severed during site operations. A minimum distance of 10 feet (ft.) will be present between overhead wires and equipment. This distance will vary according to voltage, the greater the voltage, the greater the clearance between any part of the equipment and

the power line. A spotter will be utilized to maintain a safe distance between equipment and overhead wires. Overhead electrical power lines will be considered energized unless the person owning such line, or operating officials of the electrical utility supplying the line assures that it is not energized, and it has been visibly grounded. Only the utility company is authorized to de-energize, insulate, or handle the lines. No one else may attempt these operations.

Electrical equipment used on-site may also pose a hazard to workers. Whenever possible, contractors will use low-voltage equipment with ground-fault interrupters and watertight, corrosion-resistant connecting cables to help minimize this hazard. All electrical wiring and equipment will be intrinsically safe for use in potentially explosive environments and atmospheres. Ground-fault circuit interrupters are standard for use at the site.

In addition, lightning is a hazard during outdoor operations, particularly for workers handling metal containers or equipment and working on a water craft on the Lake. In the event of an electrical storm, all operations will cease for the duration of the storm.

Heavy Equipment/Vehicle Traffic

Some Operation, Maintenance, and Monitoring (OM&M) activities take place in close proximity to construction activities and heavy equipment. Workers should not take any action unless they have made eye contact with the operator and clearly communicated their intentions. In addition, all equipment and vehicles must be equipped with back-up alarms, which are checked daily and if not operating properly, removed from service and repaired immediately. Truck traffic will be controlled by a flagger/spotter, as required.

Material Handling

Various materials and equipment may be handled manually during project operations. Care should be taken when lifting and handling heavy or bulky items to avoid back injuries. The following fundamentals address the proper lifting techniques that are essential in preventing back injuries include but are not limited to:

- The size, shape, and weight of the object to be lifted must first be considered. Multiple employees or the use of mechanical lifting devices are required for heavy objects.
- The anticipated path to be taken by the lifter should be considered for the presence of slip, trip, and fall hazards prior to lifting any object.
- The feet will be placed far enough apart for good balance and stability (typically shoulder width).
- The worker will get as close to the load as possible. The legs will be bent at the knees.
- The back will be kept as straight as possible and abdominal muscles should be tightened.
- Twisting motions should be avoided.
- A worker will never carry a load that cannot be seen over or around.

When placing an object down, the stance and position are identical to that for lifting. The legs are bent at the knees and the object lowered. When two or more workers are required to handle the same object, workers will coordinate the effort so that the load is lifted uniformly and that the

weight is equally divided between the individuals carrying the load. When carrying the object, each worker, if possible, will face the direction in which the object is being carried.

In handling bulky or heavy items, the following guidelines will be followed to avoid injury to the hands and fingers:

- A firm grip on the object is essential; leather gloves will be used if necessary.
- The hands and object will be free of oil, grease, and water which might prevent a firm grip and the fingers will be kept away from any points that could cause them to be pinched or crushed, especially when setting the object down.
- The item will be inspected for metal slivers, jagged edges, burrs, and rough or slippery surfaces prior to being lifted.

Hand and Power Tools

Hand and power tools are used for various site activities. Procedures for using hand and power tools are as follows:

- Persons using power tools will be trained in their use.
- Ground Fault Circuit Interrupters must be used for all electrical tools unless built in to the providing generator.
- Only tools in good condition will be used.
- Tools will be kept clean.
- Guards and shields will be kept on all tools.
- Air couplings will be secured.
- Non-sparking tools will be used in hazardous areas.
- Proper eye protection is critical when using power tools. At a minimum, safety glasses will be required during site operations. Where appropriate, full-face shields will be utilized in addition to the glasses.

Chemical Hazards

Operational chemicals may be brought to the project site for use in activities supporting the OM&M activities. These chemicals are used for fuels in operating heavy equipment, glues for welding pipes, herbicides for invasive species management etc. The use of operational chemicals is regulated by Occupational Health and Safety Administration (OSHA) under the Hazard Communication Standard (29 CFR 1910.1200). Safety Data Sheets (SDS) for operational chemicals must be kept on-site. An inventory list of the anticipated operational chemicals (Hazardous Chemical Inventory List) for use at the site will be maintained at the site and updated as new material is received.

In addition to potential chemical hazards involved with removing of the coal tar, site background indicates the site has been impacted with coal and coal tar wastes including benzene, toluene, ethylbenzene, total xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAHs). Potential chemicals of concern (COCs) identified for the site are listed below. Exhibit 2-1 presents additional details on these COCs.

- Benzene
- Toluene
- Ethylbenzene
- Xylenes
- Methylene Chloride
- 1,2-Dichloroethene
- 2-Methylnaphthalene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Fluoranthene
- Fluorene
- Naphthalene
- Phenanthrene
- Pyrene
- Dibenzofuran

2.2 PROJECT SAFETY, HEALTH AND ENVIRONMENT PLAN APPLICATION

This PSHEP and referenced documents applies to all locations, facilities, operations, and projects associated with the scope of work to be performed by Parsons and its subcontractors. The provisions of this plan are mandatory for all Parsons personnel engaged in activities consistent with the scope of work. Subcontractors working for Parsons must prepare and administer a plan with equivalent requirements unless otherwise specified. All Parsons and Parsons' contract personnel who engage in project activities must be familiar with this plan and comply with its requirements.

**EXHIBIT 2-1
CHEMICAL PROPERTIES OF CONCERN**

Chemical of Concern	Soil or Coal Tar (mg/kg)	Monitoring Equipment	Action Levels	Routes of Exposure⁽⁷⁾
<i>Benzene</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>Solid Sorbent Tube Or PID with 10.6 eV bulb</i>	OSHA: PEL = 1 ppm ACGIH: TLV/TWA = 10 ppm NIOSH: IDLH = 3000 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact
<i>Toluene</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>Solid Sorbent Tube Or PID with 10.6 eV bulb</i>	OSHA: PEL = 200 ppm C=300 ACGIH: TLV/TWA = 20 ppm NIOSH: IDLH = 800 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact
<i>Ethylbenzene</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>Solid Sorbent Tube Or PID with 11.7eV bulb</i>	OSHA: PEL = 100 ppm ACGIH: TLV/TWA = 100 ppm NIOSH: IDLH = 800 ppm	inhalation, ingestion, skin and/or eye contact
<i>Xylenes</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>Solid Sorbent Tube Or PID with 10.6 eV bulb</i>	OSHA: PEL = 100 ppm ACGIH: TLV/TWA = 100 ppm NIOSH: IDLH = 900 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact
<i>Methylene Chloride</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>PID with 11.7eV bulb</i>	OSHA: PEL = 25 ppm ACGIH: TLV/TWA = 50 ppm NIOSH: IDLH = 5,000 ppm TLV-STEL = 125 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact

<i>1-2 Dichlorethene (and isomers)</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>PID with 11.7eV bulb</i>	OSHA: PEL = 200 ppm ACGIH: TLV/TWA = 200 ppm NIOSH: IDLH = 1000 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact
<i>2-Methylnaphthalene</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>Solid Sorbent Tube Or PID with 11.7eV bulb</i>	OSHA: PEL = 10 ppm ACGIH: TLV/TWA = 0.5 ppm NIOSH: IDLH = NA	inhalation, ingestion, skin and/or eye contact
<i>Polyaromatic Hydrocarbons (PAHs/petroleum pitch) (covers PAH related analytes listed above)</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>Semi-volatile Sorbent tubes with pre-filter PID with 10.6 eV bulb</i>	OSHA: PEL = 0.2 mg/M3 ACGIH: TLV/TWA = 0.2 Mg/M3 IDLH = 80 mg/M3 (CA)	inhalation, ingestion, skin and/or eye contact
<i>Dibenzofuran</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>NA – solid</i>	NA	May cause, eye, skin and lung irritation

Notes:

1. Soil analytical data based on GHD Confirmation Investigation Report dated (revised) March 17, 2017)
2. OSHA PELs as published in the NIOSH Pocket Guide
3. TWA = time weighted average
4. mg/m3 = milligrams of contaminant per cubic meter of air
5. ppm = parts of contaminant per million parts of air
6. ACGIH TLV = American Conference of Government Industrial Hygienist Threshold Limit Value
7. Source: NIOSH Pocket Guide to Chemical Hazards

SECTION 3**PROJECT SH&E SAFETY MANAGEMENT
RESPONSIBILITIES AND AUTHORITY****3.1 SAFETY, HEALTH AND ENVIRONMENT (SH&E) RESPONSIBILITY
MATRIX**

Exhibit 3-1 summarizes the responsibilities of selected roles related to the primary SH&E activities identified in the PSHEP.

EXHIBIT 3-1 ROLES AND RESPONSIBILITIES

Project Responsibility Matrix		Project											BU					Corporate								
		Project Manager	Safety & Health	Environmental	Construction/Site Management	Engineering	First Line Supervision	Facilities and Maintenance	Training	Contracts/Procurement	Security	Sustainability	Quality	President	Operations/Risk Management	Division Management	Sector Management	Safety, Health & Environment	Quality	Business Development	CEO	Operations/Risk Management	Safety, Health & Environment	Security	Workers' Compensation	Insurance
Phases	Work Elements																									
Introduction to ESHARP for Project	1. ESHARP Project Management	R	D	D	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P
Business Development	2. Business Development	R	P	P	P	P				P			P	P	A	P	P	P	D	P	P	P	P		P	
Startup	3. Initial Hazard Analysis and Planning	A	R	D	P	P											P						P	P		
	4. Project Safety Health, and Environmental Plan (PSHEP)	A	D	D	P									P	P	P	R						P	P		
	5. Stakeholder PSHEP Alignment Meeting	A	D	D	P												R									
Construction and/or Field	6. Preconstruction Safety, Health & Environment Activities	A	D	D	P		P					P				P	R	P						P		
	7. Project/Site Orientation, Training, and Recurring Field SH&E Meetings	A	D	D	P		P	P	P								R							P		
	8. SH&E Committee	A	D	D	P		P	P			P						R							P		
	9. Meet Building Trades, Safety, Health, Environmental Regulatory Agencies, & Others	A	D	D	P												R							P	P	
	10. Review Contractor/Subcontractor SH&E Programs	A	D	D	P					P							R							P		
	11. Subcontractor Premobilization Meeting	A	D	D	P	P				P	P						R							P		
	12. Risk Mitigation Planning (2-week look ahead)	A	D	D	R												D							P		
	13. Activity Hazards Analysis	A	D	D	P	P	P	P									R							P		
	14. Project Management Site Safety, Health, & Environmental Inspections	A	D	D	P										P	P	R	P						P		
	15. Audits, Inspections, and Recordkeeping	A	D	D	P		P					P			P	P	R	P						P		
16. Incident Management Process	A	D	D	P		P					P		P	P	P	R	P						P		P	

EXHIBIT 3-1 ROLES AND RESPONSIBILITIES (CONTINUED)

Project Responsibility Matrix		Project											BU					Corporate							
		Project Manager	Safety & Health	Environmental	Construction/Site Management	Engineering	First Line Supervision	Facilities and Maintenance	Training	Contracts/Procurement	Security	Sustainability	Quality	President	Operations/Risk Management	Division Management	Sector Management	Safety, Health & Environment	Quality	Business Development	CEO	Operations/Risk Management	Safety, Health & Environment	Security	Workers' Compensation
Phases	Work Elements																								
Testing, Commissioning, Operations, and Decommissioning	17. Management Systems and Transition	A	R	R	D	P	P	P	P		P	P	P	P	P	P	P	P		P	P	P	P		P
	18. Equipment and Systems Integrity	A	P	P	R	P	P	D	P				P				P	P				P			
	19. Operations Training and Education	A	D	D	P	P	P	P	P		P		P				R					P			
	20. Assessments and Corrective Action	A	D	D	P	P	P	P	P		P		P				R					P			
	21. Operations Emergency Management	A	P	P	P	P	P	P	P	P	D		P				R					P	P		
Closeout	22. Safe and Environmentally Compliant Work Practices	A	D	D	P	R	R	P	P								P					P			
	23. Lessons Learned and Final SH&E Report	A	D	D	P											P	P	R	P				P		
	24. Records Retention	A	P	P					P		D		P				R	P				P			

R – Responsible and accountable for ensuring the project develops and implements the work element.

D – Develops the plan, tool, training, document, or other item needed for the work element.

P – Participates by providing advice, assisting in the implementation or development, reviewing and providing comments, or otherwise supporting the development or implementation effort.

A – Approval at the management level with responsibility for the project; establishes requirements for the project or serves as sponsor for the item.

SECTION 4

ADMINISTRATIVE PHASE

4.1 PROJECT SAFETY, HEALTH & ENVIRONMENT (SH&E) COMMITTEE

The project must have a SH&E Committee if more than five full-time Parsons employees or when 25 or more Parsons and subcontractor employees are assigned to the project. Based on the anticipated SOW for calendar year 2019, a project safety committee is not expected.

4.2 PROJECT (EMPLOYEE) ORIENTATION

The project has a comprehensive employee orientation program. The SH&E personnel help to develop applicable SH&E sections of the orientation and meet with new employees to review site procedures and requirements (Exhibit 4-1). Topics covered in the PSHEP orientation include:

- PSHEP overview
- Project rules and disciplinary policies
- Reporting emergencies, incidents and unsafe conditions
- Near miss reporting
- Hazard communication
- Emergency/evacuation plans
- WorkCare
- Spill/release reporting and response actions
- Waste management
- Stormwater and wastewater management
- Scope of work
- Names of personnel responsible for site safety and health
- Communication protocol/suggestion box
- Safety, health, environment and other hazards at the site
- Review of all activities on-site and related Activity Hazard Analysis (AHAs)
- Proper use of PPE
- Work practices by which a worker can minimize risk from hazards
- Safe use of engineering controls and equipment on-site
- Acute effects of compounds at the site
- Decontamination procedures
- Other applicable environmental issues and regulatory requirements
- Stop Work Authority
- Biological hazards training

All personnel, including subcontractors, new hires, transfers, union workers and visitors on a project must attend the site orientation program on their first day and sign an acknowledgement form indicating they attended, received and understood the orientation. Any individual who is unsure of any information presented in the orientation must request clarification. Individuals who do not participate in the orientation or refuse to sign the acknowledgment when requested will not be granted access to the site. The Field Safety Manager will provide employees with Orientation.

4.3 AWARENESS CAMPAIGN

The project has an awareness program consistent with the Parsons SH&E awareness campaign in its various elements (e.g., signs, posters, banners, and focus briefings). This program promotes worker awareness of SH&E goals and daily risks, hazards, and exposures in the field. In addition to topics selected by Corporate Safety each month, the project will supplement the awareness program with information specifically applicable to the SOW. The Project Safety Representative may also provide training, presentations, or informational materials as part of the awareness campaign.

The SH&E bulletin board maintained by the Project Safety Manager (PrSM)/Site Safety Officer (SSO) is the primary information point for the project awareness campaign. Bulletin boards will be set up in field trailers as appropriate. The PrSM/SSOs may also provide training, presentations, or informational materials as part of the awareness campaign.

4.4 STAKEHOLDER PROJECT SAFETY PLAN ALIGNMENT MEETING

A stakeholder PHESP alignment meeting will be held before beginning any field work. The meeting allows Parsons to focus and coordinate efforts, obtain input for improvements and gain concurrence from all stakeholders for execution of the PSHEP. The following representatives should be in attendance for the PSHEP alignment meeting:

- Honeywell – Richard Galloway
- Parsons – Tom Abrams, PrM
- Parsons - Bill Moon, PrSM
- OSC Project Manager – TBD
- OSC CM/Superintendent – TBD

Parsons should present the PSHEP and obtain stakeholders concurrence with the approach outlined in the plan. The meeting should include a review of stakeholder roles and responsibilities and elements of control appropriate to the project risks.

4.5 TRAINING

The project will develop an SH&E training program tailored to the SOW. All employees receive a general project orientation as outlined in Section 4.2 upon assignment to the project. All office-based employees, field employees and new hires who spend a significant portion of their time in an office or field trailer shall receive a specialized office training including the following topics as appropriate:

- Proper lifting techniques
- Biological hazards (ticks, bees, poison ivy, etc.)

- Ergonomics
- Housekeeping
- Common office hazards and environmental risks (if any)
- Waste management
- Office procedures
- Evacuation/Drills/Emergencies
- Other relevant topics

Field-based employees and office employees who spend a significant portion of their time in the field also receive field training as appropriate and as described in Section 7 of this PSHEP including the following topics:

- PPE
- Defensive driving
- Lifting
- Back safety
- Cardiopulmonary resuscitation (CPR)/first aid/automated external defibrillator (AED) and blood borne pathogens
- Electrical safety
- Overhead hazards
- Emergency response
- Fire Prevention
- Housekeeping
- Hand tools/Power tools
- Hazard communication: Identifying the Danger
- Honeywell accident/incident reporting procedures
- Parsons accident/incident reporting procedures

They may also receive the following training as applicable to a specific task:

- Lockout/Tagout (LOTO)
- Stairs / ladders

All personnel engaged in hazardous substance removal or other activities that expose or potentially expose them to hazardous substances or health hazards shall receive appropriate training as required by 29 CFR 1910.120, including, but not limited to, initial 40-hour, 8-hour Supervisor and annual 8-hour refresher training.

4.6 AUDITS AND INSPECTIONS

The SH&E manager has implemented an audit and inspection program in conjunction with the Corporate SH&E Departments. The Project Manager (PM), or their designee, in accordance with Section 6.5 conducts weekly site inspections. Additional inspections will also be completed when a significant task is being performed (e.g., soil/sediment sample collection, sample surface

water collection, major restoration efforts by subcontractor, etc.). If the PM is not on-site, the most senior person on-site will conduct the inspection. Inspections and audits are intended to identify unsafe behaviors or conditions and implement corrective actions before an incident occurs. Completed inspections will be saved in the project files. Additional information on audits and inspections during construction is detailed in Section 6.5 of this PSHEP. All noted deficiencies and corrective actions will be tracked with the use of a tracking log. The PrSM will evaluate inspection and audit results and provide a summary to the Safety Steering Committee. When appropriate, Safety Bulletins will be issued to convey safety lessons from near misses or incidents that are applicable to our own circumstances for the purpose of continuous improvement. In accordance with the Parsons' safety protocol, safety inspections and audits are required to be performed in the manner and frequency described below.

4.6.1 Periodic Safety Audits

Projects will be selected at the discretion of the SH&E Manager for periodic project audits. These audits will generally be more comprehensive in nature and will include a documentation review as well as a site walk-through. Completed inspections will be sent to the safety Director and will be summarized in the next Monthly Safety Report. The Safety Director will forward inspection results to the Safety Manager so that corrective actions can be tracked to conclusion.

4.6.2 Corrective Actions

Deficiencies identified by audits and inspections will be logged in a deficiency tracking log. Any deficiencies that cannot be immediately corrected must be assigned to a specific individual with a reasonable completion date. The Safety Manager or the designated SSO will track corrective actions, verify their closure, and update the Corrective Action Tracking Log or equivalent. Findings of a severe nature or that indicate a declining site safety trend may warrant notification of subcontractor's senior management. Ongoing failure to implement safety requirements as by applicable regulations, the contract, and may be considered a breach of contract and result in the subcontractor's removal from the project.

The PrSM has implemented an audit and inspection program in conjunction with the corporate safety and quality assurance departments. The PM, together with the Field Team Leader or the SSO, will conduct a safety inspection each month. Office work areas (including trailers) are audited according to the corporate office audit standards.

4.6.3 Employee Based Inspections (EBS)(Observations)

This project will utilize the EBS system for field inspections and observations by conducting periodic Behavior Based Observation (BBOs). BBOs are about conducting worker observations, providing positive reinforcement for **significantly important behaviors** that are correct and consistent with company work standards, and constructively identifying and eliminating deviations from these work standards.

Observations shall be recorded electronically in the field typically by management personnel utilizing IndustrySafe® proprietary software located on the PWEB. Unsafe acts or situations shall be immediately corrected, if possible. Items which cannot be corrected shall be logged as incomplete within the system for corrective action tracking. Data shall be uploaded to a central database maintained by IndustrySafe®. IndustrySafe® has set up a database specifically for this

project where inspections, trends and collected data can be reviewed by the entire project management team.

Personnel responsible to perform employee observations typically shall consist of project management staff. For this project, the personnel performing observations shall include the following:

- PM
- SSO
- Field Team Leader

A metric of 1 inspection or observation per week has been established by the Program Safety Director. Due to the effectiveness of an unscheduled random inspection model, as well as project management scheduling, these inspections may or may not be performed in any given week or performed above the quota during higher risk activities. The PSM shall be responsible for stewardship of this inspection program.

4.7 SH&E MEETINGS

All project meetings that include five or more people must begin with a SH&E moment. The meeting chairperson may present the SH&E topic or ask for a volunteer to open the discussion. In general, these “SH&E moments” are brief, perhaps a minute or two, and should be directly relevant to the work of the day or applicable to most employees (e.g., non-work-related injuries, waste management procedures, effects of stormwater discharges, home exposure to hazards materials, etc.). Monthly all hands SH&E meetings are held to review critical safety procedures, discuss safety incidents, and celebrate safety milestones. The PM announces the time and schedule of these meetings at least one week in advance.

Daily toolbox safety meetings are held with all personnel at the beginning of each shift to review current site conditions, incidents, or injuries from the previous shift activities, safe or at-risk observations from the previous shift, activities planned for the current shift, anticipated hazards, engineering controls, work practices, PPE to protect against hazards, and any additional safety topic or comments. Toolbox safety meetings shall be documented and signed by all individuals accessing the site using a Safety Meeting Sign-In Sheet.

4.8 REWARDS AND RECOGNITION

4.8.1 Rewards and Recognition Program

At Parsons we expect every employee to work safe. We do offer incentives for those who proactively go the extra yard, or mile, to make Parsons an even safer place to work. Our incentive program is project-based but similar across all Parsons’ projects.

Things that we want to incentivize (and why):

- 1) **Near-Miss Reporting** (The root cause of a near miss is generally identical to the root cause of a “hit”. If we report near-misses, find their root causes and actually fix them we have lowered the potential for having an incident.) Employees who submit near-misses may be eligible to receive a Red Safety Token that can be exchanged for items. (Red Tokens are a Corporate way of giving thanks for safety efforts.)

- 2) **Good or Great Ideas that make the job safer or Significant Safety Observations** (Many employee ideas go unrecognized because we never hear about them.) Please let your PM/Superintendent or SSO know what your idea is to make Parsons a safer place to work. Employees who submit ideas that are implemented (as determined by the Project Safety Committee or, the PM/SSO) or make significant observations (saw a hazardous condition and reported it; made an adjustment to a task to make it safer, etc.) that the site leadership team can act upon, may receive Red Safety Tokens that can be exchanged for items as determined by the Rewards and Recognition Committee.
- 3) **Employees that go the extra yard to improve the safety program** (Our program only gets better if all members of the team understand and contribute to our zero injury goals.) Emergency Response Team (ERT) Members, Employee Based Safety (Industry Safe) volunteers, safety committee members, those who contribute to AHA development and others, may be eligible to receive a Safety Token.
- 4) **Sustained, high performance by a site team/project** (No one gets hurt!) Teams, projects or, even the entire portfolio who maintain a high level of safety consciousness as exhibited by a high level of near-miss reporting, overall safety culture, quality H&S observations, etc., can be recognized by virtue of a safety breakfast/lunch or, Honeywell/Parsons recognition token gift.

SSOs will work with their PMs to determine the rewards and recognition program appropriate for the project and will be responsible for local administration of this program. They are also responsible for inter-portfolio sharing of the near-misses reported as well as the great ideas that are surfaced. PMs will budget for this recognition program. Charges will go to project/program overhead. Employees who receive tokens will be tracked for audit purposes. SSOs will collect red tokens when awarding gifts.

4.9 MEASUREMENT AND REPORTING

Complete incident reporting guidelines are provided as Exhibit 4-2 of this section.

4.9.1 Emergencies

For emergencies, call 911!

4.9.1.1 Emergency Response Team – Not Used

4.9.1.2 WorkCare

Parsons and WorkCare have partnered together to promote Incident Intervention™, a resource designed to provide Parsons' employees with immediate access to qualified medical clinicians who are able to provide our employees with prompt medical assessment in the event of non-life threatening, non-medical emergency work related injury or illness. Each of Parsons' subcontractors is required by contract to participate in this program. Through this process, Parsons can leverage clinical expert resources to coordinate appropriate treatment care. WorkCare serves as a "medical advocate" for the employee, the WorkCare clinician provides responsive evaluation of the incident, assists the employee/employer in determining the most appropriate course of action, and consults with the treating physician.

4.9.1.3 Work-Related Injury Procedures

For Emergencies

If there is a life threatening or significant medical event (e.g., not breathing, no heartbeat, unconscious, open wound, amputation, obviously broken arm or leg, etc.), then the first employee on the scene should:

1. Call for help
2. Call 911
3. Begin first aid/CPR if trained

For Non-Emergency, Non-Life-Threatening Work-Related Injury or Illness

Upon notification of a non-life-threatening illness or injury event the **Field Team Leader** will:

1. Make sure that 1st Aid/CPR trained employees are on scene and assisting the injured.
2. Make sure that any ancillary work ceases to make scene safe for responders.
3. Contact the SSO; For anything beyond a minor band-aid case the SSO will confer with Bill Moon (315-323-8175) to determine if WorkCare shall be called.
4. If determined, contact WorkCare and allow the injured employee to speak with a WorkCare doctor or nurse.
5. Follow WorkCare guidelines; Drive the employee to the clinic if directed and stay with him/her until the visit is concluded.
6. Provide the employee with “Questions to Consider Asking Your Doctor During a Clinic Visit.”
7. Provide the employee with “Memo to Treating Medical Professional” prior to the employee going into the exam room.
8. Participate in the incident investigation process upon return to the site.

To coordinate the WorkCare triage process, it is imperative that Parsons’ employees report all work-related injuries immediately to their supervisors.

For work-related injuries or illnesses that may require physician direction on appropriate treatment, Parsons’ employees should then promptly contact WorkCare, ideally before seeking medical care, as this will provide the greatest opportunity for appropriate intervention.

If an injured employee requires medical care for a work-related injury/illness, the Order for Treatment of Work-Related Injury/Illness Form **MUST** be sent with the injured worker and/or faxed to the occupational medicine clinic at the time of the initial evaluation. See Exhibit 4-3.

WorkCare’s Incident Intervention is available 24/7 and 365 days per year.

WorkCare contact number is 1-888-449-7787.

Be prepared to provide the following:

- Injured worker’s name
- Injured worker’s contact number
- Injured worker’s location (at a minimum include the city and state)

- Employee ID number
- Employee's Market
- Employee's project or office location
- Functional manager's name

Near-Miss Reporting

In an effort to streamline near-miss reporting, especially for employees conducting fieldwork who do not have real-time web access, will contact the PM or the Safety Manager for assistance. All entries will be saved as initial and can be accessed by the caller when they return to their computers. Entry into the database does not relieve the caller from the responsibility of following through with the near-miss investigation or of notifying other employees in the office or project team of the occurrence.

Callers will be prompted to provide the following information:

- Name and phone number
- Date of near-miss
- Location
- Project number (if applicable)
- Brief description of what happened
- What you think happened if this situation resulted in injury or damage
- Any other information you think may be important

The intent of this service is to enable employees to phone in near-misses immediately and have events entered into the Parsons Industry Safe database. As we all know, the expectation is that immediately after having a near-miss, Stop Work Authority will be used to ensure the area is safe and determine what changes must be made before it is safe to proceed.

4.9.2 Measurement and Compliance

The PM and PrSM establish and post a measurement system to provide indicators of safety performance, including the following metrics for the project:

- Project start date
- Days without a recordable injury
- Date of last OSHA recordable injury (if applicable)
- Percent of safe observations from each monthly audit

Subcontractors must submit a monthly report of incidents, exposure hours (hours worked on the project, paid or unpaid) to the Parsons PM within three (3) days after the end of each month. The PM compiles the figures and submits them to the PrM (or via the online safety reporting system if instructed by the PrM) by the first Friday of each month; where necessary, estimated figures are acceptable. If a project involves air monitoring or personnel wearing any type of respirator, a monthly Field Project Report is also completed and submitted to the SH&E Director by the 3rd calendar day after the end of each month.

To accurately measure performance and comply with corporate and regulatory requirements, Parsons and its subcontractors have an emergency communications system to contact the following onsite offices for the events listed below:

<i>All incidents</i>	<i>(Program Manager) Tom Abrams (315-552-9670)</i>
<i>Worker injury or exposure</i>	<i>(Program Safety Manager) Bill Moon (315-323-8175)</i>
<i>Hazardous material/contaminant releases</i>	<i>Site Emergency Response Lead (315-715-1800)</i>
<i>Fires/explosions</i>	<i>Fire (911)</i>
<i>Medical emergencies</i>	<i>First Aid/Medical (911)</i>

This notification information should be provided to site workers in either posters or individual wallet cards that can be distributed to site workers. In addition, this information should be prominently displayed in the PSHEP (e.g., on the back of the plan cover).

The SH&E Manager has established a measurement system to provide indicators of SH&E performance, including the following metrics:

- Consecutive days without a recordable incident
- Consecutive days without a days-away-from-work incident
- Recordable incident rate
- Days-away-from-work incident rate
- Contaminant exposures monitored and over exposures documented
- Environmental citations from regulatory agencies
- Total number of environmental spills and/or releases recorded
- Environmental spills and/or releases requiring reporting (e.g., Reportable Quantities)
- Number of monthly audit findings by type (i.e., safety, health and environmental)

4.9.3 Incident Reporting

Employees involved in or witnessing an injury, worker exposure, environmental incident, or near miss must immediately report it to the responsible Field Team Leader, who in turn immediately relays the report to Parsons Project SSO. No Field Team Leader may decline to accept or relay a report of SH&E incident or significant near miss from a subordinate.

The PM must ensure that all SH&E incidents are reported to the SH&E and other management personnel (as required) within four hours. The Project SSO (who has been trained on Parsons' reporting requirements and Online Safety Reporting System) prepares and submits SH&E reports. The PrSM sends reports to the required management personnel and validates that client reporting requirements are also met.

The PrSM must notify the local OSHA office and/or regional, municipal and/or local regulations office in writing within 8 hours if an accident involves any work-related fatalities within eight hours of the event and all work-related in-patient hospitalizations, as well as amputations and losses of an eye, to OSHA within 24 hours of the event. In addition, spills/releases

of reportable quantities and other reporting required by environmental regulation are the responsibility of the PrSM.

The PM and Safety Director must be notified by the SHSO of any incident as soon as it is safe to do so but within the notification guidelines identified in the following table. After notification, written incident reports must be submitted by the SHSO to the Safety Director in accordance with the time frames shown in the Attachment B. The Safety Director's delegate shall then enter incidents into the Honeywell Event Reporting System within the applicable time frames which can be found in Attachment B of this PSHEP. If the Safety Director is unavailable, then the Safety Manager shall assume or delegate Safety Director's responsibilities in an effort to support timely incident reporting and follow-up.

For a complete listing of Tier 1, 2, and 3 examples see Attachment B.

Monthly Statistics Summary Reports

Root causes must be identified, and corrective actions implemented. The Safety Manager can assist project SSOs in reviewing and tracking incident reports as well as following up on completion of corrective actions. The SSO shall update the Safety Manager as corrective actions are implemented and completed. The Safety Manager will track and verify completion of corrective actions on the Corrective Action Tracking Log or equivalent.

The Safety Director will summarize incidents on the next monthly Safety Report following the incident. The timeliness of incident reporting and any significant "Lessons Learned" will be included in the summary.

A Honeywell Notification/Activation Decision Table is also presented in Attachment B.

In addition to the Honeywell incident notification requirements, Parsons' employees involved in or witnessing an incident or near-miss incident must immediately report it to the responsible SSO, who in turn immediately relays the report to Parsons PM. Near-miss incidents that could cause significant injury or loss of life must be immediately reported, in the same manner as an actual incident. No supervisor may decline to accept or relay a report of injury or significant near-miss incident from a subordinate.

The PM must ensure that all incidents are reported to the Safety Manager and other management personnel (as required) within four hours. The PM (who has been trained on Parsons' reporting requirements and Online Safety Reporting System) then prepares and submits the incident information.

The Program Safety Manager, or their designee, must notify the local OSHA office immediately if an accident involves the death of an employee or hospitalization of three or more workers.

Subcontractors must submit a monthly report of exposure hours (hours worked on the project, paid or unpaid) to the Parsons PM within four days after the end of each month, or as specified by the contract. The PM compiles the figures and submits them via the online safety reporting system by the first Friday of each month. If necessary, estimated figures are acceptable, but the reports must be filed.

4.10 INCIDENT INVESTIGATIONS

All accidents, worker over exposures, environmental incidents and significant near misses are investigated by an individual or team with training in incident investigation and root cause analysis. Subcontractors must investigate incidents involving their employees or activities and submit an investigation report to the Parsons PM within 48 hours of an incident.

In Parsons, the PrSM investigates or assigns an investigator to each significant incident. The investigator submits a final investigation report using the online safety reporting system within 72 hours of the incident. The Project SSO maintains the investigation file.

4.11 RESPONSIBILITY/IDENTIFICATION OF KEY LINE PERSONNEL

For project responsibility and identification of key personnel.

Project Key Personnel

Project Office:	Syracuse, New York	
Address:	301 Plainfield Road, Suite 350 Syracuse, NY 13212	
Telephone 315-451-9560	Fax 315-451-9570	Email
Company Executive responsible for project		Contact No.
Pratima Poplai		Direct Line: (732) 537-3552 Cell Phone: (732) 853-4957 Email: Pratima.Poplai@parsons.com
Market SH&E Director		Contact No.
Jason Townsell		Cell: (562) 565-3491 Jason.Townsell@parsons.com
Site Project Managers		Contact No.
Tom Abrams		Direct Line: +1(315)552-9670 Cell: 315-263-5109 Tom.Abrams@parsons.com
Program Safety Manager (PrSM)		Contact No.
Bill Moon		Cell Phone: 315-323-8175 William.moon@parsons.com
Site Safety Officer (SSO)		Contact No.
TBD		Cell Phone:
Client Project Management POC		Contact Information
Steve Coladonato		Direct Line: (302) 791-6738 Cell Phone: (973) 216-2438 Email: Steven.Coladonato@Honeywell.com

The personnel listed above have the authority and responsibility for implementing the provisions of this project.

4.12 MEDICAL REQUIREMENTS AND WORKERS' COMPENSATION

In accordance with corporate requirements, the SH&E Manager has established and implemented the following medical requirements for the project:

4.12.1 Substance Abuse Tests

Honeywell and Parsons are committed to maintaining a safe and healthy work environment for its employees, its subcontractors and the community. Honeywell and, Parsons recognize that on-the-job, as well as off-the-job, use of drugs and consumption of alcohol can have a negative impact on job performance, endanger individual safety, the safety of co-workers, and the community. Contractor crews are covered by the drug and alcohol policies of their employers.

NOTE: Parsons Employees and subcontractors are subject to additional post accident drug testing requirements that include (but are not limited to) company vehicles and high-risk power tools. Refer to Parsons Employment Standards Rev 3, Appendix 4 –Substance Abuse.

Policy

In an effort to establish a substance abuse-free workplace and with an understanding that *subcontractors* often perform *Safety-Sensitive Activities*, Honeywell and Parsons require *subcontractors* to have a Drug-Free Workplace Policy that meets or exceeds this policy when working on Honeywell projects and/or property. See Exhibit 4-4 for Parsons Corporate Substance Abuse Policy.

Pre-Access

The PM shall require project personnel to have pre-access drug and alcohol screening within **two weeks** prior to the commencement of field work.

- Pre-access testing is not necessary if subcontractors have been off-site **≤30 days**.
- Short-term subcontractors needed to provide emergency response support or unscheduled repairs to critical on-site equipment may be exempted from pre-access testing if approved by the Portfolio Safety Manager or Market SH&E Director.
- The PM will document approved exemptions in pre-work planning documents associated with unscheduled repairs of critical equipment.
- Exemptions may be extended for a maximum of **three days** after which time exempted subcontractors must tested for drugs and alcohol.

Reasonable Suspicion

Reasonable suspicion testing may be triggered by direct observations of employee behavior or drug-related paraphernalia. Site personnel who have been observed using alcohol or controlled substances on site or during breaks at off-site locations after which they will return to work will be requested to take an alcohol or drug test. Reasonable suspicion includes possession (on person or in vehicles) of alcohol or controlled substances on site as well as paraphernalia that suggest drug use. Site personnel who exhibit signs, symptoms, or behaviors of drug or alcohol use as interpreted by a reasonable person will also be requested to take a drug and/or alcohol test. Reasonable suspicion drug testing must be conducted **as soon as feasible not to exceed four hours**.

Post-Accident

Honeywell reserves the right to drug and/or alcohol test Parsons or subcontractor personnel involved in an accident. Honeywell requires Parsons or subcontractor personnel to submit to an alcohol test within 2 hours and to a drug test within 32 hours after an accident. If the alcohol test is not collected within 8 hours and the drug test within 32 hours after an accident, then the Safety Director will cease efforts to have the tests collected and document the reason for failing to collect these tests. Failure to cooperate with drug and alcohol testing procedures may result in disciplinary action up to and including removal from site for a minimum of one year.

Project Drug & Alcohol Screen

The Safety Director may select specific projects for drug and/or alcohol testing at his discretion. Project personnel will either be randomly selected from the total project personnel, or on smaller projects, all project personnel will be tested. Parsons engineering and construction management personnel routinely working on-site shall not be excluded from testing.

Commercial Motor Vehicle Drivers

Project personnel who operate commercial motor vehicles will be required to participate in periodic and random drug and alcohol testing by their employers in accordance with the Federal Department of Transportation regulations. Evidence of such participation shall be provided upon request.

Drug & Alcohol Testing Procedures

When required by this program, Parsons' employees and subcontractors will report to Well Now Urgent Care drug collection facilities. Well Now drug collection facilities are located at 961 Sheridan Drive, Buffalo (716.844.7100). Drug test results from non-Well Now drug collection facilities may be acceptable if collection and analysis of samples is otherwise equal to those outlined in this document. The Safety Director/Manager shall make the final determination if drug test results collected at non-Well Now facilities are acceptable.

After-Hours Testing (Post-Accident & Reasonable Suspicion)

Well Now Urgent Care provides post-accident testing. All post-accident testing is conducted at their Tonawanda clinic location. Health & Safety and the appropriate Talent Management/Human Resources representatives should be notified as soon as feasible following an employee being sent for testing. After hours testing of subcontractor personnel does not require notification of Parsons Talent Management/Human Resources. Well Now Urgent Care's address in Tonawanda is as follows:

**1751 Sheridan Drive
Tonawanda, NY 14223
716.541.0234**

Normal Business Hours: 8:00am – 8:00pm. 7 days a week

- Notify the PM, Health & Safety and the appropriate Talent Management/Human Resources representative as soon as feasible.
- For subcontractor personnel, notify Health & Safety as soon as feasible.

Confidentiality of Test Results

Test results will be maintained in accordance with applicable law in a confidential file of medical information. Subcontractors will be copied on drug and alcohol results for their personnel. The Safety Director/Manager will retain and secure subcontractor drug and alcohol test results as necessary to support a policy of prohibiting such individuals from being assigned to another project within the next year AND before a negative drug and alcohol test is provided.

Positive Test Results

A positive drug test result will be confirmed by a Medical Review Officer (MRO) responsible for reviewing test results and procedures. A positive alcohol test result will indicate blood-alcohol levels **greater than or equal to 0.04** and will also be confirmed with a second alcohol test and MRO review. Detectable alcohol **less than 0.04** will be considered a negative result and the individual will not be classified as intoxicated or otherwise under the influence. Individuals with blood-alcohol levels **less than 0.04** may be permitted to return to normal work duties including safety-sensitive activities. However, commercial drivers with blood alcohol between **0.04 and 0.02** must be removed from safety-sensitive activities that are specifically related to the operation of commercial vehicles for **24 hours** as required by Federal Department of Transportation (DOT) regulations. After 24 hours, normal driving duties may be resumed.

Any person who does not provide an acceptable urine sample after 3 hours or does not otherwise cooperate with testing procedures, will be classified as a refusal. Refusals will be treated as a positive result for purposes of follow-up and disciplinary action.

Testing positive or refusing a request for a drug and alcohol test may result in disciplinary action, up to being immediately removed from the project and not be permitted to work on another project for one year. A negative drug and alcohol test are also required prior to being reassigned to an project. The Safety Director will track drug and alcohol testing results.

4.12.2 On-Site Medical Services and Panel of Physicians

The Parsons Corporate Workers' Compensation Analyst establishes medical providers for the project and selects medical facilities to treat work-related injuries and illnesses, as follows:

Emergency Medical Services

- **Location:** Kenmore Mercy Hospital, 2950 Elmwood Avenue, Kenmore, NY 14217
- **Phone:** General Phone: 716.447.6100
- **Hours of Operation:** 24 hours
- **Directions:** See Exhibit 4-5

Non-Emergency Medical Services

- **Location:** Well Now Urgent Care, 1751 Sheridan Drive, Buffalo, NY 14223
- **Phone:** 716.844-7100
- **Directions:** See Exhibit 4-5.

WorkCare Information

- See Exhibit 4-6 for WorkCare forms

NOTE: Transportation to a medical facility for non-emergencies must be done by at least two (2) individuals (i.e., driver and observer).

4.12.3 Emergency Response

The project displays posters with emergency telephone numbers and locations of emergency facilities in visible locations and at selected phone locations throughout the project area (including subcontractor facilities). The following information is provided:

<u>Emergency Contacts</u>	<u>Phone Number</u>
Ambulance (Onondaga Fire Control)	911
Fire Department	911
State Police (NYS)	911
Parsons Contract Physician (WorkCare)	888.449.7787
Poison Control Center	800.252.5655
Well Now Urgent Care	716.844.7100

4.12.4 Workers' Compensation Program

The Corporate Risk Management Department establishes the workers' compensation carrier. If a workers' compensation loss occurs, the Corporate Workers' Compensation Analyst handles all communication with the workers' compensation carrier.

This project does NOT participate in an Owner's Controlled Insurance Program or project-specific insurance program. The workers' compensation policy covering Parsons Employees on this project is as follows:

AIG
15 Cornell Drive, 2nd Floor
Latham, NY 12110
877.640.2450
Policy Number: 0007169963

4.12.5 Medical Monitoring

Potential health hazards and potential exposures associated with these projects are zero to minimal and will not require medical monitoring. If new tasks are identified, health hazards and potential exposure will be re-evaluated and medical monitoring may be implemented, if warranted.

EXHIBIT 4-1
SITE-SPECIFIC PROJECT SAFETY PLAN ORIENTATION

Project Name: Tonawanda Coke Site 108

Project Location: 3800 River Road, Tonawanda, New York

Names of Personnel Responsible for Site Safety and Health:

- Program/Project Manager (PrM)- Tom Abrams (315) 741-3716 (cell)
- Program Safety Manager – Bill Moon (315) 323-8715 (cell)
- SSHO - TBD

Site specific safety plan orientation must be conducted with all new site workers prior to beginning any work. The orientation shall be conducted by any of the above-mentioned responsible personnel or their designees. Orientation shall consist of a review of the Parsons Safety Plan and site-specific AHAs.

Emergencies - Call 911 and/or your Supervisor for emergencies. In the event of an evacuation, the assembly points will be determined, located, and shown at the initial site task(s) Safety meeting, and again located and shown when the site tasks are to commence at other locations. Evacuation protocols and procedures will be discussed at these Safety meetings. The sound for an evacuation is three short fog horn blasts.

Incidents - Report all incidents that result in personal injury, property damage, or environmental release and near-miss incidents to your Supervisor and the SSO. Near-miss incidents COULD HAVE been an incident but did not because of a slight change in conditions or luck. However, they have the same causal factors as an incident, so it is just as important to investigate them for identifying solutions to prevent recurrence and share lessons learned. Both incidents and near misses will be reported according to both Honeywell and Parsons procedural protocol.

Workcare - Workcare will be utilized for Parsons Employees and provides 24-hour 7 day a week on-call medical professionals to answer any medical-related questions. These medical professionals also help provide injury assessment and guidance, treatment options, have access to advanced medical personnel, and will assist with suspected work-related injuries.

WORKCARE – 1 (888) 449-7787

Open Door - The management team is committed to an open-door policy and all will make themselves available to any team member at any time for any real or suspected Health, Safety or Environmental concern. Employees should attempt to utilize first line supervisors and the chain of command; however, employees are not prohibited from contacting any management team member should they believe concerns are not or will not be addressed and may do so without fear of retribution.

Communications - For Media Inquiries direct questions to Victoria Strietfeld (Honeywell) 973.455.5281.

Personal Protective Equipment (PPE)

Minimum PPE:

- * Safety glasses with side shields (tinted safety glasses are not permitted during overcast weather, after sundown or inside buildings)
- * Honeywell hard hat (hard hats do not have to be worn during routine site inspections on remediated sites with no construction activities taking place)
- * Steel or composite toe work boots
- * Long pants
- * Minimum of short sleeve shirt (no tank tops or sleeves cut off)
- * High visibility vest or T-shirt
- * Hand protection (task specific – refer to appropriate AHAs)

Additional PPE requirements may include:

- * Dust mask when the potential for elevated dust generation is a concern.
- * Hearing protection – When working in an area where decibel level exceeds 85 for an 8-hour period.
- * PFD (Personal Floatation Device) - To be implemented in areas with water greater than knee deep. When PFD is worn, all connections must be affixed.

Additional Site-Specific Health and Safety Hazards

Identify all activities on-site as being dangerous and having a possibility for an accident. Review with the worker the activities he/she is here to perform. Then, identify all possible hazards and safeguards for those activities. Next, have worker review all AHAs associated with those activities.

Physical Hazards

Slips trips and falls - Site conditions contain multiple walking hazards.

Manual Handling - Hazards presented by manual handling of material, tools or equipment. Individual lifting limits are capped at 50 lbs./person. For repetitive tasks, the NIOSH lifting equation is to be used. Employ the use of mechanical lifting devices or assistance when and wherever feasible.

BIOLOGICAL HAZARDS

Insects - Bees, ticks, mosquitoes, spiders and other insects may be encountered on-site. Notify your supervisor and any SHSO if you possess a known allergy and have been prescribed a personal emergency injection device. You will be required to carry with you any emergency allergic reaction mitigation devices while you will perform work on-site.

Plants - Poison ivy/sumac/oak may exist on-site in wooded areas.

Wildlife - Native wildlife may be encountered onsite such as raccoons, squirrels, opossums, snakes, rats, bats, frogs, mice, deer, coyote, fox, minx, rabbits, turkey, geese and birds, as well as other native species. Animal dens may present physical hazards.

Site Access Control – Personnel reporting to the site must park in the designated parking areas. Only vehicles approved by the SSO may enter the work zone. Site speed limits in any work zone will be set and discussed at the site(s) initial safety meetings.

Cell Phone Usage – Parsons’ policy is no cell phone usage while operating a vehicle or equipment, this includes no hands-free devices.

Training – Site-specific training (PSHEP review and sign off). Copies of the PSHEP and SDS are available to all personnel. Daily safety meetings shall be documented and reviewed by all personnel working at the site. Prior to entering a work site, site workers must report to either the site PM/Field Team Leader/PrSM with valid documentation of the following:

- * Negative drug test and alcohol documentation required annually and random for all personnel active on Honeywell projects

HAZCOM - General Hazard Communication training is provided by your employer. Specific chemicals have been previously covered in this orientation. Site Specific HAZCOM elements are listed below:

SDS Sheets - The SDS Master book is kept in the Team site vehicle. Any chemical brought onsite should be accompanied by the appropriate SDS sheet, sheets should be provided to safety prior to use so an evaluation on any new material can be conducted.

Appropriate PPE - PPE identified on an SDS must be used. If you are unaware of what PPE to use or need any specialized equipment, please inform your supervisor.

Specific Hazards in your Work Area - The sediment material is dynamic and nature with regard to hazards. Hazards specific to your work area will be communicated through your supervision, task specific AHAs, job safety analysis (JSA), and Take 5 Cards.

Gases, Vapors and Fumes - Gases, vapors and fumes may be released from a variety of processes, including:

- Using internal combustion engines
- Fueling vehicles or equipment

Mobile equipment – Use horns to alert others. Mirrors and back-up/travel alarm must be functional on all equipment and vehicles driving on-site. Use a spotter when backing vehicles with blind spots and/or around equipment (i.e., pipe lines, electrical boxes, etc.).

Work permits – It is not anticipated that tasks will require any additional permits. Permit requirements will be evaluated for any new tasks that are identified.

Decontamination - The SSO will determine the proper procedures for personal and equipment decontamination based on the work activities.

Proper Hygiene – Wash hands and face before eating, drinking, and smoking.

GENERAL SAFETY REQUIREMENTS, SITE SAFETY RULES

1. All site personnel must attend each shift's Daily Safety Meeting.
2. Report all incidents (any unplanned or unexpected event that results in personal injury, property damage or environmental release) and “near-miss reports” to your Supervisor or the SHSO. Near-miss incidents COULD HAVE been an incident but didn’t because of a slight change in conditions or luck. However, they have the same causal factors as an incident, so it is just as important to investigate them for identifying solutions to prevent recurrence and share lessons learned.
3. Any individual taking prescribed or over the counter medication that may impair their ability work shall inform the site HSO. The HSO will review the matter with the appropriate personnel to determine if the employee can perform his/her work duties safely while taking the medication.
4. The personal protective equipment specified by the SHSO and in the HASP shall be worn by all site personnel. This includes Level D PPE which must be worn at all times in active work areas. Hardhats are not required for routine monitoring tasks in areas where not construction activities are taking place.
5. Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the facepiece, or temple pieces on glasses. This regulation does not ban facial hair on respirator users, per se, from the workplace. However, when a respirator must be worn to protect employees from airborne contaminants, it has to fit correctly, and this will require the wearer's face to be clean-shaven where the respirator seals against it.
6. All personnel must sign the site log when entering and leaving the site property.
7. Personnel must follow proper decontamination procedures during and at the end of the work shift.
8. Eating, drinking, chewing tobacco or gum, smoking and any other practice that may increase the possibility of hand-to-mouth contact is prohibited in the Exclusion Zone (EZ) or the hot portion of the Contamination Reduction Zone (CRZ).
9. All signs and delineation shall be followed. Such signs and delineations shall not be removed except as authorized by the SHSO.
10. No one shall enter a permit required confined space without a permit, and Confined Space Entry Permits shall be implemented as issued.
11. All personnel must follow Hot Work Permits as issued.
12. All personnel must use the Buddy System in the Exclusion Zone.
13. All personnel must follow the work-rest regimens and other practices as required by the Heat Stress Program.

14. All personnel must follow lockout / tag-out procedures when working on equipment involving moving parts or hazardous energy sources.
15. No person shall operate equipment unless properly trained and authorized.
16. No one may enter an excavation greater than 4ft. deep unless authorized by the Competent Person.
17. Excavations must be sloped or shored properly. Safe means of access and egress from excavations must be maintained.
18. Ladders and scaffolds shall be solidly constructed, in good working condition and inspected prior to use. No one may use defective ladders or scaffolds.
19. Fall protection or fall arrest systems must be in place when working at elevations greater than 6 ft. from temporary working surfaces and more than 4 ft. from fixed platforms.
20. Safety harnesses and lanyards must be approved by the responsible party. The user must inspect the equipment prior to use. No defective personal fall protection equipment shall be used. Preloaded personal fall protection which has been involved in an incident must be recertified prior to re-use.
21. Hand and portable power tools must be inspected prior to use. Defective tools and equipment shall not be used.
22. Ground fault circuit interrupters (GFCI)s shall be used for cord and plug equipment used outdoors or in damp locations. Electrical cords shall be kept out of walkways and puddles unless protected and rated for the service.
23. Improper use, mishandling or tampering with health and safety equipment and samples is prohibited.
24. Horseplay of any kind is prohibited.
25. Possession or use of alcoholic beverages, controlled substances or firearms on any site is forbidden.
26. Use of cell-phones or personal electronic devices is prohibited while performing any work onsite, including the operation of any mobile equipment or motor vehicle.
27. All personnel shall be familiar with the Site Emergency Evacuation Procedures.

DISCIPLINARY PROCEDURES TO ENFORCE COMPLIANCE

General - All project personnel covered by this document are subject to disciplinary action, up to and including termination, for failure to comply with its applicable requirements. Management reserves the right to discharge or remove an employee from the project immediately for offenses that are grossly severe in nature. All project management personnel are responsible for enforcing safety requirements. Subcontractors must implement equivalent disciplinary action programs.

Non-compliance - For minor safety related infractions, as determined by project management personnel, such as failure to wear eye protection, personnel generally will be reminded of site policy verbally and given ample opportunity to comply or for retraining.

Documentation - More severe or repeat offenses may be reported immediately to an individual's supervisor, who will initiate disciplinary action in accordance with each company's policies. Subcontractors may receive notices of violation with additional requirements for compliance.

Continued Repeat Offense - Willful continued failure to comply will result in removal from the site permanently.

RIGHT TO ASK QUESTIONS, REPORT INFORMATION

Media and Local Questions asked of you - The proper response to all questions relating to the site or any work happening on-site is, "I'm not the right person to answer your question." Please refer any visitor to Parsons Site Management personnel.

Reporting and Questions from you - All site workers possess the right to ask questions of, and report information to Parsons.

EMPLOYEE USE OF MEDICATION

Prescription - Any individual taking prescription or over the counter medication which could cause adverse side effects while working, as indicated by their healthcare professional or medication warning label, shall inform the site SSO or Talent Management prior to using such medication. The SO will review the matter with the project Talent Management Lead to determine if the employee can perform his/her work duties safely while taking the medication. We reserve the right, if necessary, to have a 3rd party licensed healthcare professional determine if the use of the medication by the employee will affect the employee's work performance or the health & safety of others".*

- * Craft union represented employees should refer to the project Labor Harmony Agreement for additional specific details on these requirements.

STOP WORK AUTHORITY

Right, Obligation and Responsibility - Stop Work Authority establishes the ‘authority and obligation’ of any individual to suspend a single work task or group operation when the control of HSE risk is not clearly established or understood. In general terms, the stop work authority process involves a stop, notify, correct and resume approach for the resolution of a perceived unsafe condition, act, error, omission, or lack of understanding that could result in an undesirable event.

EXHIBIT 4-2 INCIDENT REPORTING

Employees involved in or witnessing an incident or near-miss incident must immediately report it to the responsible SSO/Field Team Leader, who in turn immediately relays the report to the Parsons PM, and the appropriate subcontractor representatives, per Incident Reporting Requirements included in Attachment A. Near-miss incidents that could cause significant injury or loss of life must also be immediately reported in the same manner. No supervisor may decline to accept or relay a report of injury or significant near-miss incident from a subordinate. The PrSM will report near misses to Honeywell representatives, per Event Reporting Requirements in Appendix B.

Parsons requires that all incidents/accidents be reported within **four hours** to the Market SH&E Director (Jason Townsell Mobile (562) 565-3491] by the Parsons PrM, Tom Abrams (315) 552-9670; Mobile: (315) 263-5109 and PrSM Bill Moon (315) 323-8175. The Industrial Safety Manager is responsible for notifying the Corporate Workers' Compensation Analyst.

Parsons also requires that the PM and/or PrSM report an incident that results in a lost workday case or any fatality, injury of a private citizen, property loss, or damage in excess of \$50,000, or catastrophes require **immediate** notification of the Market SH&E Director (Jason Townsell Mobile (562) 565-3491] The Industrial Safety Manager or Corporate Safety Manager must report any work-related fatalities within eight hours of the event and all work-related in-patient hospitalizations, as well as amputations and losses of an eye, to OSHA within 24 hours of the event.

Bill Moon, PrSM (315) 323-8175 (cell) is available for assistance in addressing documentation and notification. The PM or SSO (who has been trained on Parsons' reporting requirements and Online Safety Reporting System) then prepares and submits the incident information.

INCIDENT INVESTIGATIONS

All incidents and significant near-miss incidents are investigated by an individual or team with training in accident investigation and root cause analysis. Personal injuries involving medical treatment and incidents resulting in more than \$1,000 damage will be verbally reported and submitted on the PWeb using the On-Line Safety Reporting System at <https://pwebtools.parsons.com/safety/IncidentSelect.aspx> within **4 hours**. Additionally, an Incident Investigation Report will be completed to identify root causes and corrective actions to prevent recurrence. Subcontractors must investigate incidents involving their employees or activities and submit an investigation report to the Parsons PM within **48 hours** of an incident. The Parsons Industrial Safety Manager will investigate or assign an investigator to each significant incident. The investigator will submit a final investigation report using the Online Safety Reporting System within **72 hours** of the incident. The PrSM maintains the investigation file. Instructions for entering incidents into the On-Line Safety Reporting System, Parsons Incident/Accident Report Form, Parsons Near Miss Report Form, and Parsons Wallet Card-Incident Reporting Guidelines are located in Attachment A of this report.

EXHIBIT 4-3
ORDER FOR WORK RELATED INJURY/ILLNESS EVAL/TREATMENT

_____ of Parsons
(Employee Name) (Occupation)
is authorized to go to _____ for the following service(s):
(Name of Medical Provider)

Treatment for a Work-Related Injury/Illness for Date of Injury: _____.

In the event the above medical provider determines this injury or condition NOT TO BE WORK RELATED, the employee and Parsons understand that this employee may then be referred by the above medical provider to his/her personal medical doctor.

Employer Information:	Parsons 100 West Walnut Street Pasadena, CA 91124
Workers' compensation carrier:	AIG
Policy No.:	0007169963
Adjusting Office and Telephone No.:	15 Cornell Drive, 2 nd Floor Latham, NY 12110 (877) 640-2450

Comments to Provider: Parsons attempts to provide any modified, alternate, light duty recommended. _____

Authorized Employer Signature Print Name Date

Phone Number Fax Number

Disability slips and return-to-work notifications: Immediately fax to Parsons and provide copy to employee at conclusion of every evaluation/treatment.

Attention Emergency Department: After acute care, please refer patient back to a _____ for follow-up treatment.

(Medical provider—to be completed by Parsons—where permitted by law.)



EXHIBIT 4-4
PARSONS CORPORATION SUBSTANCE ABUSE POLICY

STATEMENT OF POLICY:

Parsons expects all employees to report to work in a fit condition in order to perform their duties at the utmost levels of safety and efficiency. To that end, Parsons expressly prohibits the unlawful manufacture, distribution, dispensing, possession, use, or sale of a controlled substance or alcohol on its premises at any time. Employees are prohibited from being at work under the influence of these substances. Parsons will reasonably accommodate the efforts of an employee to obtain medical treatment for substance abuse and to return to employment thereafter. However, no provisions of this policy will contravene the provision of the Employee Personal Conduct Policy or preclude the corporation from terminating an employee in accordance with this policy.

Parsons has an obligation to safeguard the privacy rights of all employees; however, it is also committed to provide a healthy and safe work environment for all employees and to take reasonable steps to safeguard the health and safety of others and protect the environment in conducting its business.

Safety and Environmental Provisions

In some instances employees may be required to undergo random toxicological tests to ensure their continuing fitness for duty to comply with contract mandated requirements or government regulations, or if performing work at locations where the nature of their duties is such that there is the potential for serious physical injury to themselves, to others, or the general public, or potential for significant damage to property or the environment.

Assignment of employees to such job sites will be done on a voluntary basis. Employees who refuse to participate in the random testing program and whose job duties would normally expose them to random testing will be considered for placement in other positions not requiring random testing. Every reasonable effort will be made to accommodate such transfers; however, if suitable work for which the employee is qualified is not available, the employee will be subject to termination. A positive test result will lead to immediate removal from the site, in addition to either corrective action in accordance with this policy or the employee's termination in accordance with the Employee Personal Conduct Policy.

Searches are another means of protecting the safety of individuals and property at those locations where the nature of the work has the potential for serious injury or damage. Reasonable searches may be conducted of individuals, their personal vehicles, effects, and other areas under the individual's control while at such work sites or engaged in Parsons business at such sites.

Employees will not be detained or searched without their consent. An employee's cooperation in a search at such work sites is a condition of employment. The employee will be required to sign an Acknowledgment and Consent for Random Toxicological Tests and Searches form. Such testing will be performed by the company using qualified contracted agents, or trained employees.

SUBSTANCE ABUSE TESTING - EMPLOYMENT OFFER

No candidate for employment will be subjected to substance abuse testing prior to the receipt of an offer of employment. Offers of employment, regardless of employment category, must contain a contingency regarding satisfactory completion of substance abuse testing. Failure to submit to or pass an examination will result in immediate disqualification from consideration for placement.

EMPLOYEE PERSONAL CONDUCT

All employees are expected to conduct themselves in a manner that ensures a positive, safe and efficient work environment while at Parsons. Improper conduct may be considered either a “General Offense” or a “Major Offense” and may result in disciplinary action, or in appropriate cases, termination. Termination is generally the result of the commission of a major offense, or where previous efforts to bring about correction have failed in terms of major or general offenses.

[Employee Personal Conduct Policy](#)

RESPONSIBILITIES:

The immediate supervisor monitors employee behavior and performance and is alert to problems arising from an employee’s behavior or performance.

Human Resources ensures consistent and uniform application of this policy and, when required, interfaces with supervisor and employee to evaluate performance and behavior.

REFERENCES:

Employee Personal Conduct Policy

APPROVED:

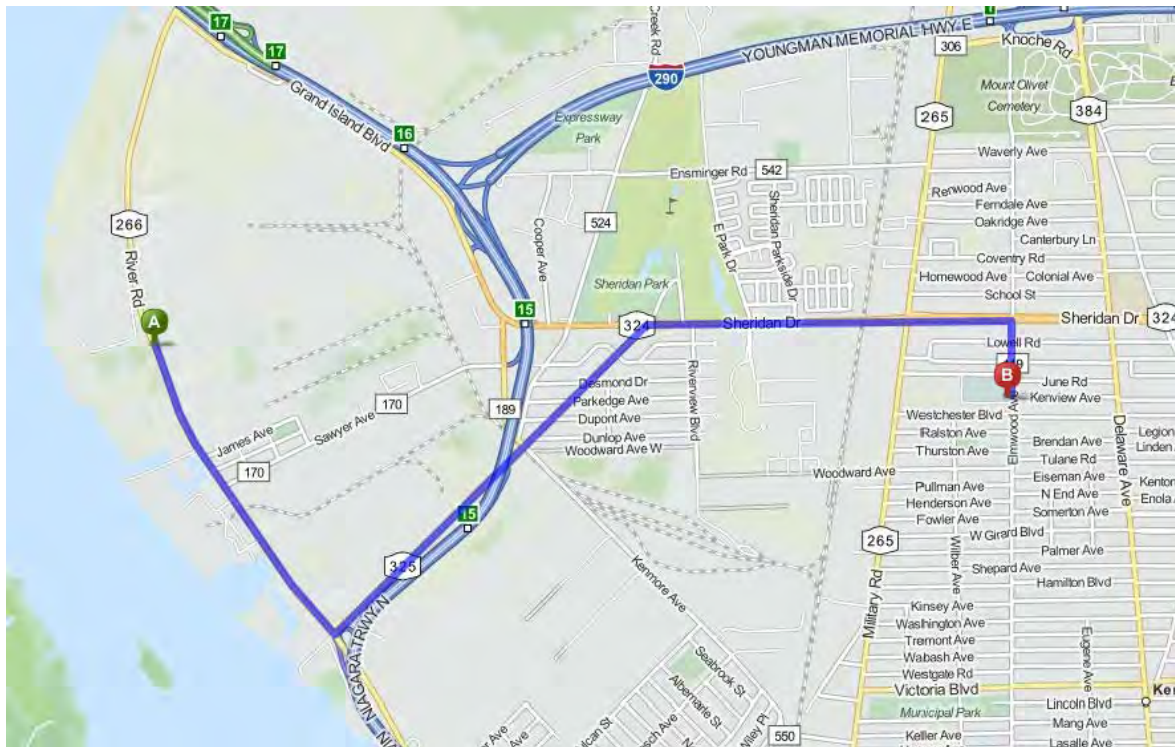
David R. Goodrich

DATE:

5/30/03

EXHIBIT 4-5 ROUTE TO HOSPITAL

Kenmore Mercy Hospital
2950 Elmwood Ave
Kenmore, 14217
716-447-6100



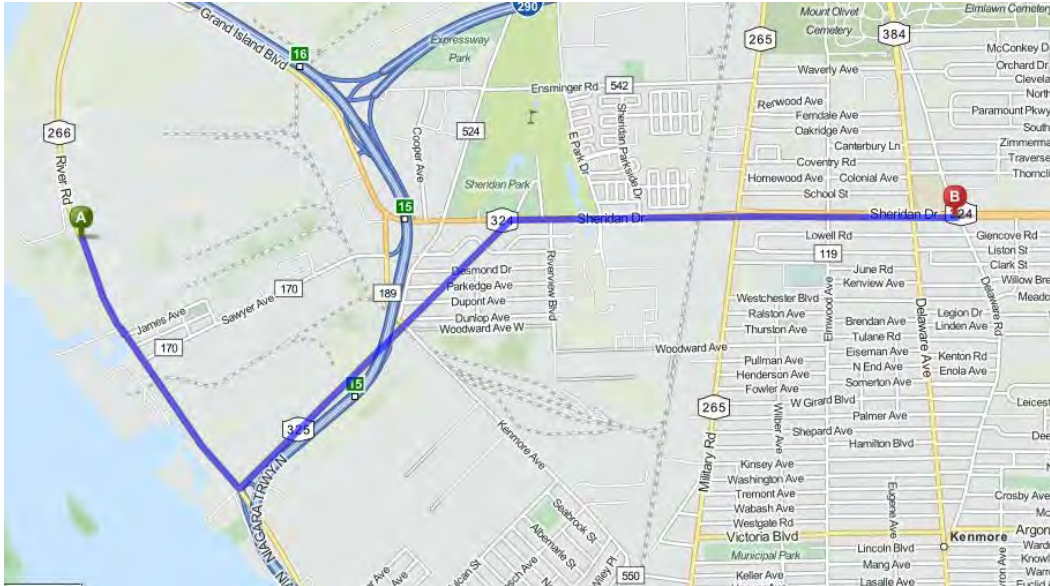
Directions to Kenmore Mercy Hospital

6 minutes/4 miles

1. Start out going south on RIVER ROAD/NY-266 toward James Ave.
2. Turn left onto Sheridan Drive/NY-325
3. Turn slight right onto Grand Island Blvd/NY-324
4. Turn right onto Elmwood Ave/County Highway-119
5. 2950 Elmwood is on the right

NOTE: Transportation of an injured worker to a medical facility for non-emergency treatment must be done by at least two (2) individuals (i.e., driver and observer). If a driver is not available, then a cab service is acceptable as long as an observer is present.

Well Now Urgent Care
1751 Sheridan Dr
Buffalo, NY 14223
716-844-7100



Directions to Urgent Care

10 minutes/5.7 miles

- 1. Start out going south on River Rd/NY-266 toward James Ave*
- 2. Turn left onto Sheridan Dr/NY-325*
- 3. Turn right onto Kenmore Ave/County Hwy-189*
- 4. Turn slight right onto Dunston Ave*
- 5. Enter next roundabout and take the 2nd exit onto Kenmore Ave/County Hwy-550.*
- 6. Turn left onto Military Rd/NY-265*
- 7. Turn right onto Sheridan Dr/NY-324*
- 8. 1751 SHERIDAN DR is on the right*

**EXHIBIT 4-6
WORKCARE ASSESSMENT**

Post-Injury Guidelines

If there is a Life-Threatening or significant medical event e.g. (not breathing, no heartbeat, unconscious, open wound, amputation, obviously broken arm or leg, etc.) then the first employee on the scene should:

- 1) Call for help
- 2) Call 911
- 3) Begin first aid/CPR if trained

Upon notification of a medical emergency the Field Team Leader will:

- 1) Make sure that 1st Aid/CPR trained employees are on scene and assisting the injured.
- 2) Make sure that any ancillary work ceases to make scene safe for responders.
- 3) Make sure that an employee is sent to the gate or entrance area to meet first responders and bring them to the injury scene.
- 4) Contact the Site Safety Officer.

Upon notification of a medical emergency the **Site Safety Officer** will:

- 1) Notify the Emergency Response Team if required.
- 2) Move to the injury scene with required first aid materials and direct the response.
- 3) Assist the first responders with any necessary decontamination or SDS' as needed.

If there is a non-life-threatening illness or injury event e.g. (stain or sprain, stiff back, minor laceration, sore muscle, bruised toe/finger, etc.) then the first employee on the scene should:

- 1) Call for help
- 2) Begin first aid if trained

Upon notification of a non-life-threatening illness or injury event the Field Team Leader will:

- 1) Make sure that 1st Aid/CPR trained employees are on scene and assisting the injured
- 2) Make sure that any ancillary work ceases to make scene safe for responders.
- 3) Contact the Site Safety Officer
- 4) Contact WorkCare and allow the injured employee to speak with a WorkCare doctor or nurse
- 5) Follow WorkCare guidelines; Drive the employee to the clinic if directed and stay with him/her until the visit is concluded
- 6) Provide the employee with "Questions to Consider Asking Your Doctor During a Clinic Visit"
- 7) Provide the employee with "Memo to Treating Medical Professional" prior to the employee going into the exam room.
- 8) Participate in the incident investigation process upon return to the site.

Upon notification of a medical emergency the **Site Safety Officer** will:

- 1) Notify the Shift Emergency Response Team Lead and the contractor CM/PM
- 2) Move to the injury scene with required first aid materials and direct the response
- 3) Assist the Field Team Leader in contacting WorkCare at (888) 449-7787

SECTION 5

PRE-CONSTRUCTION PHASE

5.1 RISK ANALYSIS AND SAFETY SPECIFICATION DEVELOPMENT

Procurement procedures require that a site-specific SH&E risk analysis be conducted before issuance of construction Request for Proposals (RFPs). Using the pre-bid risk analysis checklist, the PM leads this analysis to document existing exposures that may impact the work, surrounding facilities, equipment, workers, or the public at large. The analysis includes locating, documenting, and photographing items such as:

- Overhead and underground power lines
- Sewer and water utilities
- Traffic
- Security
- Fences
- Water hazards
- Existing geographical and environmental conditions
- Damage to ecological or cultural resources
- Risks due to buried items
- Other environmental regulatory requirements

Upon completion of the site risk analysis, high-risk activities are listed in the RFPs (as applicable), and bidders must describe controls and mitigation strategies to address these activities in their proposals. The RFP should note that the list is representative and that the selected contractor must identify and control all work-related hazards, worker exposures and potential environmental incidents. The standard safety specifications are given below.

- Preconstruction SH&E Meeting, Site Specific SH&E Review Checklist, and Project Technical and General Conditions Specification Review - Exhibit 5-1
- Pre-Field Work Safety Meeting Checklist - Exhibit 5-2
- Mobilization/Kick-Off Safety Meeting Checklist - Exhibit 5-3

5.2 PREBID MEETING

Pre-bid meetings are required to ensure that bidders understand the RFP. These meetings must include a discussion of safety, health and environmental performance expectations. During the pre-bid meeting, the PM can use the [Preconstruction SH&E Meeting, Site Specific SH&E Review Checklist, and Project Technical and General Conditions Specification Review \(3 Sheets\)](#) (Exhibit 5-1) to review the project SH&E philosophy, principles, and Parsons requirements with prospective bidders. Although this information is included in the RFP, the meeting reinforces the message.

5.3 SUBCONTRACTOR PREQUALIFICATION REVIEW

Project procurement procedures require that all subcontractors submit prequalification documentation for evaluation. The PM or PrSM conducts the safety prequalification evaluation in accordance with the online CSE system. Subcontractors are required to provide safety information to complete their CSE on an annual basis. The provided information is reviewed by a safety manager and the subcontractor receives a safety grade. A “C” or “D” grade may require additional mitigation measures to allow the subcontractor to work on-site.

5.4 PRE-CONSTRUCTION MEETING

The PM holds a pre-construction meeting before the subcontractor begins work. The meeting includes subcontractor representatives, the Parsons PM, the contract manager, and representatives from all construction disciplines, including safety. During the SH&E review, meeting participants review specific SH&E concerns, the pre-bid risk analysis, and competent person and site-specific SSHEP requirements. The PM provides the SH&E Point of Contact and emergency management information. The PM uses the [Preconstruction SH&E Meeting, Site Specific SH&E Review Checklist, and Project Technical and General Conditions Specification Review \(3 Sheets\)](#) (Exhibit 5-1) to document the meeting. *See ESHARP Guidebook, Volume 1 – Project, Section 6 for further detail.*

5.5 COMPETENT PERSON SUBMISSION REVIEW

Parsons and its subcontractors must identify the OSHA-regulated and certified competent persons for work or tasks that require this level of expertise. The supervisor of the competent person must certify the specific competencies of the named competent person in writing.

The supervisor and competent person sign and submit the [Competent Person Form](#) (Exhibit 9-1) to the Parsons PM. (Note click on this link for the [Subcontractor Competent Person Form](#)).

5.6 SUBCONTRACTOR SAFETY PLAN SUBMISSION REVIEW

5.6.1 Site-Specific Subcontractor Safety, Health, and Environmental Plans (SSHEP)

At least 10 days before work begins, each subcontractor must submit two copies of its SH&E program to the Parsons PM for review. The PM and PrSM review the plan to ensure that it meets Parsons’ requirements.

If a contractor needs assistance developing a SSHEP, the PrSM can provide an electronic copy of a Model SSHEP (Appendix A2).

The subcontractor safety plan must address the following elements:

- Responsibilities
- SH&E compliance
- Communication
- Hazard Assessment
- Hazard Correction

- Risk of environmental incident
- Environmental controls
- Engineering controls
- Control measures to prevent environmental incident
- Incident investigation
- Training and instruction
- Recordkeeping
- The plan must include all applicable requirements of Parsons PSHEP, OSHA CFR 1910/1926 and applicable federal, regional, state, municipal, and/or local environmental regulation scope of work evaluation describing sequence of work and associated hazardous or environmentally risky activities
- AHA including evaluation of environmental risks
- Site employee SH&E orientation program to address location-specific issues
- Site-specific Emergency Action Plan that includes a list of key management personnel and contact information (home, office, project site, and cellular telephone numbers).
- Site-specific Medical Emergency Plan that lists qualified First Aid personnel by name and includes copies of their current certificates
- List of key line management personnel, by name and position, who will enforce the plan
- List of key competent or qualified personnel by name and copy of current documentation identifying specific certified competency (e.g., scaffolding, excavations, fall protection)
- A written progressive disciplinary program for violations of SH&E procedures
- Trenching and Shoring Plan (if applicable)
- 100% Fall Protection Plan (if applicable)
- Waste and hazardous material management (if applicable)
- Control measures for storm water and other wastewater discharges (if applicable)
- Identification of risks and control measures for activities that could involve environmental spills/releases
- Measures to address any other environmental regulatory requirements
- Contractor task hazard and risk planning
- Subcontractor weekly SH&E planning submission
- Contractor daily task SH&E planning

5.7 PRE-MOBILIZATION SH&E MEETING

Project Managers, or their designee, conduct the Premobilization SH&E Meeting on or before the first day of subcontractor mobilization in the field at the work site. (*See ESHARP Guidebook, Volume 1 - Project, Section 11 for additional details.*) Exhibit 5-2, [Subcontractor Premobilization Safety Meeting](#), shows the checklist used for the SH&E portion of this meeting. The meeting includes a review of the pre-bid site/area risk analysis and a walk through of the work area to locate items on the Pre-Bid Risk Analysis Checklist.

**EXHIBIT 5-1
PRECONSTRUCTION SH&E MEETING
SITE-SPECIFIC SH&E REVIEW CHECKLIST
PROJECT TECHNICAL AND GENERAL CONDITIONS SPECIFICATION REVIEW
(SHEET 1 OF 3)**

Date:	
Subcontractor Representative:	
Phone:	
Project Location:	
Parsons Project Manager:	
Phone:	
Subcontractor Safety & Health Representative:	
Phone:	
Parsons Safety & Health Manager:	
Phone:	
Subcontractor Environmental Representative:	
Phone:	
Parsons Environmental Representative:	
Phone:	
<p>This checklist supports the identification of work activities and programs in a preconstruction SH&E meeting. This list also includes items identified through the subcontractor review and high-risk activities identified through the project specification review.</p> <p>High-risk activities (denoted with an asterisk) checked with a checkmark must be followed up during the construction phase with training, written plans and/or a specific Activity Hazard Analysis (AHA).</p> <p>This list should be reviewed with prospective bidders during the pre-bid meeting.</p> <p>NOTE: Use check box and add specifics and details as applicable (next to the callouts)</p>	
SAFETY & HEALTH\	
<input type="checkbox"/>	Site-Specific Safety, Health and Environmental Plans
<input type="checkbox"/>	Competent/Qualified Person Documentation
<input type="checkbox"/>	SH&E Audits/Inspections
<input type="checkbox"/>	Subcontractor Responsibilities
<input type="checkbox"/>	Site Orientation Requirements
<input type="checkbox"/>	Preconstruction SH&E Meeting/Date
<input type="checkbox"/>	Crane Inspection Certification
<input type="checkbox"/>	Personal Protective Equipment (PPE) (Work activities or work site requires hearing protection/using respirators/special protective clothing/other)
<input type="checkbox"/>	Public Exposure (Work activities or location requires special precautions to protect the public)
CONSTRUCTION SAFETY ISSUES	

**EXHIBIT 5-1
PRECONSTRUCTION SH&E MEETING FORM
SITE-SPECIFIC SH&E REVIEW CHECKLIST
PROJECT TECHNICAL AND GENERAL CONDITIONS SPECIFICATION REVIEW
(SHEET 2 OF 3)**

CONSTRUCTION SAFETY ISSUES (Contd.)	
<input type="checkbox"/>	Steel Erection (SENRAC Requirements)
<input type="checkbox"/>	Excavations/Trenching
<input type="checkbox"/>	Powered Industrial Trucks, Fork Lifts
<input type="checkbox"/>	Crane Work/Heavy Lifts, Rigging
<input type="checkbox"/>	Work involving Hazardous Materials
<input type="checkbox"/>	Electrical Tie-ins/Lockout – Tagout
<input type="checkbox"/>	Aerial Lift Work – Scissor Lifts, Extendable Boom, etc.
<input type="checkbox"/>	Underground, Caissons, Cofferdams
<input type="checkbox"/>	Scaffold Erection/Work
<input type="checkbox"/>	Demolition
<input type="checkbox"/>	Marine Work/Live Boating
<input type="checkbox"/>	Heavy Hauling
<input type="checkbox"/>	Concrete
<input type="checkbox"/>	Diving
<input type="checkbox"/>	Work Adjacent to Production Areas
<input type="checkbox"/>	Site Security/Visitor Control/Public Areas
<input type="checkbox"/>	Process Safety Management
<input type="checkbox"/>	Permits (Excavations, Scaffolding, Demolition, Traffic, Confined Space, Hot Work, Line Breaking, etc.)
<input type="checkbox"/>	Confined Space (Confined space entry is required)
<input type="checkbox"/>	Welding and cutting (Acetylene/gas cutting, arc welding, soldering and brazing)
<input type="checkbox"/>	Ladders (Portable ladder use is required)
<input type="checkbox"/>	Traffic Control (Work is on or near highways, roads, or mass transit)
MEDICAL	
<input type="checkbox"/>	Substance Abuse Screening
<input type="checkbox"/>	Emergency Procedures
<input type="checkbox"/>	Site Security
<input type="checkbox"/>	Smoking Policy
<input type="checkbox"/>	Medical Services Requirements
<input type="checkbox"/>	Treatment Locations, Addresses, and/or Phone List
ENVIRONMENTAL	
<input type="checkbox"/>	Environmental Hazards
<input type="checkbox"/>	Air Pollution/Emissions and required reporting
<input type="checkbox"/>	Wastewater Discharges
<input type="checkbox"/>	Drinking Water
<input type="checkbox"/>	Management of Hazardous Materials and Hazardous and Solid Wastes
<input type="checkbox"/>	Emergency Response to Spills and Releases Environmental Assessments
<input type="checkbox"/>	Protected Ecological and Cultural Resources
<input type="checkbox"/>	Specific Reports on Toxic or Hazardous Chemicals Usage and Storage (Required by Environmental Regulation)

**EXHIBIT 5-1
PRECONSTRUCTION SH&E MEETING FORM
SITE-SPECIFIC SH&E REVIEW CHECKLIST
PROJECT TECHNICAL AND GENERAL CONDITIONS SPECIFICATION REVIEW
(SHEET 3 OF 3)**

ENVIRONMENTAL (Contd.)		
<input type="checkbox"/>		Materials to be Recycled
<input type="checkbox"/>		Possibility of Buried Items Onsite (cultural artifacts, tanks, wastes, and ordinance) and what to do if encountered
<input type="checkbox"/>		Environmental Regulatory Requirements
<input type="checkbox"/>		Environmental Assets
<input type="checkbox"/>		Resource Conservation/Sustainability
<input type="checkbox"/>		Insects
<input type="checkbox"/>		Plants
<input type="checkbox"/>		Wildlife
<input type="checkbox"/>		Medical Waste and Other Biohazards
Additional Notes/Comments:		
ATTENDEES		
Name	Title	Company

**EXHIBIT 5-2
STANDARD PRE-FIELD WORK SAFETY MEETING CHECKLIST**

Date: _____	Project/Location: _____
Subcontractor _____	Parsons Project _____
Representative: _____	Manager: _____
Phone: _____	Phone: _____
Subcontractor Safety _____	Parsons Safety _____
Rep: _____	Manager: _____
Phone: _____	Phone: _____

The following items were identified and reviewed with the subcontractor.

Health & Safety	Medical
Site-Specific Safety Plans/Model Program _____	Substance Abuse Screening _____
Competent/Qualified Person Documentation _____	Emergency Procedures _____
Safety Audits/Inspections _____	Site Security _____
Subcontractor Responsibilities _____	Smoking Policy _____
Site Orientation Requirements _____	Medical Services Requirements _____
Mobilization/Kickoff Safety Meeting/Date _____	Treatment Locations/Addresses/Phone List _____
Crane Inspection Certification _____	Other _____
Personal Protective Equipment (PPE) _____	
Environmental Hazards _____	
Other _____	

Additional Notes/Comments:

**EXHIBIT 5-3
MOBILIZATION/KICK-OFF SAFETY MEETING**

PROJECT INFORMATION			
Project Name:		Meeting Date:	
Project Location:		Project Number:	
Scope of Work Covered In This Meeting			
MEETING ATTENDANCE			
Name (print)	Signature	Title or Project Role	Company

1. Honeywell Safety Vision – Review and reaffirm vision and beliefs as outlined in Section 1.0 of the HSP² program.
2. Project Safety Goals and Objectives
 - Total Incident Rate (TIR) target of _____
 - Lost Workday Incident Rate (LWIR) target of 0.0
3. Scope Of Work and Highly Hazardous Activities - Review key safety issues associated with highly hazardous activities.
 - Line breaking (process piping LOTO)
 - Work that may disrupt or damage existing piping, vents, drains (LOTO).
 - Any work on equipment that requires LOTO.
 - Major excavations (>5' deep or potential for damage to underground utilities)
 - Roof activities
 - Elevated work >6' that will not be done from manlifts or scaffolds
 - Hazardous painting or coating (epoxy paints, electro-static painting, cocooning, etc.)
 - Structural steel erection
 - Use of ladders above 24 feet.
 - Confined Space Entry (permit-required)
 - Any work within 20' of overhead power lines
 - Critical Crane Picks (>80% of rated capacity, multiple cranes on a single pick, near power lines, picks over occupied buildings, and picks of long-lead or specialized equipment.)
 - Other:
4. Honeywell Specification 01620 - Verify that copies were received by subcontractors and address any questions.
5. Incident Reporting Requirements
6. Drug & Alcohol Testing Requirements
7. Commitment to Light Duty work and the location of Industrial Medical Associates (IMA)
8. Safety Planning Requirements - Review the development and use of Project Safety, Health, and Environmental Plans (PSHEPs) and Job Safety Analyses (JSAs).
9. Safety Meetings - Review requirements related to daily safety meetings and Weekly Toolbox Safety Meetings. Review the use of daily Pre-Task Planners
10. Roles and Responsibilities
11. Other Site-Specific Safety Issues

SECTION 6

FIELD OPERATIONS

6.1 SITE RISK ANALYSIS

Before work begins, PMs lead a team that performs a risk analysis at each work site to identify hazards and risks that require specific control measures. During the weekly action item meeting, the project team discusses upcoming work tasks and associated risks and control measures. The weekly action item list generated during this meeting identify upcoming mobilization or demobilizations tasks, audits and inspections, competent person changes, training and new activities requiring an AHA. The project team and subcontractors also submit a Two-Week Look Ahead each week to identify upcoming tasks and assess if the new activities require a new or revised AHA.

As a part of the site risk analysis process, a risk register was developed, identifying potential hazards and evaluating the associated risks. This centralized, continually updated document also contains a list of controls to be implemented to reduce the risk of planned activities to an acceptable level. The project-specific risk register is included as Attachment G.

6.1.1 Chemical Hazards

Activities are being completed on sites where remedial construction activities have been completed or where contaminant concentrations are below remedial criteria. Risk of exposure to site workers is zero to minimal.

6.1.2 Physical Hazards

Physical hazards that may be encountered during the construction activities include, but are not limited to heat stress, cold-related illness, ultra-violet radiation, biological, and noise hazards.

Heat Induced Illness – Heat Stress:

The use of protective equipment may create heat stress. Monitoring of personnel wearing personal protective clothing should commence when the ambient temperature is 70 degrees Fahrenheit (°F) or above. Table 6.1 presents the suggested frequency for such monitoring. Table 6.2 presents the apparent temperature for given humidity and ambient temperature readings in shade. Monitoring frequency should increase as ambient temperature increases or as slow recovery rates are observed. Heat stress monitoring should be performed by a person with a current first aid certification who is trained to recognize heat stress symptoms. For monitoring the body's recuperative abilities to excess heat, one or more of the following techniques will be used. Other methods for determining heat stress monitoring, such as the wet bulb globe temperature Index from American Conference of Governmental Industrial Hygienist Threshold Limit Values Booklet can be used.

To monitor the worker, measure:

- Heart rate. Count the radial pulse during a 30-second period as early as possible in the rest period.

- If the heart rate exceeds 100 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same.
- If the heart rate still exceeds 100 beats per minute at the next rest period, shorten the following work cycle by one-third.
- Oral temperature. Use a clinical thermometer (3 minutes under the tongue) or similar device to measure the oral temperature at the end of the work period (before drinking).
 - If oral temperature exceeds 99.6°F (37.6 degrees Celsius (°C)), shorten the next work cycle by one-third without changing the rest period.
 - If oral temperature still exceeds 99.6°F (37.6°C) at the beginning of the next rest period, shorten the following cycle by one-third.
 - Do not permit a worker to wear a semi-permeable or impermeable garment when oral temperature exceeds 100.6°F (38.1°C).

Prevention of Heat Stress - Proper training and preventative measures will aid in averting loss of worker productivity and serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress the following steps should be taken:

- Adjust work schedules.
 - Modify work/rest schedules according to monitoring requirements.
 - Mandate work slowdowns as needed.
 - Perform work during cooler hours of the day, if possible, or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat, i.e., 8 fluid ounces (0.23 liters) of water must be ingested for approximately every 8 ounces (0.23 kilograms) of weight lost. The normal thirst mechanism is not sensitive enough to ensure that enough water will be ingested to replace lost sweat. When heavy sweating occurs, encourage the worker to drink more. The following strategies may be useful:
 - Maintain water temperature 50° to 60°F (10° to 16.6°C).
 - Provide small disposal cups that hold about four ounces (0.1 liter).
 - Have workers drink 16 ounces (0.5 liters) of fluid (preferably water) before beginning work.
 - Urge workers to drink a cup or two every 15 to 20 minutes, or at each monitoring break. A total of 1 to 1.6 gallons (4 to 6 liters) of fluid per day are recommended, but more may be necessary to maintain body weight.
- The best prevention method for heat induced illnesses is to train personnel to recognize the symptoms. Avoid extended site tours when temperature and relative humidity are

high. Perform site tour during cooler hours of the day if possible. Go to air-conditioned building or shaded area during periods of rest (field support trailer).

Cold-Related Illness:

If work on this project is conducted during the winter months, thermal injury due to cold exposure can become a problem for field personnel. Systemic cold exposure is referred to as hypothermia. Local cold exposure is generally called frostbite.

Hypothermia - Hypothermia is defined as a decrease in the patient core temperature below 96°F. The body temperature is normally maintained by a combination of central (brain and spinal cord) and peripheral (skin and muscle) activity. Interference with any of these mechanisms can result in hypothermia, even in the absence of what normally is considered a "cold" ambient temperature. Symptoms of hypothermia include: shivering, apathy, listlessness, sleepiness, and unconsciousness.

Frostbite - Frostbite is both a general and medical term given to areas of local cold injury. Unlike systemic hypothermia, frostbite rarely occurs unless the ambient temperatures are less than freezing and usually less than 20°F. Symptoms of frostbite are: a sudden blanching or whitening of the skin; the skin has a waxy or white appearance and is firm to the touch; tissues are cold, pale, and solid.

Working on Water in Cold Weather - If air temperature is below 50 deg F and water temperature is below 50 deg F, either Mustang suits, exposure suit, wet suit, or other type of survival suit is required for small craft (16 ft. and below) or craft with no side rails in lieu of PFDs.

Prevention of Cold-Related Illness - To prevent cold-related illness:

- Educate workers to recognize the symptoms of frostbite and hypothermia
- Identify and limit known risk factors
- Implement the requirement for wear of the full-body marine exposure suits for all Parsons and subcontractor personnel for on the lake boating operations during cold weather months
- Assure the availability of enclosed, heated environment on or adjacent to the site
- Assure the availability of dry changes of clothing
- Assure the availability of warm drinks
- Allow employees to take a warming break if they are shivering

Any person developing moderate hypothermia (a core temperature of 92°F) cannot return to work for 48 hours.

Ultraviolet Radiation:

The sun emits ultraviolet radiation (UV) as heat and light. The skin's natural defense mechanisms attempt to reject the UV by distributing melanin pigmentation where needed. However, overexposure to direct sunlight can cause inflammation or blistering of the skin (sunburn). The use of sunscreen, long sleeve shirts, and wide brim hats can help prevent sunburn.

Chronic exposure to UV radiation is known to cause skin cancer. In case of sunburn, do not apply burn ointment, cold cream, or butter to relieve pain. Use a dry dressing and get medical attention for severe, extensive sunburns. Also watch for dehydration. If a person is dehydrated, try and keep their fluid volume at their normal level.

Electrocution:

All heavy equipment will be kept a safe distance from live sources of electricity. All subsurface and overhead electrical sources and lines will be identified before ground disturbance activities commence. Where possible and/or practical, electric lines and sources will be deactivated or insulated before ground disturbance activities commence. Personnel should remain at a safe distance from equipment when not performing work to prevent the risk of injury from electrical arcing when high-voltage surges and spikes cause arcing in electronic circuits.

Ground fault circuit interrupters will be utilized on electrical equipment, where applicable, and extension cords will be inspected for splices, taps, and breaks in its outer cover insulation. If splices, taps, or breaks are noted on an extension cord, it shall not be used and it will either be removed from the site or cut up and rendered unusable.

Noise:

Noise is generated during construction activities in such operations as transportation of materials and operation of heavy construction equipment. Hearing protection will be worn by personnel to protection against the effects of hazardous noise exposure whenever sound-pressure levels exceed 85 dB(A) steady-state expressed as a time-weighted average. Personnel operating or working around heavy equipment should wear hearing protection.

Vehicle Traffic:

Vehicle traffic may include cars, trucks, and heavy equipment operated by contractors, subcontractors, or visitors to the site. Drivers should approach building corners with extreme caution as many of the buildings have blind corners making it extremely difficult to see intersection traffic. All heavy equipment should have a back-up alarm or drivers should honk to signal when they are backing up or when approaching blind corners. The speed limit at the site is 5 miles per hour on the causeway and 10 miles per hour everywhere else on-site.

Drivers are not permitted to use any communications device (e.g., cell phone) while driving. The driver and all passengers must use seatbelts in all moving vehicles at all times. A vehicle inspection of the tires, lights, horn, wipers, and backup alarm should be completed each day.

Project activities include installing road-side safety barriers along select public roadways. Road-side safety barrier work shall be completed by a New York Department of Transportation (NYSDOT) registered contractor. NYSDOT specified traffic control safety protocols will be implemented in association with all works performed within NYSDOT alignment property.

6.1.3 Biological Hazards

Biological hazards can result from encounters with mammals, insects, snakes, spiders, ticks, plants, parasites, and pathogens. Mammals can bite or scratch when cornered or surprised. The bite or scratch can result in local infection or infection with systemic pathogens or parasites. Insect and spider bites can result in severe allergic reactions in sensitive individuals. Exposure to poison

ivy, poison oak, or poison sumac results in skin rash. Ticks carry a number of serious diseases. Dead animals, organic wastes, and contaminated soil and water can harbor parasites and pathogens. Spent needles and/or syringes could be infected with potential blood or other infectious materials that could carry serious diseases.

Poison Ivy:

Some of the most common and severe allergic reactions result from contact with poison ivy, poison oak, or poison sumac. Contact with the poisonous sap of these plants produces a severe rash characterized by redness, blisters, swelling, and intense burning, and itching. The victim also may develop a high fever and may be very ill. Ordinarily, the rash begins within a few hours after exposure, but it may be delayed for 24 to 48 hours.

Ticks:

Ticks are common during the spring and summer throughout the work area when off any paved area. Two types of ticks may be encountered: the dog tick and the deer tick. The dog tick is the larger, more common tick. After biting, the dog tick will remain attached to the victim until engorged with blood. Dog ticks may transmit Rocky Mountain spotted fever and other diseases. The deer tick is much smaller, ranging from poppy seed to grape seed size, and does not remain attached to the skin for very long after biting. Deer ticks can transmit Lyme disease, which can have serious, long-term health effects if left untreated. Lyme disease is often characterized by a bulls-eye type rash; light in the center with an outer red area. Flu-like symptoms may also occur. These signs may occur at different times and the rash may not appear. If you discover any bites on the skin, wash the affected area and seek medical attention if a rash or flu-like symptoms appear.

Bees, Wasps, Hornets, and Other Insects:

Symptoms of an insect bite are normally a sharp, immediate pain in the body part bitten. Report any significant bite immediately. Poisonous insects and insect-like creatures that may be encountered around the work areas include the following:

- Bees (honeybees, bumble bees, sweat bees, wasps, and hornets)
- Caterpillars
- Beetles/Bugs
- Mosquitoes

Spiders:

The two poisonous spiders that may be encountered during the construction project are the Brown Recluse and the Black Widow. The Brown Recluse is up to one inch long with a violin or “fiddle” shaped mark on the top of the head. The Black Widow is a smaller, bulbous black spider with a red hourglass-shaped mark on the underside.

Reactions to a Brown Recluse spider bite include mild to severe pain within two to eight hours and a star shaped area around the bite within three to four days. Significant tissue death and loss accompanies a Brown Recluse spider bite. Reactions to a Black Widow spider include intense pain at the site of the bite after approximately 15 to 60 minutes, followed by profuse sweating, rigid

abdominal muscles, muscle spasms, breathing difficulty, slurred speech, poor coordination, dilated pupils, and generalized swelling of face and extremities.

Persons that have been bitten by a Brown Recluse or Black Widow spider should be immediately transported to a hospital. The spider should be collected (if possible) for confirmation of the species.

Personnel will be alert to the potential for spider bites. Spiders sometimes establish residence in stored clothing and PPE. It is advisable for personnel to inspect clothing and PPE for spiders prior to donning.

Blood Borne Pathogens:

Blood borne pathogens enter the human body and blood circulation system through punctures, cuts or abrasions of the skin or mucous membranes. They are not transmitted through ingestion (swallowing), through the lungs (breathing), or by contact with whole, healthy skin. However, under the principle of universal precautions, all blood should be considered infectious, and all skin and mucous membranes should be considered to have possible points of entry for pathogens. See Attachment F for further details regarding BBPs site requirements, exposure prevention, vaccination, exposure incident reporting, exposure incident response, training and documentation.

6.1.4 Environmental Hazards

Slip, Trip, and Fall Hazards:

The site may contain slip, trip, and fall hazards for site workers, such as:

- Wet and slippery surfaces
- Holes, pits, tree roots, or ditches
- Slippery surfaces
- Steep grades
- Uneven grades
- Sharp objects, such as nails, metal shards, needles and broken glass

Site inspections are required to be performed in the manner and frequency described in Section 4.6. The Exhibit 6-1 checklist can be used as site inspection form to document safe work areas and walkways and general housekeeping. This inspection can be used to identify hazards that can contribute to tripping hazards.

Thunderstorm Hazards:

During the course of field operations, severe weather may be encountered, including thunderstorms, lightning, rainstorms, and other unsafe weather conditions (i.e., high winds and tornadoes). Criteria indicating that severe weather conditions may exist include:

- High winds (greater than 40 miles per hour – depending on the tree cover and other site specific conditions)
- Tornado watch or warning in place for the area including the site
- Visible lightning

- Extreme temperatures (e.g., greater than 100 degrees F)
- Heavy rainfall that makes footing treacherous and visibility difficult

If severe weather is approaching, personnel will secure the location, secure the equipment, stop all work activities and go to a designated safe location. The SSO and CM will determine if weather conditions allow for restart of work activities. Monitor weather radio and if possible monitor weather radar via internet.

All water activities will cease during a thunder or lightning storm. All personnel must get off the water as quickly and safely as possible. All activities will cease for 30 minutes after the last thunder or lightning.

If weather conditions allow for restart of work activities, a visual inspection will be performed to check for damage or hazards caused by the storm. If damage is noted, activities will be evaluated and corrective actions to fix, repair or eliminate the hazard will be completed prior to start of any activities.

6.1.5 Fire Hazards

Although fires and explosions may arise spontaneously, they are more commonly the result of carelessness during the conduct of site activities, such as moving drums, mixing/bulking of site chemicals and during refueling of heavy or hand held equipment. Some potential causes of explosions and fires include:

- Mixing of incompatible chemicals, which cause reactions that spontaneously ignite due to the production of both flammable vapors and heat
- Ignition of explosive or flammable chemical gases or vapors by external ignition sources
- Ignition of materials due to oxygen enrichment
- Agitation of shock or friction-sensitive compounds
- Sudden release of materials under pressure

Working On or Near Water

During the course of the project a major amount of the work will be conducted on or around water. Any work conducted within 6 ft. of the water's edge will require workers to wear a Coast Guard approved PFD. Prior to commencement of any activities on the water, watercraft will be inspected, radio communication with shore personnel will be established, rescue procedures reviewed, and Coast Guard approved PFDs issued to workers. All equipment and operating personnel will meet or exceed U.S. Coast Guard requirements for safety. Prior to performing work on the water, a float plan and applicable AHAs will be completed and reviewed by boating personnel.

6.2 FIVE HAZARD CONTROL MEASURES – ORDER OF PRECEDENCE

Site SH&E hazards and risks are controlled using one or more of the control measures listed below in order of precedence:

- Engineer/design to eliminate or minimize hazards. A major component of the design phase is to select appropriate features to eliminate a hazard/risk and render it fail-safe or provide redundancy using backup components.
- Guard the hazard. Hazards that cannot be eliminated by design must be reduced to an acceptable risk level by guards or isolation devices that render them inactive.
- Provide warnings. Hazards or risks that cannot be totally eliminated by design or guarding are controlled through using a warning or alarm device.
- Provide special procedures or training. When design, guarding, or warnings cannot eliminate hazards/risks, subcontractors must develop procedures, training, and audits to ensure safe and environmentally compliant completion of work. Training cannot be a substitute for hazard elimination when life-threatening hazards are present.
- Provide PPE. To protect workers from injury, the last method in the order of precedence is the use of PPE, such as hard hats, gloves, eye protection, life jackets, and other protective equipment with the understanding that bulky, cumbersome, and heavy PPE is often discarded or not used, rendering this method ineffective without proper controls.

6.3 ACTIVITY HAZARDS ANALYSIS

Parsons and its subcontractors are required to conduct an AHA for all aspects of the work. An AHA includes the following steps:

- Identify the task and break it down into steps.
- Identify the hazards associated with each step.
- Identify the specific hazard control measure used for each step in accordance with the order-of-precedence method of control.

PMs can use the following list to determine the construction/operations AHAs for various high-hazard operations and critical tasks.

- Premobilization inspection. Conduct an initial site inspection for pre-job planning. The inspection should cover potential exposures such as the location of electrical lines, underground utilities, nearby structures, traffic conditions, site security needs, public exposures general liability, and other potential exposures. Environmental risks should be included in this inspection (e.g., potential for wastewater discharges, adequacy of planned storm water controls, planned hazardous materials/waste management, measures to prevent spills/releases).
- Water, wastewater, and marine work. Analyze work adjacent to, in, or over water (including lakes, canals, dams, treatment plants, water tanks, clarifiers, and reservoirs).
- Traffic controls. Internal traffic control plans should include ways to restrict the number of vehicles on-site, the flow of vehicles through the site, haul roads, speed controls,

subcontractor employee parking areas, merging of site traffic with local vehicle traffic, pedestrian controls in traffic zones, access by emergency vehicles and operator controls. Plan traffic controls for delivery of equipment or materials and equipment operations. Control measures include warning signs, flagmen, traffic stoppage and control, and unloading procedures.

- Material storage. Consider where materials and equipment will be stored on-site, and labeling and signage requirements. Implement measures to protect against vandalism and theft. Also consider the hazards that may exist for workers and the environment when storing or retrieving materials.
- Material handling. Consider the size and weight of loads, how equipment will be used, how equipment is set up and protected, and safety and maintenance inspections of material handling and rigging equipment. Consider to employee training in use of the equipment and ergonomic issues when engaged in manual material handling activities.
- Heavy equipment controls. Evaluate the use of heavy equipment in operations such as site clearing, grading, excavation, or lifting. Controls should include equipment alarms, use of qualified operators, pre-use inspections, and OSHA, regional, municipal, and local regulatory requirements.
- Fall protection. Use fall protection when employees are working above the normal work surface level. Consider how and where ladders, scaffolding, work platforms, or lifts (including scissors lifts or bucket lifts), roofing work, and leading edges are used. Evaluate protective measures such as Fall Protection Plans, use of personal fall arrest systems, and work surfaces for slip and fall hazards and protection.
- Consider operations where PPE is required and the type required, e.g., eye, head, foot, respiratory, hearing and hand protection, and types of special protective clothing.
- Portable hand and power tools. Evaluate tools to be used and the ways that workers can be protected from the hazards associated with their use. Consider tool maintenance requirements, electrical requirements, use of ground fault circuit interrupters, grounding, extension cords, tool inspection procedures, and employee training.
- Employee training. Review the safety training needs of employees. Training should include initial site SH&E orientations and hazard communication training. Some operations (e.g., excavation, blasting, scaffold erection, tunneling, confined space, heavy equipment operations, handling hazardous materials, storm water and waste water management, response to spills/releases, waste management, and hazardous plant process operations) may require special training that should be checked and evaluated.
- Mechanical, electrical, and piping. Evaluate all work associated with the installation, repair and maintenance of mechanical, piping and electrical work for interferences, lockout/tagout, line break procedures, and applicable customer requirements.

Exhibit 6-2 is an [AHA Example](#). Exhibit 6-3 contains the [AHA Template](#).

6.4 OM&M SITE INSPECTION

As discussed in Section 4.6, the PM, or their designee conducts weekly site inspections. Additional inspections will also be completed when a significant task is being performed (e.g.,

soil/sediment sample collection, sample surface water collection, major restoration efforts by subcontractor, etc. If the PM is not on-site, the most senior person on-site will conduct the inspection. An example site inspection checklist is provided as Exhibit 6-1. Site inspections are a protocol designed to identify and correct unsafe acts or conditions in the scope of work conducted by either Parsons or any subcontractor. The PrSM maintains the original audit documentation on file and forwards results of the audit to the SH&E Manager.

6.5 SH&E ENFORCEMENT

Parsons and its subcontractors enforce all applicable SH&E requirements of regional, federal, municipal, state, local and all other regulation; where applicable by OSHA 1910 and 1926 and Engineering Manual EM 381.1, where applicable. In addition, subcontractors must comply with and enforce Parsons' site requirements.

Parsons and its subcontractors have written progressive disciplinary systems available for review in their Human Resources departments.

6.6 NOTICE OF VIOLATION OF SAFETY AND HEALTH REGULATIONS

The project has a formal notice of Subcontractor Violation of SH&E Regulations Program (Exhibit 6-4) to ensure that violations are issued as the result of an immediately dangerous to life and health situation, respiratory airborne hazards), and/or when the subcontractor repeatedly fails to comply with SH&E requirements. The [Notice of Subcontractors Noncompliance to SH&E Regulations](#) (Exhibit 6-5) documents poor performance and requires a response from subcontractor senior management. The notice contains five distinct levels of discipline, from submission of a recovery plan to contract termination.

6.7 COMPETENT FIRST AID PERSON

At least one competent person must be available at the work site at all times to render first aid. This person must have a valid certificate in first aid training from the United States Bureau of Mines, the Red Cross/Crescent, or equivalent and verifiable regional, municipal, or local training programs. First aid supplies must be accessible for immediate use and in sufficient quantity to handle common first aid incidents.

The response time and distance to the nearest clinic, hospital, or physician identified in Section 4.11.3 has been determined to be 10 minutes. Based on the activities provided in the SOW (Section 2.1) and the list of AHA included in Section 6.3, the project has the potential to have an accident involving suffocation, severe bleeding, or other life threatening or permanently disabling injury or illness. Due to the aforementioned potential hazards and to meet this requirement, the project will require at least one individual on-site to be CPR/first aid trained. This person can be the SSO for the site provided that the field team informs the SSO where they will be working onsite and when they enter and leave the site. Copies of valid training certificates will be retained by the SSO prior to starting work. The employee(s) listed below are assigned to the project on a full-time basis and will have a valid certificate in first aid, CPR/AED, and blood-borne pathogens:

Name	Job Title	First Aid	CPR/AE D	Blood-borne Pathogens
Bill Moon	PrSM	1/16/21	1/16/21	-
TBD				
				-

6.8 COMMUNITY AIR MONITORING PLAN

A community air monitoring program is to be determined for this project.

TABLE 6.1

**SUGGESTED FREQUENCY OF PHYSIOLOGICAL MONITORING FOR FIT
AND ACCLIMATED WORKERS**

ADJUSTED TEMPERATURE^b	NORMAL WORK ENSEMBLE^c	IMPERMEABLE ENSEMBLE
90°F (32.2°C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5°-90°F (30.8°-32.2°C)	After each 60 minutes of work	After each 30 minutes of work
82.5°-87.5°F (28.1°-28.1°C)	After each 90 minutes of work	After each 60 minutes of work
77.5°-82.5°F (25.3°-28.1°C)	After each 120 minutes of work	After each 90 minutes of work
72.5°-77.5°F (22.5°-25.3°C)	After each 150 minutes of work	After each 120 minutes of work

^a For work levels of 250 kilocalories/hour.

^b Calculate the adjusted air temperature (T adj) by using this equation: $T \text{ adj } ^\circ\text{F} = T ^\circ\text{F} + (13 \times \% \text{ sunshine})$. Measure air temperature (T) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100% sunshine = no cloud cover and a sharp, distinct shadow; 0% sunshine = no shadows.), or use Figure A-9.1 Heat Index, or Figure A-9.2 Heat Stress Calculator.

^c A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

TABLE 6.2

HEAT INDEX

RELATIVE HUMIDITY	ENVIRONMENTAL TEMPERATURE (Fahrenheit)										
	70	75	80	85	90	95	100	105	110	115	120
0%	64	69	73	78	83	87	91	95	99	103	107
10%	65	70	75	80	85	90	95	100	105	111	116
20%	66	72	77	82	87	93	99	105	112	120	130
30%	67	73	78	84	90	96	104	113	123	135	148
40%	68	74	79	86	93	101	110	123	137	151	
50%	69	75	81	88	96	107	120	135	150		
60%	70	76	82	90	100	114	132	149			
70%	70	77	85	93	106	124	144				
80%	71	78	86	97	113	136					
90%	71	79	88	102	122						
100%	72	80	91	108							

*Combined Index of Heat and Humidity...what it "feels like" to the body

Source: National Oceanic and Atmospheric Administration

How to use Heat Index:

1. Across top locate Environmental Temperature
2. Down left side locate Relative Humidity
3. Follow across and down to find Apparent Temperature
4. Determine Heat Stress Risk on chart at right

Note: Exposure to full sunshine can increase Heat Index values by up to degrees

Apparent Temperature	Heat Stress Risk with Physical Activity and/or Prolonged Exposure
90-105	Heat Cramps or Heat Exhaustion Possible
105-130	Heat Cramps or Heat Exhaustion Likely, Heat Stroke Possible
>130	Heat Stroke Highly Likely

1

**EXHIBIT 6-1
SH&E Inspection Checklist (Sheet 1 of 2)**

Project Name:	Date/Time:		
Project Number:	Signature:		
Observation Details – Provide a description of the task observed including items such as: titles and company of observees, work activities, site/traffic conditions and weather as well as general positive comments observed during the observation.			
Check the appropriate box during your inspection or indicate N/A. Add observations in the comments section for Safe and At-Risk items. At-Risk items must have a comment to describe what was observed.			
1 - Observation - PPE	Safe	At Risk	Comments
1. Fall protection utilized per AHA requirements	<input type="checkbox"/>	<input type="checkbox"/>	
2. Hearing protection worn per AHA requirements	<input type="checkbox"/>	<input type="checkbox"/>	
3. Hand protection worn per AHA requirements	<input type="checkbox"/>	<input type="checkbox"/>	
4. Eye/Face protection worn per AHA requirements	<input type="checkbox"/>	<input type="checkbox"/>	
5. Foot protection worn per AHA requirements	<input type="checkbox"/>	<input type="checkbox"/>	
6. Respiratory protection worn per AHA requirements	<input type="checkbox"/>	<input type="checkbox"/>	
7. Head protection worn per AHA requirements	<input type="checkbox"/>	<input type="checkbox"/>	
8. Reflective vest, clothing etc. worn per AHA requirements	<input type="checkbox"/>	<input type="checkbox"/>	
9. PPE inspected and in good condition	<input type="checkbox"/>	<input type="checkbox"/>	
2 - Observation – Body Use and Positioning	Safe	At Risk	Comments
10. Uses proper Lifting/Carrying/Pushing Safety in Motion Techniques	<input type="checkbox"/>	<input type="checkbox"/>	
11. Faces machine or ladder and maintains 3 point contact when mounting and dismounting	<input type="checkbox"/>	<input type="checkbox"/>	
12. Keeping hand and body parts away from pinch points	<input type="checkbox"/>	<input type="checkbox"/>	
13. Body parts and body out of line of fire	<input type="checkbox"/>	<input type="checkbox"/>	
3 - Observation – Work Environment	Safe	At Risk	Comments
14. Work areas and pathways clear of slip and trip hazards; uneven surfaces addressed	<input type="checkbox"/>	<input type="checkbox"/>	
15. Site free from obstructions and housekeeping maintained	<input type="checkbox"/>	<input type="checkbox"/>	

**Exhibit 6-1
SH&E Inspection Checklist (Sheet 2 of 2)**

16. Work zone defined and/or secured					
17. Maintains adequate lighting and illumination					
18. Wastes properly stored, secured and disposed of					
19. Decontamination techniques performed per AHA and task requirements					
4 - Observation – Operating Procedures	Safe	At Risk	Comments		
20. Take 5/Job Plan/Pre Job Inspection Performed					
21. Held and documented toolbox safety meeting					
22. Reviewed, modified as needed and signed AHA					
23. Permits complete and present at job site					
24. Interfaces with other personnel effectively					
25. Identified and documented subsurface structures and utilities using Pre Drill/Subsurface Checklist					
Observation – Tools and Equipment	Safe	At Risk	Comments		
26. Inspects tools and equipment					
27. Chose the right tool for the job					
28. Uses tools only for their intended purpose					
29. Air monitoring equipment is in use and calibrated					
30. Vehicle and equipment parked to allow for first move forward/backed in when possible/chocks in use/GOAL performed/Parking Brake set					
Corrective Actions and Root Cause Analysis					
Root Cause	1.	Lack of skill or knowledge	5.	Lack of or inadequate procedures	
	2.	Done it that way before and no incident occurred	6.	Inadequate communication of expectations	
	3.	Supervisor allowed questionable behavior to occur	7.	Inadequate tools or equipment	
	4.	Following JSA takes more time or effort			
At Risk Items (IndSafe Problem Description)	Root Cause Number (IndSafe Comments)	Solution (IndSafe Recommendation)	Responsible Party	Target Completion Date	Actual Completion Date

**EXHIBIT 6-2
COMPLETED ACTIVITY HAZARDS ANALYSIS EXAMPLE
PAGE 1 OF 3**

Activity/Work Task: Entering Excavation	Overall Risk Assessment Code (RAC) (Use highest code)					M	
Project Location:	Risk Assessment Code (RAC) Matrix						
Contract Number:	Severity	Probability					
Date Prepared (MM/DD/YY):		Frequent	Likely	Occasional	Seldom	Unlikely	
Prepared by (Name/Title):	Catastrophic	E	E	H	H	M	
	Critical	E	H	H	M	L	
Reviewed by (Name/Title):	Marginal	M	M	M	L	L	
Employer / BU: Parsons	Negligible	M	L	L	L	L	
Notes: (Field Notes, Review Comments, etc.) References:	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above). The RAC is developed after correctly identifying all of the hazards and fully implementing all controls.						
	"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.				RAC Chart		
	"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				E = Extremely High Risk		
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				H = High Risk		
		M = Moderate Risk			L = Low Risk		
Job Steps	Hazards	Controls			P	S	RAC
1. Arrival, passing near, and/or around the excavation	1.1 Absence of edge protection and warning signs.	1.1.1 Maintain a safe distance away from the edge of the excavation. 1.1.2 Ensure that the edge protection and warning will be immediately provided. 1.1.3 Ensure gangways are provided across trenches to eliminate jumping over the trench.			S	Cr	M
	1.2 Presence of tension cracks near the edge of the excavation and evidence of soil collapse.	1.2.1 Maintain a safe distance away from the edge on the excavation. 1.2.2 Ensure that no materials are placed on the excavation edge. 1.2.3 Follow warning signs onsite.			S	Cr	M

**EXHIBIT 6-2
COMPLETED ACTIVITY HAZARDS ANALYSIS EXAMPLE
PAGE 2 OF 3**

Activity/Work Task: Entering Excavation		Overall Risk Assessment Code (RAC) (Use highest code)			M
Project Location:		Risk Assessment Code (RAC) Matrix			
Job Steps (Cont'd)	Hazards	Controls	P	S	RAC
2. Entering the excavation	2.1 Access and Egress – Unsafe Ramp.	2.1.1 Look ahead and be aware of moving plant and vehicles. 2.1.2 Keep the hands free (not in the pocket) while walking 2.1.3 Avoid slippery surfaces (oil, water mud, stones, etc.) 2.1.4 Ensure that ramp/walkway is adequately illuminated. 2.1.5 Keep scanning the floor; avoid obstacles, such as building material, cables, and tools.	S	M	L
	2.2 Access and egress – Unsafe Ladder.	2.2.1 Ensure that the top and bottom ends of the ladder are secure. 2.2.2 Make a visual inspection to ensure that the ladder is safe and sound. 2.2.3 Ensure that the ladder will extend one meter clearance on top. 2.2.4 Ensure that ladder is free from oil, grease, or mud. 2.2.5 Maintain three-point contact. 2.2.6 Check for proper angle of the ladder (4:1). 2.2.7 Do not use job made ladder unless certified. 2.2.8 Do not carry a load on a ladder. 2.2.9 Only one person at a time will use a ladder. 2.2.10 Ensure that adequately illumination is provided onsite.	S	Cr	M
	2.3 Access and egress – Unsafe Stairs.	2.3.1 Check for the proper angle of the stairs. 2.3.2 Check if the tread is anti slip. 2.3.3 Ensure that railing is in good condition. 2.3.4 Maintain 3-point contact. 2.3.5 Ensure that stairs treads is free from oil, grease or mud. 2.3.6 Ensure that adequately illumination is provided on site. 2.3.7 Ensure all stairs of 4 or more risers have a hand rail.	S	Cr	M
	2.4 Access and egress - Unsafe man basket.	2.4.1 Ensure third party certification of the man basket and crane. 2.4.2 Perform a pre-use inspection on the man basket to ensure that it is in good condition 2.4.3 Check for the safe working load (SWL) of the man basket. 2.4.4 Check for the full body harness and adequate anchor point 2.4.5 Ensure that the crane operator and rigger are all certified.	S	Cr	M

**EXHIBIT 6-2
COMPLETED ACTIVITY HAZARDS ANALYSIS EXAMPLE
PAGE 3 OF 3**

Activity/Work Task: Entering Excavation		Overall Risk Assessment Code (RAC) (Use highest code)			M
Project Location:		Risk Assessment Code (RAC) Matrix			
Job Steps (Cont'd)	Hazards	Controls	P	S	RAC
3. Walking inside the excavation	3.1 Falling Materials	3.1.1 Ensure that materials are not placed on the edge. 3.1.2 Follow all mandatory signs and out of bound areas 3.1.3 Ensure that basic PPE is worn (hard hat, safety glass, safety shoes). 3.1.4 Ensure no overhanging or undermined sides.	S	M	L
	3.2 Falls on same level	3.2.1 Use designated route and walkway. 3.2.2 Look ahead and be aware. 3.2.3 Keep hands free (not in pocket) while walking onsite. 3.2.4 Follow mandatory signs onsite.	S	M	L
	3.3 Signs of cracks or collapse on the sides of the excavation	3.3.1 Work should be stopped and adequate support system shall be installed to prevent cave-ins.	S	Cr	M
4. Walking on elevated areas of the excavation	4.1 Falls from Height	4.1.1 Ensure that edge protection is in place. 4.1.2 Follow mandatory warning signs onsite. 4.1.3 Do not approach near unprotected edges. 4.1.4 Use designated routes and walkways. 4.1.5 Do not stop on and/or over covered voids, where possible.	S	Cr	M
5. Passing a noisy area in the excavation	5.1 Noise	5.1.1 Check if the contractor has conducted noise survey. 5.1.2 Follow mandatory use of PPE.	S	M	L
6. Passing near Moving Equipment and Vehicles on or near the excavation	6.1 Moving Equipment and Vehicles	6.1.1 Wear high-visibility vest. 6.1.2 Use designated walkways. 6.1.3 Do not pass behind moving equipment and vehicles.	S	Cr	M
7. Passing live utilities	7.1 Live Utilities	7.1.1 Coordinate with the contractor regarding presence of any live utilities. If so, ensure that control measures are provided. 7.1.2 Follow mandatory signs and out of bound areas.	S	Cr	M
8. Passing flooded areas	8.1 Flooding and presence of water in the excavation/trench	8.1.1 Check for the weather condition before entering the excavation. Exit if heavy rain starts. 8.1.2 Ensure water intrusion is controlled by dewatering	S	M	L

**EXHIBIT 6-3 ACTIVITY HAZARDS ANALYSIS TEMPLATE
PAGE 1 OF 2**

Activity/Work Task:		Overall Risk Assessment Code (RAC) (Use highest code)						
Project Location:		Risk Assessment Code (RAC) Matrix						
Contract Number:		Severity	Probability					
Date Prepared (MM/DD/YY):			Frequent	Likely	Occasional	Seldom	Unlikely	
Prepared by (Name/Title):		Catastrophic	E	E	H	H	M	
		Critical	E	H	H	M	L	
Reviewed by (Name/Title):		Marginal	M	M	L	L		
Employer / BU: Parsons		Negligible	M	L	L	L		
Notes: (Field Notes, Review Comments, etc.) References:		Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above). The RAC is developed after correctly identifying all of the hazards and fully implementing all controls.						
		"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.					RAC Chart	
		"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible					E = Extremely High Risk	
		Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.					H = High Risk	
			M = Moderate Risk					
			L = Low Risk					
Job Steps	Hazards	Controls				P	S	R A C

**EXHIBIT 6-3 ACTIVITY HAZARDS ANALYSIS TEMPLATE
PAGE 2 OF 2**

Activity/Work Task: Entering Excavation		Overall Risk Assessment Code (RAC) (Use highest code)			
Project Location:		Risk Assessment Code (RAC) Matrix			
Job Steps (Cont'd)	Hazards	Controls	P	S	R A C
Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements			

**EXHIBIT 6-4
NOTICE OF SUBCONTRACTOR VIOLATION OF SH&E REGULATIONS**

Date:						
Contractor Name:						
Address:						
Attention:						
This letter officially notifies you that you have been found to be in violation of the following Safety, Health, and Environmental Regulations: _____						
on (date) _____, by _____						
Confined Space Entry	<input type="checkbox"/>	Lockout/Tagout	<input type="checkbox"/>	Hot Work	<input type="checkbox"/>	Personal protective equipment
Knowledge of environmental requirements	<input type="checkbox"/>	Awareness of warning alarms	<input type="checkbox"/>	Evacuation routes	<input type="checkbox"/>	Backup alarms
Assembly locations	<input type="checkbox"/>	Fall Protection	<input type="checkbox"/>	Scaffolding	<input type="checkbox"/>	Environmental/hazardous material storage
Trenching	<input type="checkbox"/>	Safe Work Practices	<input type="checkbox"/>	Security Practices	<input type="checkbox"/>	Spill to the environment
Waste storage or disposal	<input type="checkbox"/>	Wastewater discharge	<input type="checkbox"/>	Buried items	<input type="checkbox"/>	Violation of environmental regulation
Other: _____						
Environmental: _____						
This/These violations occurred at the following locations: _____						
At the following times _____ and dates: _____						
The name of the employee(s) was (were): _____						

Pweb link: [Notice of Subcontractor Violation](#)

**EXHIBIT 6-5
NOTICE OF NONCOMPLIANCE WITH SH&E REGULATIONS**

Under conditions of this enforcement procedure check all items that apply:

<input type="checkbox"/>	1.	You are being notified of this violation and should take corrective action to prevent a reoccurrence. The corrective action shall be documented to the Parsons Construction Management representative immediately.
<input type="checkbox"/>	2.	You must submit a plan for compliance to your Parsons Construction Management representative and the Construction Safety Manager within two days of receipt of this letter. The compliance plan must include the means or methods of compliance and the date that the requirements for compliance will be completed. Once compliance has been achieved, a follow up letter must be sent to the Parsons Construction Management representative and Construction Safety Manager. Failure to comply will result in disciplinary action against your Company.
<input type="checkbox"/>	3.	You are required to review the stated procedures with your Parsons Construction Management representative. Work may not commence on the site until the review is complete and the Subcontractor responds formally that the procedure is understood and will comply.
<input type="checkbox"/>	4.	You are required to review the stated procedures with your Parsons Construction Management representative. Work may not commence on the site until the review is complete and you must confirm formally the disciplinary action to be taken against the supervisor and employees.
<input type="checkbox"/>	5.	All work on the site will stop until the Parsons Construction Management representative reviews all the facts with the Subcontractor and determines if the contract between the parties will be terminated.

Sincerely,

Parsons Representative

cc:
Issuing Construction Manager Representative
Job File
BU Safety Director
PM

Pweb link: [Notice of Subcontractor Noncompliance](#)

SECTION 7

SAFETY TRAINING

7.1 PROJECT SAFETY ORIENTATION

The Parsons PM, Project Engineer, or SSO conducts the site-specific orientation for all new Parsons' staff and subcontractor management personnel.

The Orientation takes approximately two hours to complete and includes applicable owner, Parsons, and regulatory reference material, including:

- Owner – SH&E requirements
 - Applicable regional, municipal, and local regulations and if applicable and in the United States or its territories OSHA 1910 General Industry and 1926 Construction Regulations and
- Parsons applicable requirements, including items covered in Section 4.2
- Subcontractor requirements

All visitors must receive a brief orientation as described in Section 4.2, and be escorted by the PM, Project Engineer, SSO, or a designee familiar with the potential hazards on the project.

Subcontractors must conduct similar orientations for their staff and craft employees and must document all orientations using the [Subcontractor Employee Training Acknowledgement Form](#) (Exhibit 7-1) and Subcontractor Competent Persons Form (Exhibit 7-2). The project Talent Manager maintains orientation documents and acknowledgement forms.

7.2 ZERO INCIDENT TECHNIQUES / START TRAINING

Consistent with Parsons corporate initiatives in safety, all managers and supervisors, including subcontractor personnel, must complete START training. Records of training completion are maintained by the SSO and forwarded to the Market SH&E Director.

7.3 DAILY TOOLBOX SH&E MEETINGS

Parsons and its subcontractors conduct toolbox safety meetings at the beginning of day when field work is occurring. These meetings include topics relevant to upcoming work, review of applicable AHAs, remind employees of SH&E work procedures established for the tasks, and may include reviews of recent incidents. The toolbox training content and attendance is documented and retained (Exhibit 7.3). Supervisors should always ask whether any workers have questions before they are released for work

7.4 ACTIVITY HAZARD ANALYSIS TRAINING

When the activity hazards analysis is complete, the Parsons supervisor or subcontractor conducts a training session with all employees involved with the analyzed task. The training may be informal and at the site where the task is performed. Employees should be given an opportunity to provide input regarding task steps, hazards identified, and appropriate control measures.

7.5 REGULATORY TRAINING PROGRAMS

Regional, municipal, local, and OSHA regulations require specific training in certain circumstances. Based on the SOW and meetings with regulatory officials, the following training topics are provided on the project:

- Hazard Communication – as per 29 CFR 1910.1200
- CPR/AED/First aid – provided to personnel based on project activities identified in the Scope of Work (i.e., life threatening) and EMS response time (i.e., less than 15 minutes). See Section 6.9.
- Emergency response – only applicable to workers engaged in emergency response as per 29 CFR 1910.120(q).
- Fire Protection

If needed, the following training topics may be provided on the project as applicable:

- General – all workers engaged in activities which are potentially exposed to hazardous substances and health hazards must be trained to meet 1910.120(e)(1). Annual 8-hour refresher training as per 29 CFR 1910.120(e)(3) is required for workers and supervisors must be trained to meet 29 CFR 1910.120(e)(4).
- Respiratory protection – as per 29 CFR 1910.134. Medical qualification by a physician is required to wear a respirator. Annual fit testing and training is also required.
- Excavation/trenching – as per 29 CFR 1926.651.
- Respiratory protection
- Lockout/Tagout (LOTO)
- Power operated hand tools

The PM determines the necessary training and coordinates the training with the Parsons' SH&E experts certified in the topics they instruct.

7.6 SPECIALIZED TRAINING AND ORIENTATIONS.

Project personnel receive specialized training on client rules and requirements as well as the unique tools, equipment, and procedures used to perform the work. The project budget includes funding for the following training:

Description	Attendees	Schedule
General rules and safety requirements	All workers assigned to the site	Half-hour training session, provided to new employee on the first day of work at the site.
Honeywell Contractor Safety Handbook (Attachment E)	All workers assigned to the site	Handbook should be provided for review during site orientation training.
Additional To Be Determined		

EXHIBIT 7-1 INITIAL SUBCONTRACTOR EMPLOYEE TRAINING ACKNOWLEDGEMENT

Name of Trainer: _____

Training Subject: _____

Training materials used: _____

Name of employee: _____

Date of hire/assignment: _____

I, _____, hereby certify that I have received training as described above in the following areas:

- Names of personnel responsible for site safety and health.
- Safety, health or other hazards at the site.
- The proper use of personal protective equipment.
- The potential occupational hazards in general in the work area and associated with my job assignment.
- Work practices by which a worker can minimize risks from hazards.
- Safe use of engineering controls and equipment on the site.
- Acute effects of compounds on the site.
- Decontamination procedures.
- General safety requirements indicate the safe work conditions, safe work practices and personal protective equipment required for my work.
- The hazards of any chemicals to which I may be exposed and my right to information contained on material safety data sheets for those chemicals, and how to understand this information.
- My right to ask questions, or provide any information to the employer on safety either directly or anonymously without any fear of reprisal.
- Disciplinary procedures the employer will use to enforce compliance with general safety requirements.

I understand this training and agree to comply with general safety requirements for my work area.

Employee Signature

Date

**EXHIBIT 7-2
SUBCONTRACTOR COMPETENT PERSON FORM**

Definition

A competent person is a person having the ability to recognize existing and predictable hazards and having the authority to correct them.

Responsibility

The designated subcontractor competent person is responsible for recognizing and correcting safety risks/hazards. This person has the authority to stop work in a potential safety concern on the jobsite. This Subcontractor Manager and competent person are considered the contacts for Parsons projects.

This form must be completed by each subcontractor’s manager and the subcontractor’s designated competent persons. *Where a subcontractor is responsible for multiple crafts, it will be necessary to maintain additional designated competent persons and forms.* Each subcontractor on a Parsons project must submit this completed form to the Parsons Project Manager before beginning work on the project and must update it any time the designated representative(s) changes.

Acknowledgment

I, _____ representing, _____
Subcontractor Manager **Subcontractor Company Name**
have assigned _____ to be the competent person in the areas indicated and I
_____ acknowledge that this individual has been thoroughly trained and is
experienced in hazard recognition and has the authority to stop work and correct hazards in the event of a potential hazardous or
imminent danger situation.

Subcontractor Manager (Signature) **Date** _____

I, _____ acknowledge that I have been thoroughly trained and have the
experience

Competent Person (Signature)

to perform the duties as the _____ competent person in the areas marked below and
Subcontractor Company Name

I understand that I have the responsibility and authority to correct hazards and to stop work in the event of a potential
hazardous or imminent danger situation.

- | | | |
|------------------------------|---------------------------------|------------------------------|
| _____ Asbestos | _____ Hearing Protection | _____ Welding/Cutting |
| _____ Respiratory Protection | _____ Scaffolding | _____ Rigging |
| _____ Cranes/Derricks | _____ Electrical | _____ Lead |
| _____ Fall Protection | _____ Ladders | _____ Excavations/Trenches |
| _____ Demolition | _____ Tunnels/Shafts | _____ First Aid/CPR |
| _____ Underground Const. | _____ Material/Personnel Hoists | _____ Concrete/Forms/Shoring |
| _____ Marine Work/Diving | _____ Bolting/Riveting/Fitting | _____ Mechanical Demolition |

**Exhibit 7-3
Safety Meeting Sign-In Sheet**

Safety Meeting Presenter: _____ Date: _____

Current Weather Conditions:

Temperature (°F) = _____ Wind Direction = _____ Wind Speed = _____

Clear – Sunny – Cloudy – Rain – Snow Forecast = _____

Current Site Conditions (circle as appropriate):

Dry – Wet – Muddy – Frozen – Snow Covered – Other (describe) _____

1. Incidents or Injuries to report from Previous Day Activities: No Yes - explain below:

2. Safe and/or At-Risk Observations from Previous Day Activities: _____

3. Activities Taking Place Today: _____

3. Anticipated Hazards: _____

4. Engineering Controls-Work Practices-PPE to Protect Against Hazards: _____

5. Additional Safety Topic or Comments: _____

SECTION 8**RECORD KEEPING AND POSTING**

Parsons and its subcontractors must comply with the recordkeeping requirements of the regional, municipal, local, and/or OSHA regulations, Owner, Parsons Corporation, and this PSHEP, including:

- OSHA 300A logs
- Medical treatment and follow-up
- Cranes
- Heavy equipment inspection logs
- Fall protection
- Training
- Inspections
- Audits
- Others as required

Parsons Talent Management and the SH&E Manager are the official recordkeepers for files relating to Parsons' employees. Each subcontractor maintains its own files.

The project displays regional, municipal, local, and/or OSHA regulations posters in conspicuous places, as required by regional, municipal and local regulations, including one poster on the main bulletin board located outside in the H&S/State bulletin board outside of the craft labor trailer.

The OSHA 300 log for the project or the Market shall be posted from February 1 – April 30 of each calendar year.

SECTION 9

SAFETY AND HEALTH REQUIREMENTS

Exhibit 9-1 represents regional, municipal, local, and/or OSHA regulations, owner, and Parsons corporate regulations and requirements applicable to the project. Based on the most recent risk assessments, the Parsons PM and SSO update the listed topics periodically. Training and other requirements are updated in this PSHEP as required by changes to Exhibit 9-1, [Competent Person and Activity Hazards Analysis Requirements](#).

The SH&E Legal Compliance Register is included as Attachment H. This document identifies the SH&E legislation, standards, codes, and regulations relevant to Parson's activities during this project.

Parsons and its subcontractors are individually responsible for training their respective employees and for complying with all project requirements. Failure to comply could lead to disciplinary actions against Parsons' employees and subcontractors or their employees. Further guidance is available in the Parsons Corporate Safety and Health Manual; Pweb link is as follows: [Corporate Safety and Health Manual](#).

**EXHIBIT 9-1
COMPETENT PERSON AND ACTIVITY HAZARDS ANALYSIS REQUIREMENTS**

Safety and Health Requirement	OSHA Regulation	EM 385-1-1 Regulation	Competent Qualified Person-Supv	Training Required	AHA Required
1. General Safety & Health	1926.20	01.A	Yes	Yes	Yes
2. Safety Training	1926.21	01.B.01	Yes	Yes	Yes
3. First Aid and Medical	1926.23, 50	03.A	Yes	Yes	Yes
4. Fire Protection and Prevention	1926.24, 150-155, 352	09.A	Yes	Yes	Yes
5. Housekeeping	1926.25	14.C	N/A	N/A	N/A
6. Sanitation	1926.27, 51	02.A	N/A	N/A	N/A
7. Personal Protective Equipment	1926.28, 95-98, 100-107	05.A	Yes	Yes	Yes
8. Emergency Employee Action Plans	1926.35	01.E	<i>Recommended</i>	Yes	Yes
9. Noise Exposure	1910.95; 1926.52	05.C	Yes	Yes	Yes
10. Gases, Vapors, Dusts and Mists	1926.1926.55		Yes	Yes	Yes
11. Hazard Communication	1926.59	1.B.06	Yes	Yes	Yes
12. Hazardous Waste Operations and Emergency Response	1910.120; 1926.65	28.A	Yes <i>Supv – 8 hr</i>	Yes	Yes
13. Accident prevention signs and tags	1926.200	08.A	N/A	N/A	N/A
14. Signaling	1926.201	08.B	<i>Recommended</i>	N/A	Yes
15. Barricades	1926.202		N/A	N/A	N/A
16. Material Storage	1926.250	14.B	N/A	Yes	Yes
17. Waste Disposal	1926.252	14.D	Yes	Yes	Yes
18. Tools	1926.300-307	13.A	N/A	N/A	Yes
19. Motor Vehicles, Mechanized Equipment	1926.600-603	18.A	Yes	Yes	Yes
20. Site Clearing	1926.604	31.A	N/A	Yes	Yes
21. Excavations	1926.650-652	25.A	Yes	Yes	Yes
22. Excavation Permit	N/A	N/A	Yes	Yes	Yes
23. Internal Traffic Control	N/A	8.D	N/A	Yes	Yes
24. Traffic Movement Restriction Times	N/A	8.C	N/A	Yes	Yes
25. Boating	General Duty	-	Yes	Yes	Yes

ATTACHMENT A

PARSONS REQUIREMENTS

On-Line Safety Reporting System

Policy Requirements

- Initial incident reports for all incidents, including near misses, shall be reported within 2 hours.
- Detail incident reports are required within 24 hours.
- Reporting is done via on-line (PWeb) incident report form.
- Injuries with Days Away from Work - immediate supervisor and PM must teleconference with GBU President within 4 hours.
- Projects enter hours via on-line form by FIRST Friday of new period.

Reporting Incidents

Corporate policy requires that all employees report safety incidents to their supervisor immediately. Supervisors must report all incidents to the appropriate Project Manager (Department Manager if the incident is not related to a project), who must officially report the incident to the GBU within four hours. This official reporting is done via the PWeb, unless PWeb is unavailable, in which case the incident can be reported by email, fax or telephone.

“Incidents” include work related injuries, work related illness, accidents with property damage only and near misses. “Near misses” are any unplanned event that had the potential to (but did not) result in injury or property damage.

Incident reports should reflect the best available information at the time. Where exact information is not known (recordability, days away from work, etc.) the PM’s best judgment should be used when completing the initial incident report. This information can be subsequently revised when the detail incident report is submitted.

When in doubt, submit an initial report or contact the GBU Safety Manager.

On-line Reporting System

The on-line reporting system can be found on the PARCOMM Safety Page on PWeb. To locate the system, follow these steps:

1. From the Corporate PWeb Homepage, select PARCOMM from the Org Units menu
2. Locate and select “Safety” from the header
3. Select the “Online Safety Reporting” link

To create and submit a new incident report, select the orange “Add” button from the main page of the reporting system. To update an existing incident report or complete the Detail Incident page, locate and select the appropriate incident from the list.

Creating or Updating Incidents

The Initial Incident page of the report must be completed within four hours of the incident occurring. This page includes basic information needed for the first notification to our insurance carriers. If possible, all of the fields should be completed in the initial report. A list is provided at the end of this document describing all fields contained on the initial incident page.

Incident Detail Reports

Within 24 hours of the incident occurring, the Incident Detail page of the on-line report must be completed. This page includes detailed information about the injured party, the nature and extent of injuries, medical treatment provided, corrective actions taken, and witness statements. In the event of property damage, this page also includes descriptive information on the property owner. Finally, the page includes a section to include electronic attachments. These might include photographs, signed witness statements, etc.

Monthly Reporting of Hours

Hours must be entered into the on-line reporting system no later than the first Friday of the new period. If an accurate accounting of hours is not available, estimated hours are submitted into the system. The estimated hours can be revised later in the month, or the following month, when accurate data is available.

From the “Hours” page, select “PAR” from the GBU drop down menu and the period (month and year) that is being reported. The system only allows hours to be entered for the period selected. MTD and PTD figures are calculated totals based on the sum of all monthly entries. To enter or correct a prior period entry, simply select that month from the drop-down box and correct the figures for that month. If the name of your “Project” is not alphabetically listed on any of the multiple pages, then select “Field Administration/Other – Industrial”.

Be sure to select the correct month and year when entering hours.

Hours must be entered for each (as applicable) of six different labor categories. The categories are as follows:

- Contractor (Field/Craft)
- Contractor (Office/Admin)
- JV Partner (Field/Craft)
- JV Partner (Office/Admin)
- Parsons Employee (Field/Craft)
- Parsons Employee (Office/Admin)

Monthly Statistics Summary Reports

The on-line reporting system automatically calculates incident rates based on incidents and hours entered into the system. To view the statistics, select the “Reports” page from the on-line system. Select “Parsons Safety Statistics Summary”, the appropriate GBU, and the appropriate period. (NOTE: The system does not yet provide reports at the Division and Sector level. That enhancement is pending.) Use the checkboxes to select the labor categories desired.

Contact Brad Barber or Greg Beck for Assistance

Initial Incident Report Fields

1. GBU – Select the GBU from the drop down box. Incidents are reported primarily by project, and the GBU should reflect the unit responsible for the project. This may be different from the GBU that employees the person injured.
2. Field Project Name, Office Location or Other – if the injury occurred in the field, then select the appropriate name from the alphabetical listing in the “Field Project” drop down box. If an appropriate name does not exist, select “Field Administration/Other-Industrial”. If the incident occurred in a Parsons office, select the office name from the “Office Location” drop down box. ONLY select Field Project or Office Location, not both (or Other). If the appropriate Office Location is not provided, manually enter it into the “Other” box.
3. Job and WBS Numbers – These fields should reflect the charge number responsible for the incident. In general, that will be the number that the employee was charging at the time of the incident. Projects are responsible for visitors, regardless of what charge number they use while visiting the job. For example, if the Division Manager is injured while visiting Project X, the project number is entered, not the division overhead account.
4. Near Miss – Check this box if the report is for a near miss only (no injury or property damage occurred).
5. Emergency Response Notified – Check this box if fire, police or ambulance was called as a result of the incident.
6. Three or More Employees Hospitalized – Check this box if three or more employees were injured as the result of a single incident. In this case, the GBU or Corporate Safety Manager must also be immediately notified by telephone.
7. Extent of Injury – Select the appropriate radio button. First aid cases are as defined by OSHA 1904 criteria. All other injuries are considered recordable.
8. Restricted Duty (# of days) – If the injured person was limited (by a physician) to less than normal work duration or duties, enter the number of days. Estimate the days if unknown, and correct the number later. NOTE: this is the number of CALENDAR days (not scheduled work days), and it does NOT include the day of the injury.
9. Days Away From Work (# of days) – If the injured person was ordered by a physician not to return to work, enter the number of days missed. Estimate the days if unknown, and correct the number later. NOTE: this is the number of CALENDAR days (not scheduled work days), and it does NOT include the day of the injury. Injuries with Days Away From Work require a phone call to the GBU President within 4 hours.
10. Fatality (Date of Death) – In the event of a work related fatality, enter the date of death here. NOTE: Fatalities require immediate phone notification of the Division Manager, GBU President, GBU Safety Manager, and Corporate Safety Manager.
11. Property Damage – Check the appropriate boxes if applicable.
12. Place – Describe the exact location that incident occurred. For example, “in the north stairwell of building 21, between the second and third floor.”
13. Date – This field reflects the date the incident occurred, not necessarily the date it was reported. If the exact date is not known, an estimate should be used.
14. Time – This field reflects the time of day that the incident occurred. If the exact time is not known, an estimate should be used.
15. Incident Description – Provide a detailed description of the incident. This is a memo field and text will scroll down the window as it is entered. Use as much space as needed to accurately describe the incident and the resulting injuries.
16. Reported by – This field defaults to the employee login ID that was used to access PWeb. However, the field can be over-written if needed.

17. Name – First and last name of the injured party.
18. Status – Select the most appropriate category from the drop box (Employee - Field, Subcontractor - Field, Partner - Field, Employee - Office, Subcontractor - Office, Partner - Office or 3rd Party).
19. Trade/Function – Select the most appropriate category from the drop box.

Parsons Project Incident/Accident Report Form

PLEASE PRINT

Attach all supplemental documentation, including photos, diagrams, witness statements and field reports

Project Information	Project Title	Location
	Subcontractor	
	Address	
	City, State, Zip	
	Contact Name	Phone Number

Incident Type	<input type="checkbox"/> Worker's Compensation	<input type="checkbox"/> General Liability	<input type="checkbox"/> Builder's Risk
	<input type="checkbox"/> Emergency Response Notified (Police, Fire, Medic, etc.)	<input type="checkbox"/> Bodily Injury/Illness	<input type="checkbox"/> Equipment
	<input type="checkbox"/> First-Aid Only	<input type="checkbox"/> Real Property Damage	<input type="checkbox"/> Supplies
	<input type="checkbox"/> Recordable Injury	<input type="checkbox"/> Personal Property Damage	<input type="checkbox"/> Machinery
		<input type="checkbox"/> Utility Property Damage	<input type="checkbox"/> Work

Incident Location	Date of Loss	Time of Loss
	Place (exact location)	

Incident Description	Detailed Description of Accident
-----------------------------	----------------------------------

Worker's Comp Or Personal Injury (circle one)	Injured Name			
	Address			
	City, State, Zip			
	Home Phone		Date of Birth	
	Nature of Injury			
	Medical Facility		Work Status	
	Treatment Received			

Property Damage Or Builder's Risk (circle one)	Owner's Name			
	Address			
	City, State, Zip			
	Home Phone		Work Phone	
	Damage Type		Estimated Cost	
	Utility Type		Marked or Unmarked	
	Description of Damage			

Witness Information	Name			
	Address			
	City, State, Zip			
	Home Phone		Work Phone	
	Where to contact		Time to contact	

Contractor Subcontractor Action	Describe actions taken	

Signature _____
 Print Name _____
 Phone No. _____

Employer _____
 Date _____
 Fax Number _____

Field/Project Monthly Report Form

Instructions: Enter the total number of labor hours spent in the field by all Parsons employees and subcontractors during the reporting period. Cost Type (CT) "04" used for WebTime labor entries should represent these hours for Parsons employees. Labor hours spent in the office are classified as CT "01" in WebTime. Incidents/near-miss incidents, air monitoring completed and the type of PPE worn by personnel (i.e. Parsons employees and contractors) must also be reported. Submit by the 3rd working day of the following month (an estimation of the monthly field hours based on number of people working on the project each day is acceptable).

Definitions and Reporting Criteria

Field Hours - time spent by the employee working at a job site or field project, even if performing office/administrative work (i.e. in a modular trailer). Working in another Parsons office or at a client's corporate/main office is not considered field hours for the purposes of this reporting.

Incident - any unplanned or unexpected event, including near-misses, first aid cases, personal injuries requiring medical treatment, vehicle or equipment damage or an environmental release.

Near-miss Incident (NI) - an unplanned or unexpected event that has the potential to result in a personal injury, vehicle or equipment damage, or environmental release, but does not occur (i.e. almost happened).

PPE - Personal Protective Equipment above Level D (work clothes) or Modified Level D (Tyvek or fire retardant coveralls). This includes Level C (chemical resistant suit and/or air-purifying respirator), Level B (chemical resistant suit and/or supplied air) or Level A (full encapsulation suit with SCBA).

Subcontractor - contractors hired by Parsons or a Parsons contractor, to perform activities in the field. Contractor company names should be listed and tracked separately in the Table below, followed by the hiring company in parentheses (i.e. Parsons or subcontractor).

Project Name:		Client:			
Project Location:		Client Contact:			
Parsons Contact:		Project #:		Month:	

Parsons and/or Contractor	Hours	Type of Activities	Incident or NI	
Parsons			Yes	No
			Yes	No
			Yes	No
			Yes	No

Air Monitoring

Was there any air monitoring that took place during the month? No Yes - If "Yes", indicate below the potential hazards/chemicals monitored (i.e. O2, LEL, dust, VOCs), the monitoring equipment used (i.e. PID, FID, Draeger tubes, 4-gas, DataRAM, cassettes), whether the air monitoring results exceeded an Action Level (AL) or Permissible Exposure Limit (PEL), the level of PPE worn above Level D (C, B or A) and the number of days working in the specific PPE.

Chemical Monitored	Equipment Used	Exceed AL-	Exceed PEL	PPE	Days in PPE
		Yes	No	- Yes	
		Yes	No	- Yes	
		Yes	No	- Yes	
		Yes	No	- Yes	

NOTE: If an AL/PEL is exceeded or PPE above Level D is worn, a Supplemental Information Form (available in the Industrial Division Safety Folder on ParShare) must be completed. All incidents must be reported on the PWeb (PARCOMM Online Safety Reporting System).

ATTACHMENT B

HONEYWELL REQUIREMENTS

HONEYWELL, SYRACUSE, NEW YORK EVENT REPORTING REQUIREMENTS REVISION 3 – 5/20/16

1. INTRODUCTION

To assure Honeywell Health, Safety and Environmental Remediation (HSER) leadership has sufficient knowledge of significant adverse events to enhance decision-making and drive improved performance, the following event reporting procedure will be followed to report Safety & Environmental Incidents and Near Misses (referred to as events in this procedure) for all Honeywell Syracuse Portfolio projects.

These requirements will be reviewed with project staff when they start working on the projects and on a regular basis thereafter.

2. CONTRACTOR REPORTING TO HONEYWELL SYRACUSE PERSONNEL

Event reporting to Honeywell management is the responsibility of Syracuse Honeywell personnel. Contractor personnel should report the incident to the Syracuse Honeywell personnel per Section 2.2 as soon as it is safe to do so. When that call is made, provide the information listed below to assist in classifying the event. *If the event involves any of the items listed under Tier 1 Events and none of the Honeywell Syracuse personnel can be reached within two hours of the event, contractor personnel should make the Honeywell contacts required in Section 3.*

2.1 INCIDENT REPORTING (Copied from the HSP2 dated May 2016)

The Alliance Partner PM and HSP² Safety Director or Safety Manager must be **notified** by the SHSO of any incident immediately.

After notification, **written incident reports** must be submitted by the SHSO to the HSP² Safety Director in accordance with time frames shown the following table. Honeywell representatives will be notified within prescribed time frames. Specific contact names and numbers will be outlined in safety plans and JSA forms.

	Tier 1 Incident	Tier 2 Incident	Tier 3 Incident
Notification to the Alliance Partner PM and HSP ² Safety Director or the HSP ² Safety Manager	Immediate Notification		
Notify Honeywell RES Management or Operations Manager by the O'Brien & Gere or Parsons PM	1 hr	4 Hours	12 Hours
Incident Report (written)	Written report within 24 hrs – (All known facts and updated as necessary)		
Entry into Honeywell Event Tracking System	1 Day	1 Day	1 Week

Tier 1 Examples

- One or more on-site or off-site fatalities involving an employee, contractor employee or visitor that are or may be work-related.
- A single work-related on-site or off-site incident resulting in three or more employees, contractors or visitors being admitted to a hospital.
- Any off-site fatalities to the general public that allegedly are or may be related to Honeywell.
- Any security incident that may be immediately dangerous to life or property, including, bomb threats, intentional explosions, chemical releases, radiation releases, or releases of biological/chemical agents.
- Fires that: (a) resulted in significant property damage, or, regardless of the level of damage, (b) were extinguished by a fire department using other than handheld fire extinguishers, or (c) were extinguished by a fire suppression system (other than an integrated fire suppression system within a piece of equipment) or (d) significantly halted operations.
- Suspicious materials, package or letter for which outside authorities were called in to investigate.
- Serious injuries or illnesses in the general public allegedly associated with a company-related incident, event or release to air, water or soil.
- A release to air, water or soil that has an Adverse Environmental Impact which includes a release that triggers a regulatory inquiry.
- Events generating community activism or adverse media coverage not associated with an episodic event at the national/international level.
- Government representatives alleging or suggesting criminal non-compliance of any kind.
- A regulatory agency inspection with notice of fine, penalty or corrective action that has a directive or other type of injunctive device designed or likely to halt, curtail, or restrict operations.

Tier 2 Examples

- Employee or contract employee lost workday injuries/illnesses.
- Any on-site or off-site injuries/illnesses involving an employee, contractor employee or visitor that are or may be work-related and are significant enough to be recordable (e.g., vaccination or doctor prescription).
- Minor injuries or illnesses in the general public that allegedly are associated with a company-related incident, event or release to air, water or soil.
- Suspicious activities in or around Honeywell facilities or processes that may present a potential security risk.
- Fires extinguished using handheld fire extinguisher(s) or an integrated fire suppression system internal to a piece of equipment that did minimal property damage, and did not halt operations.

- Allegations of previously unknown health or environmental effects caused by products, processes, emissions or discharges [Allegations of Adverse Health Effects](#), Hlth-19.
- An environmental excursion that does not also trigger Tier 1 reporting.
- Discovery of potential or actual evidence of contaminated soil or groundwater from current or former operations that does not otherwise meet the definition of an adverse environmental impact.
- Written notification from a governmental agency alleging non-compliance of any kind.
- Proposal or imposition of an HSER fine, penalty or corrective action.
- Receipt of a non-routine request for information from a governmental agency.
- A regulatory agency inspection (excluding those that are Tier 1 Events) with notice of fine, penalty or corrective action.
- An excursion from a permit condition which requires a notification to be sent to an agency that results in any notice of fine, penalty or agency corrective action.
- All HSE audits, including Corporate audits, Peer review, the annual SAT (Self-assessment tool), audits for external HSE certification processes, and SBU audits or special initiatives.
- Any evaluations made by third parties such as HSE consultants or contracted HSE services. Recommendations from such evaluations must be entered as recommendations in the Event Tracking System.
- Significant community activism or adverse media coverage not associated with an episodic event at the local/state level.
- Notice of an allegation from a third party or regulatory agency of environmental impacts from operations on current or formerly operated Honeywell facilities.
- Demands, including voluntary agreements, to conduct a site investigation or remedial measures to respond to environmental impacts from operations on current or formerly operated Honeywell facilities.
- Receipt of an information request or special notice letter associated with the disposal, transportation or storage of hazardous substances by Honeywell or its predecessors.
- Identification of any condition or circumstance which falls under the criteria of “Issues requiring TRAC approval” for which TRAC approval was NOT obtained. [The Risk Assessment Committee \(TRAC\)](#) - HSEMS 605.

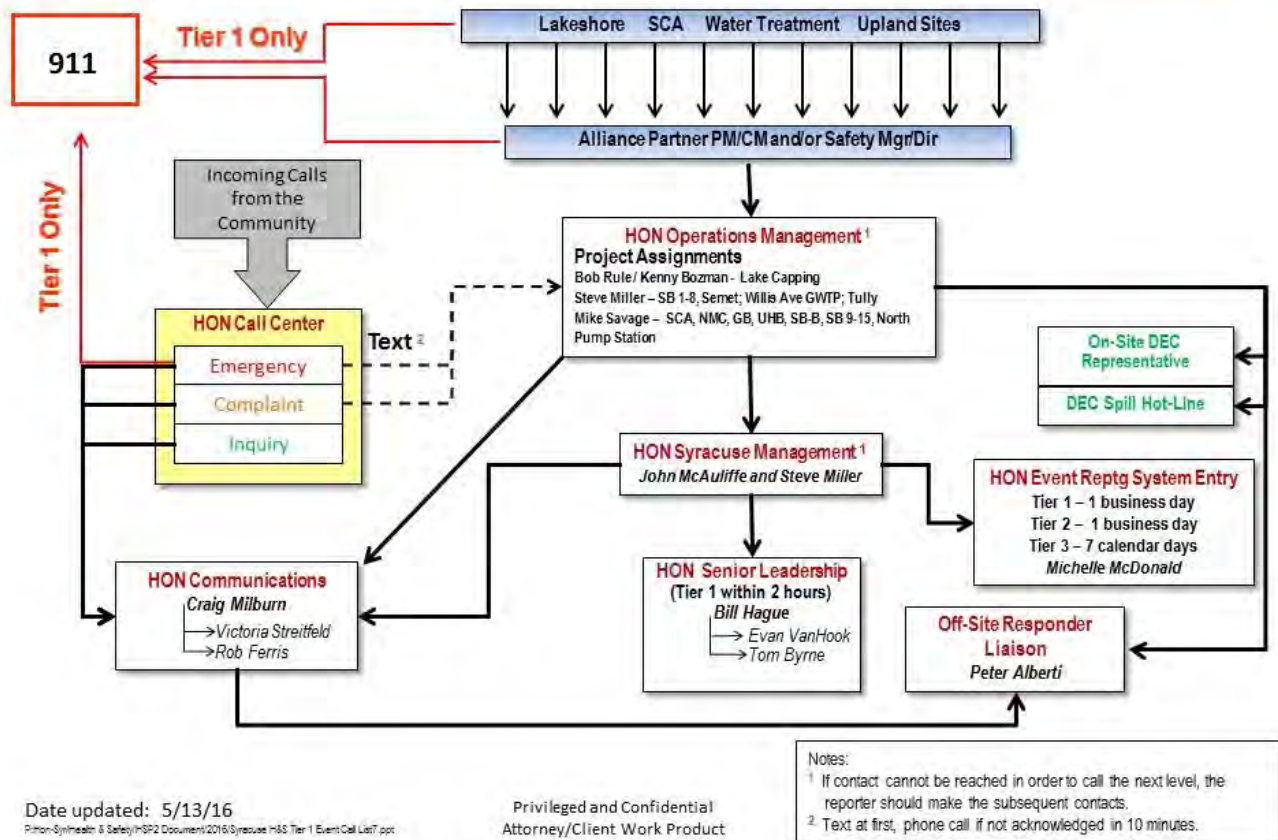
Tier 3 Examples

- On-site or off-site employee, contractor employee or visitor injuries/illnesses where first-aid treatment or evaluation is provided by a Medical or Para-Medical Professional (e.g., with no vaccination, prescription, or lost time).

- A regulatory agency inspection (which is not a Tier 1 or Tier 2 Event, and may still be underway) with no notice of fine, penalty or corrective action.
- A notification required to be sent to an agency based on an excursion from a permit condition that does not result in any notice of fine, penalty or agency corrective action as directed by the SBG for reporting:
- Employee, contractor or visitor injuries/illnesses injury/illness where first-aid treatment or evaluation is provided by someone other than a Medical or Para-Medical professional.
- Significant near misses.
- Stewardship outreach events with customers, suppliers and/or communities, Operations successes at facilities (i.e., ISO Certification, VPP, OHSAS, local or state recognition, etc.).
- An environmental excursion that does not also trigger Tier 2 reporting.

3. TIERS 1, 2, & 3 EVENT CALL LIST (Copied from the 2016 HSP2)

Syracuse Tiers 1, 2, & 3 Event Call List



Syracuse Event Call List – Phone Numbers

	<u>Office #</u>	<u>Mobile #</u>	<u>Home #</u>	<u>Alternate #</u>
<u>HON Operations Management</u>				
Kenny Bozman	NA	440.228.5827	NA	NA
Bob Rule	315.741.3743	865.548.6719	865.671.4981	NA
Mike Savage	315.741.3720	315.436.0765	NA	630.235.1423

HON Syracuse Management

John McAuliffe	316.552.9782	315.440.0859	315.699.1565	NA
Steve Miller	315-741.3723	315.935.5400	315.622.5301	315.552.9713
Michelle McDonald	315.552.9783	315.415.2420	315.699.9414	NA

HON Communications

Craig Milburn	315.552.9784	315.952.4751	315.303.4975	NA
Victoria Streitfield	973.455.5281	973.722.1324	NA	NA
Rob Ferris	973.455.3388	973.204.9621	NA	NA

Offsite Responder Liaison

Peter Alberti	NA	315.427.7801	NA	NA
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HON Senior Leadership

Bill Hague	973.455.2175	973.896.9366	973.292.5934	315.741.3727
Evan Van Hook	973.455.4132	862.222.7705	NA	NA
Tom Byrne	973.455.2775	973.610.4816	NA	NA

NYSDEC

Tim Larson	518.402.9676	518.402.0665	NA	315.484.2721
Bob Edwards	518.402.9676	518.469.5883	NA	315.484.2721
24-Hour Spill Hotline	800.457.7362			
Regional Spill Response - Richard Brazell	315.426.7523			315.426.7400

ATTACHMENT C

ACTIVITY HAZARD ANALYSES

Activity Hazard Analysis Master List

(to be updated as new task/activities are required)

AHA's to be developed prior to start of work:

ATTACHMENT D

**SUBCONTRACTOR MODEL SUBCONTRACTOR SAFETY, HEALTH,
AND ENVIRONMENT PLAN (SSHEP)**

HAZWOPER Template - Subcontractor Safety Plan (SSP)

Instructions for Completing this SSP – Delete from final version

Your actual SSP will begin with the cover/signature page

Welcome to the Honeywell Syracuse Portfolio

Health and Safety Program

(HSP²)

NOTE: The yellow highlight is used to show you where instructions are and where you are to modify this template. After providing the information requested, delete the yellow highlighted instructions. You can turn the yellow highlighting feature off or on throughout the entire document by clicking on TOOLS, OPTIONS, VIEW, HIGHLIGHT, from the toolbar.

Every Subcontractor working on a Honeywell Syracuse Portfolio Site (and their lower tier subcontractors) must establish, implement and maintain a written Subcontractor Safety Plan (SSP) and a copy must be maintained at each work site. The minimum requirements for establishing, implementing and maintaining an effective written Subcontractor Safety Plan are referenced in the contract and are described more thoroughly in the Honeywell Syracuse Portfolio Health and Safety Program (HSP²) guidance document. The Subcontractor and their lower tier subcontractors shall comply with the contract terms and shall complete their SSP to include detailed and specific descriptions relating to the following elements:

- Accountability/Responsibility/Key Line Personnel
- Statement of Subcontractor's Safety and Health Policy
- Drug and Alcohol Free Workplace
- Medical Surveillance Program
- Identification of Competent/Qualified Persons
- Scope of Work Evaluation
- Hazard/Risk/Exposure Assessment
- Hazard Control Measures/Job Safety Analyses (JSA's)
- Subcontractor Periodic Safety Audits/Inspections
- Subcontractor's Risk Mitigation – Two-Week Look Ahead Plan
- Compliance Requirements Policy

- Written Progressive Disciplinary Program
- Hazard Correction Policy
- Training and Instruction
- Project Site Orientation
- Employee Communication System
- Recordkeeping
- Incident/Near Miss Incident Investigations
- Emergency Action Plan
- Site-Specific Medical Emergency Plan
- Hazard Communication Program
- Respiratory Protection Program
- Medical Surveillance Program
- Other written programs as specified by regulatory agency or contract Requirements
- SSP Review and Modifications
- Detailed List of Tables, Forms, Appendices and Attachments

This SSP template has been prepared as an aid for use by Subcontractors and their lower tier subcontractors. Subcontractors should include the scope of work and corresponding safety requirements associated with their lower tier subcontractors in their SSP, unless the lower tiered subcontractor chooses to write a similarly detailed version themselves. This model SSP template was written for a broad spectrum of subcontractor employers so it should be modified to provide the appropriate information for your scope of work. If a section of this SSP does not apply to your project, insert “not applicable” or N/A. Do not delete any sections or change the numbering sequence.

The requirements you write into this SSP must be followed and compliance to those requirements must be audited by the Subcontractor’s Project Manager in order to be effective. In other words, “Plan your Work and Work your Plan”.

SUBCONTRACTOR SAFETY PLAN (SSP)

Prepared For:



Honeywell Syracuse Portfolio
Health and Safety Program

(Insert Office Name - Times New Roman 12 pt.)
(Insert Street Address - Times New Roman 12 pt.)
(Insert City, State and Zip Code - Times New Roman 12 pt.)

Project Name:

(Insert Client Name - Times New Roman 12 pt.)
(Insert Project Name - Times New Roman 12 pt.)
(Insert Street Address - Times New Roman 12 pt.)
(Insert City, State and Zip Code - Times New Roman 12 pt.)

Prepared By:

**(Insert Subcontractor Name – Times New Roman 18 pt.
Bold)**

(Insert Street Address – Times New Roman 12 pt.)
(Insert City, State, and Zip Code – Times New Roman 12 pt.)
Author: (Insert Name and Title)

REVIEWED AND APPROVED BY:

Subcontractor Project Manager: _____ Date _____

(INSERT DATE)

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LIST OF ACRYNOMS

ATV	All-Terrain Vehicle
BEI	Biological Exposure Index
CPR	Cardio Pulmonary Resuscitation
HSP ²	Honeywell Syracuse Portfolio Health and Safety Program
JSA	Job Safety Analysis
MSDS	Material Safety Data Sheet
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PM	Project Manager
PPE	Personal Protective Equipment
PSP	Project Safety Plan
SCBA	Self-Contained Breathing Apparatus
SHSO	Site Health and Safety Officer
SSP	Subcontractor Safety Plan
TLV	Threshold Limit Value

1. RESPONSIBILITY/IDENTIFICATION OF KEY LINE PERSONNEL

The following personnel have the authority and responsibility for implementing the provisions of this Subcontractor Safety Plan (SSP) for:

1.1 Site Contact Information

Project Site Location

On-site Contact No.

1.2 Key Project Personnel

Contractor:

Address:

Telephone:

Email:

Company Executive responsible for project:

Contact No.

Manager/Superintendent:

Contact No.

Safety Representative/Manager:

Contact No.

Key Foreperson(s):

Contact No.

Client Project Management Point of Contact:

Contact No.

All managers and supervisors are responsible for implementing and maintaining the SSP in their work areas and for answering worker questions about the SSP. A copy of this SSP is available for any employee to review.

2. STATEMENT OF SUBCONTRACTOR'S SAFETY AND HEALTH POLICY

(Include or attach your company's Safety and Health Policy Statement – not a company Health and Safety Manual or Standard Operating Procedures.)

2.1 Drug and Alcohol Free Workplace

State your company's drug and alcohol policy.

Describe your company's drug and alcohol testing requirements. At a minimum, they must meet the Honeywell Syracuse Portfolio Health and Safety Program (HSP²) requirements, summarized below:

- Pre-work. HSP² requirements call for pre-work testing for drugs and alcohol within two weeks prior to initial assignment for work on Honeywell projects, or a reasonable time frame acceptable to the Project Manager. Such testing will be repeated annually.
- Reasonable Suspicion. Project personnel may be tested if observed by trained management as exhibiting signs of use or possession of illegal drugs or alcohol.
- Post Accident. Personnel involved in an accident resulting in a fatality, disabling motor vehicle accident (requiring one or more vehicle to be towed away), injury requiring off-site medical treatment or property damage expected to result in > \$5,000 in loss will be tested for drugs and alcohol.
- Random. Certain projects may be selected for random testing at the discretion of the HSP² Safety Director.

State your company's policy on the use of legally obtained prescription drugs which may affect the safe performance of a worker.

State the disciplinary measures that will result from a positive drug test or a worker's refusal to submit to drug or alcohol testing. At a minimum, workers who test positive or refuse to be tested will immediately be removed from Honeywell projects.

3. IDENTIFICATION OF COMPETENT/QUALIFIED PERSONS

(Provide the individual names and job titles of personnel assigned to the project, including the dates of training for the topics mentioned below. Add rows as necessary, and indicate the appropriate training information. Include copies of certifications in the Appendix. Include certifications for the competent/qualified personnel, when applicable.)

(If the scope of work for lower tier subcontractors is included in this SSP, then the identification of competent/qualified persons for the lower tier subs must also be included in this section).

3.1 Competent/Qualified Personnel

Name	Job Title	40-hr HAZWOPER	8-hr HAZWOPER Supervisor	8-hr HAZWOPER refresher expires	Other training (i.e. CPR, excavation, confined space)
Insert name or "Not applicable"	Insert job title	Insert date of completion	Insert date of completion or "Not applicable"	Insert expiration date	Insert date of completion

NOTE: This table may be expanded and included as an appendix. If so, describe its location.

Training requirements include:

- 40-hour HAZWOPER and 8-hour annual refresher certificates – required for general site workers (such as equipment operators, general laborers and supervisory personnel) engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances and health hazard.
- 8-hour HAZWOPER Supervisor certificate – required for on-site management and supervisors directly responsible for, or who supervise employees engaged in, hazardous waste operations.
- Respirator Clearance – required for all personnel that may need to wear a half facepiece, full facepiece or supplied air respirator, or self-contained breathing apparatus (SCBA). Provide dates of training, medical clearance and fit testing. Include copies of medical clearance and fit testing records in the Appendix.
- Excavation Competent Person certificate – required for daily inspections of excavations greater than four feet in depth, the adjacent areas, and protective systems for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard increasing occurrence. These inspections are required when employee exposure can be reasonably anticipated.
- CPR/First Aid certification – A person who has a valid certificate in first-aid training from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence, shall be available at the worksite to render first aid in the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite. For on-the-water activities, time, rather than

distance, is the critical factor in determining whether first aid and CPR trained personnel are required. The vessel itself shall be considered the worksite.

- Confined Space Entry (Supervisor) certificate – the employer shall ensure that each entry supervisor knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure. Verifies, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin. Terminates the entry and cancels the permit as necessary. Verifies that rescue services are available and that the means for summoning them are operable. Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations. Determines, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained. Entrants and attendants, before assignment to a confined space operation, must demonstrate written documentation of confined space training appropriate to their assignment.

No worker will enter the exclusion zone, be exposed to hazardous substances or conditions or be assigned work unless they are properly trained, and the up-to-date documentation of such training has been submitted in advance.

4. SCOPE OF WORK EVALUATION

The work activities that will take place are described below. Activities of lower tier subcontractors will either be included in this section, or the lower tier subcontractor will complete their own SSP.

For this project, there *(insert “will” or “will not”)* be any lower tier subcontractors. Lower tier subcontractor activities *(insert “are” or “are not”)* included in this section. *(If there will be lower tier subcontractors, include the statement and table below):*

4.1 The lower tier subcontractors that will be working on the project will be:

SUBCONTRACTOR	WORK ACTIVITIES	HONEYWELL EVALUATION GRADE
<i>Insert Company Name or N/A</i>	<i>i.e. Groundwater Sampling</i>	<i>B (for example)</i>

NOTE: Each subcontractor must complete an HSP² Contractor Safety Evaluation package before being eligible to work on a Honeywell Syracuse Portfolio Project. Your Project Manager

or contact person will have access to a database of contractors that have submitted a Contractor Safety Evaluation package to determine the Evaluation Grade. If a “C” or “D” grade contractor is listed, justification must be included why the subcontractor is being used rather than an “A” or “B” grade subcontractor. Additional oversight and controls are required for the use of “C” or “D” contractors.

Major Activities of Contractor – describe activities in bullet format, in some degree of detail.

Major Activities of lower tier subcontractor(s) – describe activities in bullet format or insert “Not Applicable.”

5. HAZARD/RISK/EXPOSURE ASSESSMENT AND CONTROL MEASURES

(Describe the major activities and identify the associated hazards, risks and exposures. Thoroughly describe the control measures that will be used to minimize the identified hazards. This may be presented as a Table in this section, or a Job Safety Analysis (JSA) may be used for each major activity and added to this SSP as an appendix.) Regardless of the format, the Risk Assessment or JSA shall be updated and communicated to all affected parties daily or as frequently as necessary.

Major hazards or risks and exposures associated with the scope of work evaluation are listed below.

5.1 Job Safety Analysis

Task	Hazards/Risks	Controls
Insert Task	Hazard or Risk	Control

5.2 Chemical Safety Analysis

Chemical or Class	PEL/TLV	Hazards, Target Organs

PEL = OSHA Permissible Exposure Limit

TLV = ACGIH Threshold Limit Value



5.3 Chemical Monitoring Requirements

Chemical	Instrument	Location	Frequency

5.4 Action Levels and Response Summary

Chemical (or Class)	Action Level	Response

Complete table in detail, or state: "For each major activity listed, a JSA has been developed and is included as an appendix."

Provide an evaluation of reasonably anticipated exposures, action limits, Permissible Exposure Limits (PEL's), other relevant Occupational Exposure Limits (OEL), and the response required when an action level or exposure limit has been reached.

Insert any applicable measures to mitigate identified risks or hazards, using the hierarchy of hazard controls:

- Elimination of hazard or substitution of safer method
- Engineering controls
- Administrative controls
- Personal Protective Equipment, and
- Emergency response equipment or supplies

Some of these measures should include methods for identification of work zones, the level of personal protective equipment (PPE) to be worn (including respiratory protection), action levels based on potential chemical exposures (i.e., personal monitoring, area monitoring, etc.) and procedures for decontaminating personnel and equipment. This section should include specifics, not broad generalities.

6. SUBCONTRACTOR PERIODIC SAFETY INSPECTIONS/AUDITS

Inspections and audits shall be performed by competent persons or observers in the various areas of our workplace. Inspections will focus on worker behaviors as well as site and equipment conditions. An inspection is not considered completed until all identified corrective actions are implemented.

Daily inspections are required by the Site Health and Safety Officer (SHSO), foreman or other responsible party. The completion of the daily inspection must be noted in the construction or safety log. Any corrective actions taken or required must be noted as well.

Periodic, documented inspections are performed according to the following schedule:

- At least weekly
- When we initially establish our SSP
- When new substances, processes, procedures or equipment which present potential new hazards are introduced into our workplace
- When new, previously unidentified hazards are recognized
- When occupational injuries and illnesses occur
- When we assign workers to unfamiliar processes, operations, or tasks, and
- Whenever workplace conditions warrant an inspection

Periodic inspections consist of identification and evaluation of workplace hazards or behaviors, and specifying corrective actions that will eliminate or mitigate the identified hazards. The corrective actions will be assigned to a responsible person with a target completion date and tracked to completion. Temporary or interim measures will be applied and documented as well.

7. SUBCONTRACTOR RISK MITIGATION: TWO-WEEK LOOK-AHEAD

The Risk Mitigation Two-Week Look-Ahead Form is used to review risk mitigation strategies for previously identified tasks at weekly progress meetings.

The addition of previously unanticipated activities that have not been evaluated for risks and mitigation strategies typically would require the completion of additional JSA(s).

8. COMPLIANCE REQUIREMENTS POLICY

Management is responsible for ensuring that all safety and health policies and procedures are clearly communicated and understood by all employees. Managers and supervisors are expected to enforce the rules fairly and uniformly.

All employees are responsible for using safe work practices, for following all directives, policies and procedures, and for assisting in maintaining a safe work environment.

Our system of ensuring that all workers comply with the rules and maintain a safe work environment includes:

- Informing workers of the provisions of our SSP
- Responding to concerns expressed by the workers
- Evaluating the safety performance of all workers
- Recognizing employees who perform safe and healthful work practices
- Providing training to workers whose safety performance is deficient
- Disciplining workers for failure to comply with safe and healthful work practices, and
- The following practices:

— _____

9. WRITTEN PROGRESSIVE DISCIPLINARY PROGRAM

(Explain your company’s program or include a written program in the Appendix)

10. HAZARD CORRECTION POLICY

Unsafe or unhealthy work conditions, practices or procedures shall be corrected in a timely manner based on the severity of the hazards. Hazards shall be corrected according to the following procedures:

- When observed or discovered
- When an imminent hazard exists which cannot be immediately abated without endangering employees or property, we will remove all exposed workers from the area except those necessary to correct the existing condition. Workers necessary to correct the hazardous condition shall be provided with the necessary protection, and
- All such actions taken and dates they are completed shall be documented on the appropriate forms

11. TRAINING AND INSTRUCTION

All workers, including managers and supervisors, shall have training and instruction on general and job-specific safety and health practices. Training and instruction shall be provided as follows:

- When the SSP is first established
- To all new workers
- To all workers with respect to hazards specific to each employee's job assignment
- To all workers given new job assignments for which training has not previously provided
- Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard
- Whenever the employer is made aware of a new or previously unrecognized hazard, and
- To supervisors to familiarize them with the safety and health hazards to which workers under their immediate direction and control may be exposed

Workplace safety and health practices for all locations include, but are not limited to, the following:

- Explanation of the employer's SSP
- HSP² requirements
- Honeywell Contractor's Safety Handbook
- Site Emergency Action Plan
- Measures for reporting any unsafe conditions, work practices and injuries, and
- Means for identifying when additional instruction is needed

In addition, we provide specific instructions to all workers regarding hazards unique to their job assignment, to the extent that such information was not already covered in other training.

12. PROJECT SITE EMPLOYEES ORIENTATION PROGRAM SUBJECTS

As a condition of working on a remediation project involving the potential for exposure to hazardous substances and health hazards, our workers will receive information about the following subjects:

- Names of personnel responsible for site safety and health

- Honeywell’s contractor safety requirements
- Promptly reporting emergencies, incidents and unsafe conditions
- Emergency/evacuation plans
- Provisions for medical services and first aid including emergency procedures
- Safety, health and other hazards at the site
- Review of all activities on site and related Job Safety Analyses JSA’s
- Proper use of personal protective equipment
- Work practices by which a worker can minimize risk from hazards
- Safe use of engineering controls and equipment on site
- Acute and chronic effects of compounds at the site
- Decontamination procedures, and
- Hygiene requirements - Availability of toilet, hand-washing, and drinking water facilities

In addition to the above-mentioned information, we also orient our employees on: (Line out or write “not applicable” – DO NOT delete - topics that are not covered in your employee orientation.)

12.1 Site Orientation Topics

Covered or N/A	Site Orientation Topic
	Good housekeeping
	Road and highway safety practices – flagging, traffic control
	Heavy equipment operation – cranes, excavators, articulating dump trucks, etc.
	Driver safety - defensive driving, operation of pick-up trucks, all-terrain vehicles (ATVs), etc.
	Ladder and scaffold inspection and safety rules;
	Use of elevated platforms – aerial lifts and scissor lifts
	Other fall protection measures
	Fire prevention including Hot Work Permits



	Cleaning, repairing and servicing equipment and machinery
	Proper use of hand and power tools
	Guarding of belts and pulleys, gears and sprockets, and conveyor nip points
	Machine, machine parts, and prime movers guarding
	Lockout/Tagout procedures
	Materials handling
	Chainsaw and other power tool operation
	Unsafe weather conditions – lightning, high winds, etc.
	Mobilization/demobilization
	Yard operations: moving vehicles and equipment, receiving and shipping
	Landing and loading areas – rigging, tag lines, landing areas, release of rigging
	Ergonomic hazards - proper lifting techniques
	Personal protective equipment
	Hazardous chemical exposures
	Hazard Communication/Right to Know
	Physical hazards
	Heat and cold stress
	Noise
	Ionizing and non-ionizing radiation
	Biological hazards – poisonous plants, animals, bloodborne pathogens, etc. and
	Other job-specific hazards, such as:
	•
	•
	•

13. EMPLOYEE COMMUNICATION SYSTEM AND POLICY

We recognize that open, two-way communication between management and staff on health and safety issues is essential to an injury-free, productive workplace. The following system of communication is designed to facilitate a continuous flow of safety and health information between management and staff in a form that is readily understandable and consists of one or more of the following checked items:

- New worker orientation including a discussion of safety and health policies and procedures
- Review of our SSP and Construction Manager's Project Safety Plan (PSP)
- Workplace safety and health training programs
- Regular daily and weekly safety meetings
- Effective communication of safety and health concerns between workers and supervisors, including translation where appropriate
- Awareness campaign: Posted or distributed safety information
- A system for workers to anonymously inform management about workplace hazards
- A labor/management safety and health committee that
 - Meets regularly
 - Keeps written records of the safety and health committees meetings
 - Reviews results of the periodic scheduled inspections
 - Reviews investigations of accidents and exposures
 - Makes suggestions to management for the prevention of future incidents
 - Reviews investigations of alleged hazardous conditions, and
 - Submits recommendations to assist in the evaluation of employee safety suggestion
- Other: _____

14. RECORDKEEPING POLICY

We have taken the following steps to document implementation of our SSP:

- Records of hazard assessment inspections, including:
 - The persons conducting the inspection

- The unsafe conditions and work practices that were identified, and
- The action(s) taken to correct the identified unsafe conditions or work practices
- Documentation of safety and health training for each worker, including:
 - The worker's name or other identifier
 - Training dates
 - Types/topics of training, and
 - Training provider
- Air monitoring and other exposure records
- Written reports describing in detail, any accidents, incidents or near misses. A root cause shall be determined for such events. Corrective actions will be implemented and communicated to all site team members.
- Other records are retained as required by contract specifications or by local, state or federal (Occupational Safety and Health Administration (OSHA) regulations). Where regulations do not specify the length of records retention, a minimum period of three years after project completion will be used.

15. INCIDENT/NEAR-MISS INCIDENT INVESTIGATIONS POLICY

Procedures for investigating workplace incidents and near-miss incidents include:

- Responding to the incident scene as soon as possible
- Implementing measures to prevent further injury or damage and to preserve evidence
- Providing First Aid or coordinating any needed medical care
- Reporting incidents and near-miss incidents immediately to the appropriate HSP² point-of-contact. DO NOT delay! Certain levels of incident require immediate communication to Honeywell's upper management, and possibly to regulatory authorities
- Interviewing injured workers and witnesses
- Examining the workplace for factors associated with the incident/near-miss incident
- Determining the root cause of the incident/near-miss incident
- Taking corrective action to prevent the incident/near-miss incident from reoccurring
- Recording the findings and corrective actions taken, and
- Coordinating post-accident substance abuse testing

16. EMERGENCY ACTION PLAN

(Use this section to describe alarm signals, reporting procedures, evacuation routes, assembly areas, head count procedure, etc.)

Suggest:

- Warning alarm: multiple horn blasts, repeated
- Assembly area: Command post/trailer area
- A head count will be performed at the assembly area. Individuals should not leave work for the day until they are accounted for and properly reassigned or dismissed
- Evacuation route: site specific

Describe the preventative measures and response for unanticipated spills or releases to the environment. Include materials to be staged (e.g., spill kits) and their locations, procedures for containment and cleanup and reporting requirements, using the chain-of-command concept.

17. SITE SPECIFIC MEDICAL EMERGENCY PLAN

(Provide the name of emergency treatment facilities (Emergency Room) including contact numbers and route to the hospital. Also provide contact information for a local Occupational Medicine Clinic (for non-emergency use) that your company has contracted with for the treatment of routine or non-emergency incidents. The Occupational Medicine Clinic is a valuable asset in post-injury management and return-to-work programs. Provide names of competent first-aid and CPR personnel with dates of training certification and expiration. Include copies of employee certificates in the Appendix.)

17.1 Emergency Medical Care

Hospital/Emergency Care	Address	Telephone Number(s)

17.2 Occupational Medicine Clinic

Occupational Medicine Clinic	Address	Telephone Number(s)

17.3 Competent First Aid/CPR Personnel

Name(s) Competent Persons	First Aid	CPR

	Expiration Date	Expiration Date

NOTE: This table may be expanded and included as an appendix. If so, describe its location.

18. HAZARD COMMUNICATION PROGRAM

(In this section provide the name of the Haz Com Officer, a program outline, a list of the hazardous chemicals to be used and a description of where material safety data sheets (MSDS's) will be located. Include the written HAZ COM program and MSDS's for all chemicals to be used on site as an Appendix.)

19. RESPIRATORY PROTECTION PROGRAM

(If applicable to this project, provide an outline or summary of your company's written Respiratory Protection Program.)

(In this SSP, provide a description of the change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life must be provided in this section. The employer shall describe in the respirator program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.)

(Include the written respiratory protection program and copies of individual records (i.e., medical clearance, fit test and training) as an Appendix.)

20. MEDICAL SURVEILLANCE AND RESPIRATORY PROTECTION PROGRAMS

All project personnel performing intrusive work or entering the restricted area where intrusive work is being conducted, must be involved in a medical surveillance program meeting, at a minimum, the requirements of 29 CFR 1910.120.

Describe your company's medical surveillance requirements for this project. Include any biological monitoring, the relevant Biological Exposure Indices (BEI's) and the action limits, if any, that would initiate such biological monitoring.

Written evidence of medical surveillance requirements shall be maintained on-site and submitted prior to work for each affected person.



20.1 Medical Surveillance Requirements

Name	Job Title	Respiratory Clearance	Medical Exam	Respirator Fit Test	Other Med Surveillance Requirement
Insert name"	Insert job title	Insert expiration date	Insert expiration date	Insert expiration date	Describe frequency

NOTE: This table may be expanded and included as an appendix. If so, describe its location.

21. OTHER WRITTEN PLANS OR PROGRAMS AS REQUIRED BY REGULATION AND APPLICABLE TO THIS PROJECT.

(If applicable, attach other written programs as an appendix. If a plan listed below is not applicable, write N/A or lineout. DO NOT delete.

21.1 Other Written Plans or Programs

Included or N/A	Name of Plan or Program
	Site sanitation plan
	Layout/material storage plans
	Access and haul road plan/traffic patterns
	Procedures and tests
	Wild fire prevention plan
	Diving plan
	Man overboard plan
	Fire Aboard/Abandon ship plan
	Asbestos abatement plan
	Lead abatement plan
	Abrasive blasting
	Critical lift procedures
	Dangerous weather contingency planning
	Demolition plan

	Formwork and shoring erection and removal plans
	Blasting plan
	Nighttime operations plan
	Control of Hazardous Energy (Lockout/Tagout)
	Operation of a Forklift
	Confined Space Entry
	100 % Fall Protection Plan
	Other:

(Include any of the applicable written programs as an Appendix.)

22. SUBCONTRACTOR SAFETY PLAN (SSP) REVIEW AND MODIFICATIONS

The SSP shall be submitted to the Project Manager (PM) at least ten days before commencement of any field activities. The SSP will be reviewed, and may be returned with comments or requests for more details or clarification. Fieldwork shall not commence until the PM has provided written acceptance that the SSP meets contractual requirements. The responsibility for completeness, accuracy and regulatory compliance of the SSP rests solely with the subcontractor.

Minor modifications, such as typographical corrections, changing names or updating contact information, may be made by means of a routine submittal to the PM. JSA's for a new activity or previously unanticipated methodology should be submitted to the PM for review at least ten days before commencement of the new activity, or as early as practicable. Acceptable JSA's become an appendix to the existing SSP.

23. LIST OF TABLES, FORMS, APPENDICES AND ATTACHMENTS

List in detail any tables, forms, appendices and attachments. These elements are attached to and become part of the completed PSP.

Tables

- _____
- _____
- _____
- _____



Forms

- _____
- _____
- _____
- _____

Appendices

- _____
- _____
- _____
- _____

Attachments

- _____
- _____
- _____
- _____

ATTACHMENT E

HONEYWELL CONTRACTOR SAFETY HANDBOOK

Honeywell Contractor Safety Handbook

This informational Handbook is intended to provide a generic, non-exhaustive overview of a particular standards-related topic. This publication does not itself alter or determine compliance responsibilities, which are set forth in OSHA standards themselves and in the Occupational Safety and Health Act of 1970. Since the regulations, interpretations and enforcement policy may change over time, it may be necessary to seek additional guidance on OSHA compliance requirements. Any and all deviations from the guidelines and rules set forth in this Handbook shall have prior approval by Honeywell.

This Handbook serves as a guide and reference for the minimum rules and standards for contractors performing capital work, maintenance, repair, dismantlement, remediation or other activities that have the potential for an incident.

This Handbook should be issued to each contract employee working at a Honeywell facility, location or site. The perforated page at the back of the Handbook must be signed and returned to the Honeywell contact/representative prior to commencing work. After reviewing each Section of this Handbook, specific attention should be focused on the topics that will be encountered during the project/task.

Contract employees must also be familiar with their company's health, safety and environmental policies, procedures and guidelines.

Revised 12/99

Contractor Safety Excellence

Our Mission

We will achieve a premier level of safety performance for contractors working at Honeywell locations through increased safety awareness, communication of expectations, following work processes that reduce at-risk behaviors and ensuring the proper management of incidents.

Our Commitment

We recognize that outstanding safety performance is essential to the welfare of our employees, contractors and to business excellence. We will continue to improve our global competitiveness by making safety an integral part of all business activities.

Our Safety Principles

- We strive to prevent all incidents that may lead to injuries or illnesses.
- Safety performance is a responsibility of line management and every contractor.
- We design safety into the work place.
- Individual behavior is the most important factor in preventing incidents.
- We expect and require every contractor to work safely.
- Working safely is good business.
- Safety is an integral part of our culture and total quality processes.
- Our safety process must react to all incidents, not just accidents.
- We continually improve our safety process by auditing the process and correcting the root cause of deficiencies.
- We promote safety, both on and off the job.
- We prepare for emergencies.

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A. Introduction

- This handbook sets forth the safety requirements of Honeywell International Inc. (“Honeywell”)
- At Honeywell, it is our policy to provide a safe and healthful place in which to work. It is everyone’s obligation to work safely and to correct unsafe acts, practices and/or conditions for the protection of yourself and others.
- It is extremely important that you understand how your work is to be done in a safe manner. If you don’t know, stop and ask before you begin work.
- All work must conform to plant, local, state, and federal (OSHA) regulations (CFR 29 Part 1910 and 1926).
- The information in this handbook is general in nature and is to be considered the minimum.
Save
All
Fellow
Employees
This
Year
- During your orientation, you will be informed of the specific safety requirements for your particular site or plant.

B. General Information

Site Entry

- Personnel, vehicles, and equipment are subject to search upon entering or exiting the site premises.
- Personnel may be required to pass a drug test or show proof of passing a drug test within the past thirty (30) days prior to working at the site.

Vehicle Safety

- Operators of vehicles and equipment shall observe all site traffic regulations. Seat belts are to be worn at all times.

Pedestrians

- Pedestrians have the right of way. Pedestrians should use walkways where provided and should not take shortcuts through operating areas, buildings or other areas.

Cameras

- Cameras are not allowed on site without the proper authorization.

Running

- Running is not permitted on site except in an extreme emergency.

Smoking

- Smoking is permitted in designated areas only. Discard smoking materials in approved containers.

Conduct

- Horseplay, fighting, gambling, sexual harassment and the possession or use of firearms, alcoholic beverages and illegal substances is strictly prohibited.

Dress Code

- Pants must cover top of steel-toed leather work shoe and be in good condition. Shirts must have at least 4” of sleeve. Long sleeve shirts may be required at specific locations or for certain tasks.

C. Emergency and Disaster Procedures

In the event there is an emergency, anyone can activate the alarm any time there is a:

- Serious injury or illness
- Fire
- Major spill or release

When an alarm sounds, the following rules are in effect:

- All flame or hot work permits for welding, cutting, and spark producing equipment will be suspended until the all-clear signal is given.
- Smoking is prohibited.
- All traffic will pull to the side of plant roads and shut off engines until the all-clear signal is given.
- Report to your assembly point / area (if previously designated), or contact your Honeywell host.

Site Specific Emergency and Disaster Procedures

- Each Honeywell plant is equipped with an emergency alarm system, designated assembly areas and emergency phone numbers. The specific guidelines for reporting emergencies and disasters should be determined in your orientation.

D. Personal Protective Equipment (PPE)

Head Protection

- Contractors are required to wear approved hard hats that meet ANSI Z89.1-1971. Hard hats must be in good condition and be worn with brim to the front.

Eyes and Ears

- Each employee should know the location of the nearest eye wash/safety shower station in their area before starting work.
- Contractors are required to wear approved ANSI Z87.1 safety glasses with rigid side shields. Additional eye/face protection will be required when performing certain tasks (e.g.: welding, burning, grinding, chipping, sawing, drilling, handling chemicals or corrosive liquids, and pouring concrete or molten materials.) Check plant procedures.
- Approved hearing protection must be worn as specified in all posted areas and while working with or around high noise level producing tools, machines or equipment.

Fingers, Hand and Wrist

- Gloves suitable for the job being performed shall be worn unless the job cannot be done with gloves or wearing gloves increases the hazard.
- Tool holders should be used when driving stakes and wedges or when holding star drills, bull pins or similar tools.

Foot Protection

- In accordance with OSHA 1910.136, all contractors must determine if hazards are present (or are likely to be present) that may require the use of safety footwear.
- Safety footwear for contractors must be in accordance with ANSI Z41-1991, constructed of industrial quality leather and without urethane soles.
- Rubber boots with safety toe protection are required on jobs subject to chemically hazardous conditions.
- Metatarsal protection should be worn when using jack hammers, tamps and similar equipment which has the potential for foot injury above the toes.

Respiratory

- Respirators used by contractors must meet NIOSH/MSHA standards.
- Respirators must be inspected regularly and stored in a dust-free container.
- Employees required to wear a respirator must have a physician's approval and be fit tested. Employees must be clean shaven in the facial area to obtain an acceptable seal.
- Contractor must keep records of qualified users.

Skin

- If the possibility of skin contact with chemicals exists, personal protective equipment required by Material Safety Data Sheets shall be worn.

E. Hazard Communication / Right To Know

Upon beginning work at a Honeywell facility, each individual has the right to know information concerning the hazardous properties of any materials he/she may come in contact with. Training regarding potential hazards must be given to each individual and will include, but not be limited to, the following:

- An explanation of the hazard communication standard and the training requirements.
- An explanation of the project hazard communication program and its location.
- Notification of the locations of the hazardous

- chemicals.
- A description of the plant labeling and hazard rating system.
- A description of the Material Safety Data Sheet (MSDS), their use and location.

F. Permits

Certain types of work are not to be started until approval is given in the form of a signed permit. A written, properly authorized permit listed below may be required before you begin any activities in any production or operating area of the plant.

- **Work Permit** - required before any work can be started on any job in any area of the plant.
- **Line Breaking Permit** - required before breaking screwed, flanged, welded or other type joints on pipelines or vessels containing hazardous materials, or breaking into (disconnecting, drilling, sawing, etc.) non-hazardous materials under pressure.
- **Confined Space or Vessel Entry Permit** - required before entering tanks, vessels, manholes or similar confined spaces that have been in service or connected to operating process equipment and may contain potentially hazardous atmospheric conditions.
- **Lockout / Tagout Permit** - required for the service and maintenance of machines and equipment in which the *unexpected* energization or start up of the machines or equipment, or release of stored energy could cause injury to workers.
- **Excavation Permit** - required to minimize hazards during excavation work and ground breaking operations, specifically when a machine or hand tools are used at a depth greater than one foot. Excavations greater than four foot in depth must be inspected and approved by a competent person and have a Confined Space permit before access by personnel.
- **Hot Work Permit** - required before any flame or spark producing activity can begin in any production, operating, or some construction areas of the plant. This includes, but is not limited to:
 - Welding / Repair of pipe lines under pressure greater than 5 PSI.
 - Welding / Repair of pipe lines containing hazardous or flammable materials.
 - Welding / Repair on any pressure vessel, fired or unfired, under pressure or in the presence of hazardous or flammable materials.
 - Work on energized circuits.
 - Cutting / Burning of pipe lines, vessels, equipment, etc. that may have contained any hazardous material.
 - Grinding
 - Any hot work on carbon steel pipe lines, vessels, equipment, etc. that may have contained sulfuric acid will not be permitted without extensive review with project and plant personnel due to the possible generation of hydrogen gas.

Each plant may have permits that are required for other specific work procedures. Check with your supervisor for these permits.

G. Fall Protection

- 100% fall protection (i.e. two lanyards when moving in certain areas) is required for all work above six (6) feet.
- Safety full body harnesses must be arranged so the d-ring is in the rear.
- Safety belts are not to be used for support or as a lineman's belt.
- Lanyards must be secured to an anchorage point overhead that can support 5,000 lbs. using as short a line as possible, not to exceed five (5) feet..
- All fall protection equipment shall be inspected by the user prior to each use.
- Lanyards may not be tied-off to any pipe/conduit less than 2" in diameter.
- Safety harnesses shall be worn and tied off when performing work on the following:
 - Sloped roofs
 - Flat roofs without handrails, if within 6 feet of the edge of the roof or opening
 - Any suspended platform or stage
 - All scaffolding six (6) feet above supporting work surface
 - When working on the sixth step or higher

- on a ladder
- Ladders near the edge of roofs or floor openings
- Any unguarded areas six (6) feet above any supporting work surface
- An aerial lift.

H. Barricades, Signs, and Floor Openings

All floor openings/penetrations (i.e. holes > 2") must be properly covered or guarded. Barricades and signs must be posted when working in or around the following:

- All manlifts and the immediate working area.
- In ceilings, pipe bridges, etc.
- Removing roofing panels, walls, etc.
- Swing radius of cranes and the area where the lift will be made and moved to.
- Any open excavation.
- Any confined space entry.

Types of Barricades

- Warning barricades call your attention to a hazard but offer no physical protection. Examples: yellow, red, blue synthetic tape on stands or posts, plastic, or wooden snow fence.
- Protective barricades warn and provide physical protection and shall withstand 200 lbs. of force in any direction with minimal deflection (3"). Examples: wood post and rail, cable and wood post and chain.

Guidelines

- Barricades shall be 42 inches high and maintained square and level.
- Barricades shall be erected before any work begins.
- Blinking lights must be used on road blocks after dark.
- An access opening or gate should be provided where practical.
- Barricades and signs shall be fully informative, legible, and visibly displayed.
- Barricades and signs shall be removed when no longer needed.

Hole Covers

- Must be installed immediately.
- Hole covers or barricades are required at any floor elevation.
- Material and equipment must not be stored on a hole cover.
- Must be secured to prevent movement and be marked with the word "HOLE" or "COVER".
- Must extend adequately beyond the edge of the opening (i.e. 3") and must not be more than 1" high.
- 3/4" plywood will be used providing the opening is less than 18". For any opening greater than 18 inches, 2 inch lumber or doubled 3/4 inch plywood is required.

I. Ladders and Scaffolds

- Inspect ladders before use - identify defective ladders with "Do Not Use" tag.
- Only a "Type I" ladder with a minimum rating of 250 lbs. is acceptable.
- Metal ladders are prohibited.
- Fall protection must be worn when working on the sixth step or higher.
- When ascending and descending a ladder, face the approved side of the ladder, use at least one hand to grasp the ladder, and do not carry tools or materials in your hands.
- All ladders shall have a tie-off rope, non-skid safety feet and be tied-off.
- Never work off a ladder where the midpoint of the body (i.e. belt buckle) must be extended beyond the side rails.

Straight or Extension Ladders

- Follow the 4-to-1 rule when using an extension or straight ladder - position the base of the ladder one (1) foot from the supporting structure for every four (4) foot in height.
- If a ladder is used to reach a higher platform, the top of the ladder must extend three (3) feet past the platform.
- Do not work off of the top three (3) rungs of any straight or extension ladder.

Step Ladders

- Step ladders shall be set with all four (4) feet level.
- Ladders used in traffic areas must be secured or barricaded to prevent displacement.
- Never work off of the top two steps of step ladder.
- Never stand or sit on top of step ladders.

Scaffolding

- All scaffolds must conform to the OSHA Standard (Subpart L)
- All scaffolds are to be erected level - plumb on a firm base.
- When space allows, all scaffolds must be equipped with access ladders that extends three (3) feet past the landing gate. At landings, 42" high handrails rigidly secure, 21" high mid-rails rigidly secure, completely decked with safety planking or manufactured scaffold decking and rigidly secured toeboards on all four sides.
- A competent person must determine the feasibility and safety of providing fall protection for employees erecting and dismantling scaffolds, and train those employees accordingly.
- All scaffolds shall have a tag attached, completed by the competent person, stating what type of fall arrest system is required.
- All personnel working on scaffolds must be trained by a qualified person in the subject matter to recognize the hazards associated with the type of scaffold being used and the nature of any hazards (i.e. electrical, fall, falling objects, etc.).
- Retraining must be provided where inadequacies in an affected employee's work practices involving scaffolds are observed.
- Safety harness and tie-off required when working from scaffolding over one buck high.
- Personnel shall not climb or do any rigging from a scaffold, handrail, mid-rail or braces.
- No one may alter any scaffold member by welding, burning, cutting, drilling or bending.
- Scaffolds shall be tied off or stabilized with outriggers when its height exceeds three times the smaller dimension of its base, but tie-offs must not exceed 26 feet vertically.
- Scaffolds must be tied off horizontally every 30 feet.
- No one shall ride on a rolling scaffold when it is being moved. All tools and materials shall be removed or secured to the decking before moving the scaffold.

J. Housekeeping

Good housekeeping plays a key role in preventing accidents and fires. Good housekeeping is emphasized as a vital safety measure.

- Keep everything in its proper place - store materials and equipment in a safe and orderly manner.
- Put trash, scrap materials and other waste in the proper containers.
- Clean up tools and work areas as your job progresses - do not wait until the end of the work day.
- Keep the floor of the work area clear of tools, cords, and scrap materials.
- Insure that work tables are occupied only by work at hand and tools required for work being done.
- All work areas are to be left in orderly and clean condition at the end of each work day.
- Keep cords and hoses at least seven (7) feet overhead over walkways and work areas or lay them flat outside of walkways.
- Maintain clear access to all work areas. Do not block fire extinguishers, emergency equipment, electrical boxes or panels, or other safety/fire equipment.

K. Tools - Hand and Power

- Do not operate any tool without proper instruction.
- Only qualified persons are to use tools and equipment.
- Honeywell tools and equipment are not to be used by contractors.
- Do not use any tool or equipment for any purpose other than that for which it was designed.
- Personal tools are subject to inspection at any time.

- It is your responsibility to inspect all tools prior to each use. Do not use a tool that is deemed defective. Report and tag all defective tools.
- Do not lift electrical tools by the cord.
- Tools may be inspected and marked with color-coded tape each month. Check with your Supervisor for designations and do not use a tool without the appropriate color-coded tape.

Hand Tools

- Worn tools are dangerous! Replace or repair the tool.
- Every tool was designed to do a certain job. Use a tool for its intended use only.
- Tools subject to impact (chisels, star drills and caulking irons) tend to “mushroom.” Keep them dressed to avoid flying spalls. Use tool holders.
- Don’t force tools beyond their capacity or use “cheaters” to increase their capacity.

Power Tools

- Material should be secured when power tools are applied to it.
- Each power tool should be examined for damaged parts, loose fittings, and frayed or cut electrical cords before use.
- Portable electrical equipment and tools shall be grounded unless “double insulated.” A ground fault circuit interrupter (G.F.C.I.) shall be used for working in damp areas when using permanent plant power or as otherwise required.
- Electrical cords shall be unplugged and air lines deactivated and bled down before adjusting, servicing, repairing, or changing bits and blades in electrical or pneumatic tools.
- Any pneumatic hoses exceeding ½ inch in diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure. All hose connections shall be properly secured.
- All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer.
- Only licensed and qualified personnel shall be allowed to operate power-actuated tools.
- Power tools should be unplugged when not in use.

L. Mobile Equipment

- Anyone who operates any mobile equipment (cranes, manlifts, pick-ups, forklifts, etc.) must demonstrate knowledge and competency for each make of equipment.
- All equipment will be inspected daily before use to insure it is in proper operating condition. If the equipment becomes defective in any way, notify your supervisor at once and place a “DANGER - DO NOT USE” tag on it.
- All equipment is to be supplied with seat belts, back-up alarm and fire extinguishers (back-up alarm is not required on pickup trucks.)
- Use of gas/diesel equipment inside operating building is prohibited unless approved by the Safety Department.

M. Cranes

- All operators must be certified and licensed to operate each make and model of crane.
- The operator is solely responsible for the safe operation of the crane.
- The operator has full responsibility for the safety of a lift and may not make a lift until safety is assured.
- A copy of the load chart, manufacturer’s operators’ manual and inspection record must be in the crane cab or on project site.
- All cranes and the immediate work area must be barricaded at all times.
- No load shall be swung over any persons.
- Outriggers must be leveled and fully extended when making a lift.
- No part of the crane, load, hoist (load and boom) lines, boom and tag line shall come within 10 feet of energized electrical lines.
- For pick and carry operations, consult the manufacturer’s operator manual.
- Riding on crane hooks and/or “headache” balls is prohibited.
- Operators are not permitted to leave the crane while holding a live load.

- The use of suspended personnel platforms (crane baskets) must meet all OSHA requirements. The use of a crane or derrick to hoist employees on a personnel platform is prohibited unless all requirements of 1926.550 (g) are met. A company plan and check list must be used.
- A lift plan is required for any critical lift.
- Lifting in high winds (e.g. greater than 20 mph) is not recommended.

N. Material Handling Equipment

- All material handling machines must have backup alarms, horns, rollover protection structures and seat belts when provided by manufacturer.
- The operator must be trained to operate each make and model of machine.

O. Personnel Lifting Equipment

- The operator must be trained to operate all personnel lifts.
- All employees are to have a safety belt or safety harness on and tied off when working out of: manual personnel lifts, power platform lifts, scissors lifts, high-reach lifts, etc.
- Tie-off shall be made to the lifting equipment.
- Personnel are not to get under lifts.
- When exiting the lifting equipment onto a proper working elevated platform, the employee must be tied off to that platform immediately prior to, and during, that exit.

P. Cars, Pickups, and Trucks

You must have a valid driver's permit to operate any vehicles on plant property. You must obey the following rules:

- Wear your seat belt.
- Obey plant speed limits and stop signs.
- Motors must be shut-off when refueling.
- Stop at all railroad crossings.
- No more than three (3) people on a front bench seat, two (2) people if bucket seats.
- Mount and dismount the vehicle only when it is stopped.
- Keep arms, feet and bodies inside the vehicle.
- Look to the rear and sound your horn before backing up.
- Inspect the vehicle each day before use.
- Riding in the rear of a truck is prohibited unless approved seating with seat belts has been provided.

Q. Rigging

- All personnel who perform or assist in rigging operations shall have received appropriate training and be competent.
- Only ONE eye in a hook. Use a shackle to hold two (2) or more eyes.
- Tag lines are required to control lifted loads made by mechanical equipment. Never put hands on a load or wrap tag lines around your hands or body.
- Never raise a load over other people.
- Know the capacities of the rigging equipment and the weights of the loads.
- Never rig from any structural member until you are sure it will support the load.
- Never use plate grips, tongs, pipe clamps, etc. as substitutes for beam clamps.
- Two slings will be used unless impractical. If one sling is used, double wrapping is required.
- Continuous synthetic slings may be used only when heat or chemicals are not a factor, and where load permits.
- Flat nylon straps should not be used for erecting steel. Wide nylon straps may be used for lifting tube bundles, fiberglass ducts or other material that could be damaged by a metal sling. The use of flat nylon strap with any visible tear or defect is strictly prohibited.
- Steel slings should be used where heat or chemicals are a potential factor. The use of steel slings with damaged strands or other defect is strictly prohibited.
- The use of a come-a-longs with cracked or damaged handles is strictly prohibited.
- Chainfalls and come-a-longs must have OSHA approved safety spring return latches on all hooks.
- Daily, weekly, and monthly inspection records will be kept by the contractor.

R. Chain Falls and Hoists

- Inspect hoists daily (operations), monthly (maintenance) and annually (3rd party vendor).
- A chain hoist must be used within its rated capacity, marked on the equipment.
- Do not leave an unsecured and unattended load hanging on a hoist or chain fall.
- Do not stand or have any part of the body below a load suspended on a chain hoist.
- Do not wrap the load chain around the load to be lifted.
- Use of "cheater bars" is strictly prohibited.
- Use a shackle to connect straps to a hook.

S. Fire Protection and Prevention

- Be sure to locate the nearest fire extinguishers in your work area before starting work.
- As warranted by the project, a trained and equipped fire fighting organization (Fire Brigade) will be provided to assure adequate protection of life.
- All fire hydrants, fire extinguishers, fire blankets, etc. shall be clearly marked and not obstructed.
- Combustible materials shall be kept away from steam lines, radiators, heaters, hot process and service lines.
- For any job requiring hot work or open flame or welding, a fire extinguisher must be within 20 feet of where the work is taking place.
- Fire extinguishers shall be checked daily before starting work.
- Portable power equipment must not be refueled while running or when hot. Attach the ground wire before refueling.
- Store flammables in properly labeled metal type containers and in designated areas.
- Fire blankets must be used to protect equipment, control panels, instrumentation, etc. when welding, cutting, burning, or grinding overhead.
- "Borrowing" plant fire extinguishers is not permitted.

T. Material Handling / Stability Control

Proper material handling and stability control insures that personnel, material, and equipment are safe from unexpected movement such as falling, slipping, rolling, tripping, or any other uncontrolled motion.

- Clean up ragged metal edges.
- Pull all protruding nails and wires or bend them flush.
- Set on dunnage for ease of handling.
- Check all material and equipment to prevent rolling.
- Tie down all light, large-surface-area material that might be moved by the wind.
- Put absorbent on all grease and oil spills immediately and clean them up. Notify proper plant personnel of spills if significant.
- Salt or sand icy walk areas immediately.
- Use proper lifting techniques when moving material by hand.
- Know the weight of the object to be handled.
- Protect the area around and below you.

U. Welding and Burning

General

- Before beginning any flame or spark producing operations in the plant, check with your supervisor about any permits that may be required. Follow the requirements on the permit.
- Keep welding leads and burning hoses clear of passageways.
- Each welder is responsible for containing sparks and slag and/or removing combustibles to prevent fires. The welder is also responsible for making sure there is a fire watch and a good fire extinguisher for the duration of the operation.
- Provide adequate screens to protect vision of general public.

Welding - Electric

- All work must have a separate and adequate ground.
- Welding rods are not to be left in the electrode holder when not in use. Stub ends are to be put in proper containers - not on the floor.

- All weld arcs shall be shielded.
- All welding machines are to be shut off when not in use.
- Hard hats with the brim to the front must be worn during welding operations by the welder.
- An approved welding shield must be worn. Use no less than a No. 10 filter plate with safety plate on both sides of the filter plate.
- Powered welding machines should be operated in well ventilated area only and will be diesel fueled only, unless otherwise approved by safety.

Burning - Gas

- The operation of oxygen and fuel gas burning equipment shall only be done by trained and experienced personnel.
 - Do not exceed 15 P.S.I. on the torch side of the gauge when using acetylene.
 - Only an approved spark lighter should be used to light a burning torch. Do not use matches, cigarettes, lighters or hot work.
 - Always clean burning tips with the proper type cleaner.
 - All burning rigs must be broken down at the end of the shift with regulators removed and caps screwed down hand tight.
 - Approved burning goggles must be worn and No. 4 lenses or darker must be used.
 - Keep oil and grease away from oxygen regulators, hoses and fittings. Do not store wrenches, dies, cutters, or other grease covered tools in the same compartment with oxygen equipment.
 - Compressed gas bottles shall be kept in bottle carts or secured in an upright position. They must be transported and stored in a secured, upright position with protective caps in place.
 - Oxygen and acetylene compressed gas bottles should not be stored together. They must be stored a minimum of 20' apart or have a 5 feet high, 30 minute rated fireproof wall between the two bottles.
 - All gauges, hoses, and torches should be inspected on a regular basis. A back flow preventer is required on all regulators.
 - When in use, place cylinders and hoses where they are not exposed to sparks and slag from the burning operation.
-
- Any hot work on carbon steel pipe lines, vessels, equipment, etc. that may have contained sulfuric acid will not be permitted without extensive review with project and plant personnel due to the possible generation of hydrogen gas.
 - Handle cylinders with care.
 - Lift to upper levels with approved carts only.
 - Do not strike an arc on cylinders.
 - Do not use cylinders as rollers.
 - Do not lift with slings or by the protective cap.

Protective Clothing

- Only cotton, woolen, leather or special fire retardant synthetic clothing should be worn when burning or welding. Synthetics are very flammable and melt and cause more serious burns when exposed to flames and high temperatures.

V. Steel Erection

General

- 100% tie-off is required at ALL times
- Containers shall be provided for storing or carrying rivets, bolts and drift pins, and secured against accidental displacement when aloft.
- A load shall not be released from the hoisting line until the members are secured with not less than two bolts, or equivalent at each connection and drawn up wrench tight.
- Tag lines are required for controlling loads.
- When bolts, drift pins or rivet heads are being knocked out/off, means shall be provided to keep them from falling.
- Impact wrenches shall be provided with a locking device for retaining the socket.

W. Accident / Incident Investigation

- Notify Honeywell personnel (project engineer, plant safety, construction safety, etc.) immediately after any injury (medical treatment and first aid cases), equipment or property damage, environmental excursions, or near-miss incidents.
- A Honeywell Contractor Incident Investigation Report shall be completed by the contractor company immediately upon knowledge of the incident.
- The report may be completed by an investigation team headed up by the contractor company, and assisted by the Honeywell project manager / engineer, site safety leader, the individual(s) involved and any other necessary personnel. All sections of the report are to be completed, signed and dated.

X. OSHA Reference Guide

<u>Subject</u>	<u>Reference</u>
Barricades	Subpart G - 1926.202 Barricades
Cars, Pickups & Trucks	Subpart O - 1926.601 Motor Vehicles
Chain Falls	Subpart H - 1926.251 Rigging Equip. for Mat. Handling
Compressed Gases	Subpart H - 1910.101 General Requirements
Concrete & Masonry	Subpart Q - 1926.700 Scope, Application & Requirements
Confined Space Entry	Subpart J - 1910.146 Permit-Required Confined Spaces
Cranes	Subpart N - 1926.550 Cranes & Derricks Subpart N - 1910.179 Overhead & Gantry Cranes
Demolition	Subpart T - 1926.850 Preparatory Operations
Egress	Subpart C - 1926.34 Means of Egress Subpart E - 1910.35 Definitions
Electrical	Subpart K - 1926.400 Introduction Subpart S - 1910.301 Introduction
Emergency Procedures	Subpart C - 1926.35 Employee Emergency Action Plans Subpart D - 1910.38 Employee Emergency Plans
Excavations	Subpart P - 1926.650 Scope, Application & Definitions
Eye Protection	Subpart E - 1926.102 Eye and Face Protection Subpart I - 1910.133 Eye and Face Protection

<u>Subject</u>	<u>Reference</u>
Fall Protection	Subpart E - 1926.104 Safety Belts, Lifelines & Lanyards Subpart M - 1926.500 Scope, Application & Definitions
Fire Protection	Subpart C - 1926.24 Fire Protection and Prevention Subpart F- 1926.150 Fire Protection Subpart L - 1910.155 Scope, Application & Definitions
First Aid	Subpart C - 1926.23 First Aid and

	Medical Attention
	Subpart D - 1926.50 Medical Services & First Aid
	Subpart K - 1910.151 Medical Services & First Aid
Floor Openings	Subpart M - 1926.502 Fall Protection Criteria & Practices
	Subpart D - 1910.23 Guarding Floor and Wall Openings
Foot Protection	Subpart E - 1926.96 Occupational Foot Protection
	Subpart I - 1910.136 Foot Protection
Hand Protection	Subpart I - 1910.138 Hand Protection
Hazard Communication	Subpart D - 1926.59 Hazard Communication
Hazardous Waste	Subpart D - 1926.65 Operations & Emergency Response
	Subpart H - 1910.120 Operations & Emerg. Response

<u>Subject</u>	<u>Reference</u>
Head Protection	Subpart E - 1926.100 Head Protection
	Subpart I - 1910.135 Head Protection
Hearing Protection	Subpart E - 1926.101 Hearing Protection
	Subpart G - 1910.95 Occupational Noise Exposure
Hoists	Subpart N - 1926.552 Mat. Hoist, Personnel Hoist & Elev.
Housekeeping	Subpart C - 1926.25 Housekeeping
Illumination	Subpart D - 1926.56 Illumination
Incident Investigation	Honeywell Contractor Near Miss/ Incident Investigation Report.
Ladders	Subpart X - 1926.1053 Ladders
	Subpart D - 1910.22 General Requirements
Lockout/ Tagout	Subpart K - 1926.417 Lockout and Tagging of Circuits
	Subpart J - 1910.147 Control of Hazardous Energy
Material Handling Equip.	Subpart O - 1926.602 Material Handling Equipment
Materials Handling	Subpart H - 1926.250 General Requirements for Storage
Mobile Equipment	Subpart O - 1926.600 Equipment
Permits	Per Site Specifics. Check With Your Site Contact.
Personal Protective Equip.	Subpart C - 1926.28 Personal Protective Equipment
	Subpart E - 1926.95 Criteria for Personal Protect. Equip.

Subpart I - 1910.32 General Requirements

<u>Subject</u>	<u>Reference</u>
Personnel Lifting Equipment	Subpart L - 1926.453 Aerial Lifts Subpart N - 1926.552 Personnel Hoist & Elevators
Respiratory Protection	Subpart F - 1910.68 Manlifts Subpart E - 1926.103 Respiratory Protection Subpart I - 1910.134 Respiratory Protection
Rigging	Subpart H - 1926.251 Rigging Material Subpart N - 1910.184 Slings
Sanitation	Subpart D - 1926.51 Sanitation
Scaffolds	Subpart J - 1910.141 Sanitation Subpart L - 1926.451 Scope, Application & Definitions Subpart D - 1910.28 Safety Requirements for Scaffolding
Signaling Signs	Subpart G - 1926.201 Signaling Subpart G - 1926.200 Accident Prevention Signs & Tags Subpart J - 1910.145 Specifications for Signs & Tags
Stairways	Subpart X - 1926.1050 Scope, Application & Definitions
Steel Erection	Subpart R - 1926.750 Steel Erection
Tools - Hand & Power	Subpart I - 1926.300 General Requirements Subpart P - 1910.241 Definitions
Training & Orientation	Subpart C - 1926.21 Safety Training and Education Per Site Specifics. Check With Your Site Contact.
Ventilation	Subpart J - 1926.353 Ventilation and Protection Subpart G - 1910.94 Ventilation
Welding & Burning	Subpart J - 1926.350 Welding & Cutting Subpart Q - 1910.251 Definitions

Y. Acknowledgement Page - Read Carefully Before Signing Below

This is to acknowledge that I have received my copy of the Honeywell Contractor Safety Handbook and an orientation on its contents as well as other project rules and policies. I will read and abide by all rules and regulations in the handbook and any additional rules and regulations of my job. I understand that working safely, complying with and obeying any and all Company and Honeywell safety rules, regulations or standards is a condition of employment. Should I not comply with Company and/or Honeywell safety rules, regulations or standards, I am subject to disciplinary action including removal from the site and possible termination of employment. In consideration of my employment, I further agree that my employment and compensation can be terminated at any time, with or without cause or notice, at the option of either the Company or myself. I understand further that this handbook and the rules and regulations it contains do not in any way constitute a contract (either expressed or implied) of employment between the Company as my employer and me for any indefinite or specified period of time. The Company reserves the right to change its policies as summarized herein.

Print Full Name

Signature

Contractor Company Name

Craft

Honeywell Contact/Representative

Date

Note: The perforated last page and the back cover of this booklet contain the same wording. After properly endorsed, the perforated page is to be removed and given to the Honeywell contact/representative.

Rev. 12/99

Y. Acknowledgement Page - Read Carefully Before Signing Below

This is to acknowledge that I have received my copy of the Honeywell Contractor Safety Handbook and an orientation on its contents as well as other project rules and policies. I will read and abide by all rules and regulations in the handbook and any additional rules and regulations of my job. I understand that working safely, complying with and obeying any and all Company and Honeywell safety rules, regulations or standards is a condition of employment. Should I not comply with Company and/or Honeywell safety rules, regulations or standards, I am subject to disciplinary action including removal from the site and possible termination of employment. In consideration of my employment, I further agree that my employment and compensation can be terminated at any time, with or without cause or notice, at the option of either the Company or myself. I understand further that this handbook and the rules and regulations it contains do not in any way constitute a contract (either expressed or implied) of employment between the Company as my employer and me for any indefinite or specified period of time. The Company reserves the right to change its policies as summarized herein.

Print Full Name Signature

Contractor Company Name

Craft

Honeywell Contact/Representative

Date

Note: The perforated last page and the back cover of this booklet contain the same wording. After properly endorsed, the perforated page is to be removed and given to the Honeywell contact/representative.

Rev. 12/99

*** To be completed by the Contractor Company with assistance from
Honeywell personnel**

Date Incident Reported:		Honeywell Location:		Honeywell Contact:	
Date of Incident:		Time of Incident:		Name of Contractor Company:	
Name of Individual(s) Involved w/Incident:			Name of Injured Worker (if applicable):		Name of Supervisor/Foreman:
If an Individual was Injured, were they working under the direct supervision of Honeywell?			Age of Individual Involved:		Job Classification/Title/Craft:
Length of Work Experience at Job Classification:			Length of Employment with Company:		Length of Time Working at Site:
Was the Individual Involved with the Incident Performing their Regular Job? If "No", explain why:			Date of Site Safety Orientation:		Last Formal/Documented Safety Meeting Attended:
Hours Worked that Day/shift Prior to the		Hours Worked that Week Prior to the Incident:		Consecutive Days/Shifts Worked Prior to the Incident:	
				Last Day Off Prior to the Incident:	
Description of incident according to the individual(s) involved or injured (including what happened and how the incident occurred):					
According to the individual(s) involved with the incident or injured, what could have been done differently to prevent this incident from occurring?					
Why weren't these done prior to the incident?					
Describe any First Aid or Medical Treatment Provided On Site and/or at a Medical Facility. NOTE: Any follow-up treatment at a later date must be communicated to Honeywell (Contractor Safety Leader).					
Date that the Injured Individual Returned to Work?		Any Work Restrictions or Lost Time?		If "Yes", describe:	
				NOTE: Any work restrictions or lost time at a later date must be communicated to Honeywell (Contractor Safety Leader).	
Was there any Property Damage?		If "Yes", describe:			

Contractor Supervisor/Foreman should complete the information below with an Investigation Team

Team Investigation – List the Possible Causes of the Incident Below.
For Each Possible Cause Listed Above, Reply "Why" or "Why not" the Cause Occurred.
Corrective Action(s) Taken - List Person(s) Responsible and Target Date:
Contractor Investigation Team - Leader & Members:

Date Incident Reported:	Honeywell Location:	Honeywell Contact:	
Approval (Individual Involved/Injured):		Title:	Date:
Supervisor Approval (Print Name):		Title:	Date:
Honeywell Site Approval (Print Name):		Title:	Date:

HONEYWELL

01620 EXHIBIT 1 MOTOR VEHICLE ACCIDENT REPORT

Report #: _____

DATE OF ACCIDENT _____ DAY OF WEEK _____ TIME _____

LOCATION OF ACCIDENT _____

ACCIDENT INVOLVED: Employees, contractors, visitors, Vehicle vs. Vehicle, Vehicle vs. Property, Vehicle vs. Pedestrian

VEHICLE NO. 1

VEHICLE NO. 2 (or Pedestrian Info.)

_____	DRIVER'S NAME	_____
_____	STREET ADDRESS	_____
_____	CITY AND STATE	_____
_____	DRIVERS LICENSE NO.	_____
_____	PHONE NO. OR EXT.	_____
_____	OWNER'S NAME	_____
_____	STREET ADDRESS	_____
_____	CITY AND STATE	_____
_____	PHONE NUMBER	_____
_____	VEHICLE TYPE	_____
_____	MAKE, MODEL, YEAR	_____
_____	LICENSE PLATE	_____
_____	VEHICLE DAMAGE	_____
_____	PASSENGERS	_____
_____	VEHICLE REMOVED TO (auth.)	_____

INJURED (type, where taken): _____

POLICE DEPARTMENT/REPORT #: _____

WEATHER: _____

ROAD CONDITION: _____

ESTIMATED SPEED OF VEHICLE 1: _____ **VEHICLE 2:** _____

VEHICLE DEFECTS RELATING TO ACCIDENTS (Brakes, Lights, Tires, Steering)

VEHICLE 1: _____ **VEHICLE 2:** _____

STATEMENT DRIVER VEHICLE 1: _____

STATEMENT DRIVER VEHICLE 2: _____

INVESTIGATOR'S COMMENTS: _____

PHOTOGRAPHS TAKEN?: _____

DIAGRAM:

INVESTIGATOR'S SIGNATURE: _____

DATE: _____

SUPERVISOR'S SIGNATURE: _____

DATE: _____

ATTACHMENT F

NOT USED

ATTACHMENT G

RISK REGISTER

Tonawanda Coke Site 108
Risk Register
 2019

PROBABILITY				
SEVERITY	Ca	H	H	M
	Cr	H	M	L
	M	M	M	L
	N	M	L	L
	F	L	O	S

PROBABILITY				
SEVERITY	Ca	H	H	M
	Cr	H	M	L
	M	M	M	L
	N	M	L	L
	F	L	O	S

Activity	HOC Confirmation	Hazard Identification	At Risk	Pre-Risk Mgt Evaluation Matrix			Pre-Risk Mgt Treatment	Risk Management & Control -- Safety & Health		Risk Management & Control -- Environmental			Responsible Person	Cost Contingency	Post-Risk Mgt Evaluation Matrix			Residual Risk Action	PM or Office Manager Approval	Post-Risk Mgt Treatment (Residual Risk)
				Probability	Severity	RAC (Pre-Risk)		Engineering/Administrative Controls	PPE	Waste Management	Engineering/Administrative Controls	Site Condition Controls			Probability	Severity	RAC (Post-Risk)			
General Field Work	Yes	Injuries, Cold Stress Injuries, Biological Hazards,	Site personnel	Likely	Critical	HIGH	Reduce	Activity Hazard Analysis, Procedures	Personal Flotation Device, Leather Work Gloves	Avoidance	Procedures, Regulatory Requirements,	Spill Kit on Site	Field Team Leader	Covered in Budget	Seldom	Critical	MODERATE	NA		Accept
Fish Sampling	Yes	Dropping, Slips/Trips/Falls, Drowning, Cuts/Punctures/Bites/Muscle Strains/Blunt force injury, Carp Fence/Plant Enclosures	Site personnel	Likely	Marginal	MODERATE	Reduce	Activity Hazard Analysis, Procedures	Level D - Modified, Personal Flotation Device, Leather Work Gloves	Avoidance, Disposal	Permits, Procedures, Regulatory Requirements, Training/education, Checklists/audits, Instructions	Spill Kit on Site	Field Team Leader	Covered in Budget	Likely	Marginal	MODERATE	NA		Accept
Sediment and Water Sampling	Yes	Dropping, Slips/Trips/Falls, Drowning, Cuts/Scrapes, Strains, Preservative Burns	Site personnel	Occasional	Marginal	MODERATE	Reduce	Activity Hazard Analysis, Procedures	Level D - Modified, Personal Flotation Device, Work Gloves	Avoidance, Disposal	Permits, Procedures, Regulatory Requirements, Training/education, Checklists/audits, Instructions	Spill Kit on Site	Field Team Leader	Covered in Budget	Seldom	Marginal	LOW	NA		Accept

ATTACHMENT H

LEGAL COMPLIANCE REGISTER

Attachment H
Tonawanda Coke Legal Compliance Registry
Content Revision Date: 4/6/2018

Item #	Description / identity of relevant SH&E risk	Identity / citation of related legal compliance obligation	How does one gain access to the text of this legal compliance obligation?	Remarks
1	General Safety & Health	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.20 US ACE EM 385-1-1 01.A 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
2	Safety Training	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.21 US ACE EM 385-1-1 01.B.01 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
3	First Aid and Medical	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.23 US OSHA 29 CFR 1926.50 US ACE EM 385-1-1 03.A 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
4	Fire Protection and Prevention	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.24 US OSHA 29 CFR 1926.150-155 US OSHA 29 CFR 1926.352 US ACE EM 385-1-1 09.A 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
5	Housekeeping	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.25 US ACE EM 385-1-1 14.C 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
6	Sanitation	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.27 US OSHA 29 CFR 1926.51 US ACE EM 385-1-1 02.A 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
7	Personal Protective Equipment	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.28 US OSHA 29 CFR 1926.95-98 US OSHA 29 CFR 1926.100-107 US ACE EM 385-1-1 05.A 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
8	Emergency Employee Action Plans	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.35 US ACE EM 385-1-1 01.E 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
9	Noise Exposure	<ul style="list-style-type: none"> US OSHA 29 CFR 1910.95 US OSHA 29 CFR 1926.52 US ACE EM 385-1-1 05.C 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
10	Gases, Vapors, Dusts and Mists	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.55 	<ul style="list-style-type: none"> www.osha.gov 	
11	Hazard Communication	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.59 US ACE EM 385-1-1 1.B.06 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
12	Hazardous Waste Operations and Emergency Response	<ul style="list-style-type: none"> US OSHA 29 CFR 1910.120 US OSHA 29 CFR 1926.65 US ACE EM 385-1-1 28.A 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
13	Accident prevention signs and tags	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.200 US ACE EM 385-1-1 08.A 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
14	Signaling	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.201 US ACE EM 385-1-1 08.B 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
15	Barricades	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.202 	<ul style="list-style-type: none"> www.osha.gov 	
16	Material Storage	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.250 US ACE EM 385-1-1 14.B 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
17	Waste Disposal	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.252 US ACE EM 385-1-1 14.D 	<ul style="list-style-type: none"> www.osha.gov www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
18	Tools	<ul style="list-style-type: none"> US OSHA 29 CFR 1926.300-307 	<ul style="list-style-type: none"> www.osha.gov 	

		<ul style="list-style-type: none"> • US ACE EM 385-1-1 13.A 	<ul style="list-style-type: none"> • www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
19	Motor Vehicles, Mechanized Equipment	<ul style="list-style-type: none"> • US OSHA 29 CFR 1926.600-603 • US ACE EM 385-1-1 18.A 	<ul style="list-style-type: none"> • www.osha.gov • www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
20	Site Clearing	<ul style="list-style-type: none"> • US OSHA 29 CFR 1926.604 • US ACE EM 385-1-1 31.A 	<ul style="list-style-type: none"> • www.osha.gov • www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
21	Excavations	<ul style="list-style-type: none"> • US OSHA 29 CFR 1926.650-652 • US ACE EM 385-1-1 25.A 	<ul style="list-style-type: none"> • www.osha.gov • www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
22	Internal Traffic Control	<ul style="list-style-type: none"> • US ACE EM 385-1-1 8.D 	<ul style="list-style-type: none"> • www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
23	Traffic Movement Restriction Times	<ul style="list-style-type: none"> • US ACE EM 385-1-1 8.C 	<ul style="list-style-type: none"> • www.usace.army.mil/SafetyandOccupationalHealth.aspx 	
25	Boating	<ul style="list-style-type: none"> • OSH Act of 1970 SEC. 5. Duties 	<ul style="list-style-type: none"> • www.osha.gov 	

**ATTACHMENT I
TRAINING MATRIX**

Employee Name / Employee Title / Employee Function	Required Compliance / Risk Control / Risk Management Training	Required Licenses / Designations of Authority / Competencies / Qualifications / Certifications	Frequency of Required Refresher Training / Assessment of Continuing Competency
Field Team Leaders/Construction Manager	Basic orientation	ESHARP/PSHEP	On initial assignment, reviewed annually
	First Aid / CPR / AED	Designated provider of first aid / CPR provider	Every 2 years (with bloodborne pathogens training)
	PPE: Hardhats, Gloves, Eye Protection, Safety Boots	ESHARP/PSHEP	On initial assignment; upon changes to PPE use
	Parsons Fleet Driver Training		Training is required when personnel are required to operate a Parsons Owned or Leased vehicle on public roadways
Field Technicians	Basic orientation	ESHARP/PSHEP	On initial assignment, reviewed annually
	PPE: Hardhats, Gloves, Eye Protection, Safety Boots	ESHARP/PSHEP	On initial assignment; upon changes to PPE use
	Parsons Fleet Driver Training		Training is required when personnel are required to operate a Parsons Owned or Leased vehicle on public roadways

Current Training Certificates Database: P:\H&S_18\Training Certificates

APPENDIX B

COMMUNITY AIR MONITORING PLAN

Tonawanda Coke Corporation Site 108 Community Air Monitoring Plan

Site Description and Removal Activities

The subject property is part of the Tonawanda Coke Corporation (TCC) plant. The main plant is located at 3875 River Road in Tonawanda, NY. The subject property, Site 108, is located across the street at 3800 River Road. Site 108 extends from River Road to the Niagara River. The site is unoccupied and located in an industrial area, with the Niagara River to the west; a warehouse and liquid asphalt terminal to the north; River Road, the TCC main plant, and the vacant Tonawanda Plastic facility to the east; and the Erie County water treatment plant to the south. Site 108 includes three aboveground storage tanks. Background information indicates the site was primarily used for main plant shipping and deliveries by way of the Niagara River, including coke, coal, and coal tar (GHD 2017). The three tanks were used for storage of coal tar produced from the coking operations. Site access is restricted with a locked gate on the property boundary along River Road. There is a perimeter containment berm around the three tanks.

Planned activities include the removal of water from the storage tank secondary containment areas, removal of coal tar and water from the storage tanks, demolition of the tanks, removal of surface tar from the berms and secondary containment areas, and site restoration upon completion of the work.

Air Monitoring Objectives and Approach

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

Continuous air monitoring will be conducted for all coal tar waste stabilization, coal tar waste processing, coal tar waste loading, ground intrusive activities, activities related to the tank demolition and any other activities which are anticipated to cause increased particulates in the air. Real-time air monitoring will be conducted for VOCs and particulate levels at the perimeter (upwind and downwind) of the exclusion zone or work area.

Monitoring Activities and Approach

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during active work hours. Continuous upwind monitoring will be conducted along with the downwind monitoring. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. One upwind and one downwind station will be used for this project. The locations will be established based on wind conditions for each day with adjustments as necessary if wind direction

substantially changes during the day. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below. The air monitoring will be conducted using a MiniRAE 3000 (10.6 eV bulb), or equivalent, for total VOCs and a DustTrak2 Desktop Monitor 8530, or equivalent, for monitoring dust. The monitoring equipment will be setup in weather-proof cases with telemetric capabilities for email and text notifications to the construction manager, site superintendent and safety officer. An UltraRAE 3000 (9.8 eV bulb) will also be maintained on site for periodic monitoring of benzene levels. Attachment 1 includes equipment specifications and equipment communications; Attachments 2 and 3 include standard operating procedures (SOPs).

Analytes of Concern

In addition to the coal tar waste stored in the tanks, site background indicates the site has been impacted with coal and coal tar wastes including benzene, toluene, ethylbenzene, total xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAHs). Potential chemicals of concern (COCs) identified for the site include:

- Benzene
- Toluene
- Ethylbenzene
- Xylenes
- Methylene Chloride
- 1,2-Dichloroethene
- 2-Methylnaphthalene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Fluoranthene
- Fluorene
- Naphthalene
- Phenanthrene
- Pyrene
- Dibenzofuran

Air Monitoring Methodology

The VOC monitoring will use real-time monitors capable of measuring total VOCs down to 0 ppm and capable of calculating 15-minute running averages. The dust monitoring will use real-time monitors capable of measuring dust less than 10 micrometers (PM-10) with precision that is consistent

with NYSDEC DER-10 Technical Guidance for Site Investigations and Remediation and capable of integrating PM-10 concentrations over a period of 15 minutes. Equipment will alert technicians immediately if dust exceeds the action level.

Baseline Monitoring

The air monitoring stations will be setup and operated at least one day before remedial operations start to establish ambient levels and used along with the upwind readings to establish background levels.

Real-time Air Monitoring

The air monitoring stations will provide continuous and real-time air monitoring data during active construction activities.

Action Levels

The NYSDOH has established action levels for VOCs at 5 parts per million (ppm) above background above background for the 15-minute average. To provide additional assurance, the equipment will be set at a lower site-specific alert level of 1 ppm above background above background for the 15-minute average. This level is based on the benzene OSHA PEL of 1 ppm. As the correction factor for a PID with 10.6 lamp is 0.53 for benzene, so an alert level of 1.0 would be conservative at almost half the PEL. If the air monitors detect VOC concentrations exceeding the site-specific level, the source of the emissions will be investigated and evaluated. If a reading of 5 ppm above background for the 15-minute average is reached or exceeded, work will be immediately stopped until corrective measures are implemented, and levels drop below the action level. Colorimetric gas detection tubes for benzene will be available and used to facilitate assessment for the presence of benzene related to elevated VOC readings.

The NYSDOH has established action levels for particulates at 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) above background levels. If the action level is exceeded for a 15-minute period, the work will be stopped and additional dust suppression measures (such as increasing the use of water or reducing equipment speeds) will be implemented.

Management Plan

The stations will be operated and maintained by the site Health and Safety Officer. Readings will be recorded and be available for State and federal personnel to review. Instantaneous readings, if any, used for decision purposes shall also be recorded.

As there may be situations when dust is being generated when entering, traversing and leaving the site, monitoring procedures will include visual observations for dust. Regardless of the monitoring data, if dust is observed leaving the working site, additional dust suppression techniques will be employed. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

- Applying water on haul roads;
- Wetting equipment and excavation faces;
- Spraying water on buckets during excavation and dumping;
- Hauling materials in properly tarped or watertight containers;
- Restricting vehicle speeds to 10 mph;

- Covering excavated areas and material after excavation activity ceases; and
- Reducing the excavation size and/or number of excavations.

Weather conditions will also be considered for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended.

Quality Assurance Project Plan

Quality Assurance/Quality Control (QA/QC) will include periodic instrument calibration, operator training, and daily instrument performance (span) checks. QA/QC records will be maintained for the duration of the project. Attachment 1 includes equipment specifications and equipment communications; Attachments 2 and 3 include standard operating procedures (SOPs).

Reporting

CAMP data (e.g., daily averages, confirmed action level exceedances and actions taken, etc.) will be incorporated into the construction report prepared consistent with the requirements set forth in Section 300.165 of the National Contingency Plan (NCP) entitled "On-site Coordinator (OSC) Reports".

ATTACHMENT 1
AIR MONITORING EQUIPMENT

MiniRAE® 3000 +

Portable Handheld VOC Monitor

The MiniRAE 3000 + is a comprehensive handheld VOC (Volatile Organic Compound) monitor that uses a third-generation patented PID technology to accurately measure one of the highest levels of ionizable chemicals available on the market. The MiniRAE 3000 + is a comprehensive handheld VOC (Volatile Organic Compound) monitor that uses a third-generation patented PID technology to accurately measure one of the highest levels of ionizable chemicals available on the market.

It provides full-range measurement from 0 to 15,000 ppm of VOCs. The MiniRAE 3000 + has a built-in wireless modem that allows real-time data connectivity with the command center located up to 2 miles (3 km) away through a Bluetooth connection to a RAELink 3* portable modem or optionally via Mesh Network.



Workers can quickly measure VOCs and wirelessly transmit data

- Highly accurate VOC measurements
- Reflex PID Technology™
- Low maintenance—easy access to lamp and sensor
- Low cost of ownership
- 3-year 10.6eV lamp warranty
- BLE module & dedicated APP for Enhanced Datalogging capability



FEATURES & BENEFITS

- Third-generation patented PID technology
- Reflex PID Technology™
- VOC detection range from 0 to 15,000 ppm
- 3-second response time
- Humidity compensation with built-in humidity and temperature sensors
- Six-month datalogging
- Highly connectivity capability through multiple wireless module options
- Large graphic display with integrated flashlight
- Multi-language support with 10 languages encoded
- IP- 67 waterproof design

APPLICATIONS

- Oil and Gas
- HazMat
- Industrial Safety
- Civil Defense
- Environmental and Indoor Air Quality



Instrument Specifications	
Size	10" L x 3.0" W x 2.5" H (25.5 cm x 7.6 cm x 6.4 cm)
Weight	26 oz (738 g)
Sensors	Photoionization sensor with standard 10.6 eV or optional 9.8 eV or 11.7 eV lamp
Battery	<ul style="list-style-type: none"> Rechargeable, external field-replaceable Lithium-Ion battery pack Alkaline battery adapter
Running time	16 hours of operation (12 hours with alkaline battery adapter)
Display Graphic	4 lines, 28 x 43 mm, with LED backlight for enhanced display readability
Keypad	1 operation and 2 programming keys, 1 flashlight on/off
Direct Readout	Instantaneous reading <ul style="list-style-type: none"> VOCs as ppm by volume (mg/m³) High values STEL and TWA Battery and shutdown voltage Date, time, temperature
Alarms	95dB at 12" (30 cm) buzzer and flashing red LED to indicate exceeded preset limits <ul style="list-style-type: none"> High: 3 beeps and flashes per second Low: 2 beeps and flashes per second STEL and TWA: 1 beep and flash per second Alarms latching with manual override or automatic reset Additional diagnostic alarm and display message for low battery and pump stall
EMC/RFI	Compliant with EMC directive (2004/108/EC) EMI and ESD test: 100MHz to 1GHz 30V/m, no alarm Contact: ±4kV Air: ±8kV, no alarm
IP Rating	<ul style="list-style-type: none"> IP-67 unit off and without flexible probe IP-65 unit running
Datalogging	Standard 6 months at one-minute intervals
Calibration	Two-point or three-point calibration for zero and span. Reflex PID Technology™ Calibration memory for 8 calibration gases, alarm limits, span values and calibration dates
Sampling Pump	<ul style="list-style-type: none"> Internal, integrated flow rate at 500 cc/mn Sample from 100' (30m) horizontally or vertically
Low Flow Alarm	Auto pump shutoff at low-flow condition
Communication & Data Download	<ul style="list-style-type: none"> Download data and upload instrument set-up from PC through charging cradle or using BLE module and dedicated APP Wireless data transmission through built-in RF modem
Wireless Network	Mesh RAE Systems Dedicated Wireless Network
Wireless Range (Typical)	Up to 15ft (5m) for BLE EchoView Host: LOS > 660 ft (200 m) ProRAE Guardian & RAEMesh Reader: LOS > 660 ft (200 m) ProRAE Guardian & RAELink3 Mesh: LOS > 330 ft (100 m)
Safety Certifications	US and Canada: CSA, Classified as Intrinsically Safe for use in Class I, Division 1 Groups A, B, C, D Europe: ATEX II 2G EEx ia IIC T4
Temperature	-4° to 122° F (-20° to 50° C)
Humidity	0% to 95% relative humidity (non-condensing)

For more information

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Instrument Specifications	
Attachments	Durable bright yellow rubber boot
Warranty	3 years for 10.6 eV lamp, 1 year for pump, battery, sensor and instrument
Wireless Frequency	ISM license-free band. IEEE 802.15.4 Sub 1GHz
Wireless Approvals	FCC Part 15, CE R&TTE, Others ¹
Radio Module	Supports BLE or Bluetooth or RM900

¹ Contact RAE Systems for country-specific wireless approvals and certificates. Specifications are subject to change.

Sensor Specifications

Gas Monitor	Range	Resolution	Response Time T90
VOCs	0 to 999.9 ppm 1,000 to 15,000 ppm	0.1 ppm 1 ppm	< 3 s < 3 s

MONITOR ONLY INCLUDES:

- MiniRAE 3000 + Monitor, Model PGM-7320
- Wireless communication module built in, as specified
- Datalogging with ProRAE Studio II Package
- Charging/download adapter
- RAE UV lamp, as specified
- Flex-I-Probe™
- External filter
- Rubber boot
- Alkaline battery adapter
- Lamp-cleaning kit
- Tool kit
- Soft leather case

OPTIONAL CALIBRATION KIT ADDS:

- 100 ppm isobutylene calibration gas, 34L
- Calibration regulator and flow controller

OPTIONAL GUARANTEED COST-OF-OWNERSHIP PROGRAM:

- 4-year repair and replacement warranty
- Annual maintenance service

DUSTTRAK™ Aerosol Monitor

The DUSTTRAK™ Aerosol Monitor measures aerosols in a wide variety of environments, from offices and industrial workplaces to outdoor environmental and construction sites. TSI's DUSTTRAK provides reliable exposure assessment by measuring particle concentrations corresponding to PM10, PM2.5, PM1.0 or respirable size fractions.

The DUSTTRAK is a portable, battery-operated laser photometer which gives you a real-time digital readout with the added benefits of a built-in data logger. Suitable for clean office settings as well as harsh industrial workplaces and outdoor applications, the DUSTTRAK detects potential problems with airborne contaminants such as dust, smokes, fumes and mists.

The DUSTTRAK is easy to use, too. You can perform quick spot checks or you can program the advanced logging modes for long-term sampling. You can program the start/stop times, recording intervals and other parameters. You can even set up the instrument for continuous unattended operation.

The DUSTTRAK's new continuous analog output and adjustable alarm output allow remote access to real-time particle concentration data. Applications include site perimeter monitoring, ambient monitoring, process area monitoring and other remote uses. The alarm output with user-defined setpoint alerts you when upset or changing conditions occur. This feature allows you to program a switch closure at a concentration value of your choosing.

*Now With
Analog and
Alarm
Outputs*



The DUSTTRAK provides a real-time measurement based on 90° light scattering. A pump draws the sample aerosol through an optics chamber where it is measured. A sheath air system isolates the aerosol in the chamber to keep the optics clean for improved reliability and low maintenance.

Specifications

Model 8520 DustTrak Aerosol Monitor

Sensor Type	90° light scattering
Range	0.001 to 100 mg/m ³ (Calibrated to ISO 12103-1, A1 test dust)
Resolution	±0.1% of reading or ±0.001 mg/m ³ , whichever is greater
Zero Stability	±0.001 mg/m ³ over 24 hours using 10-second time-constant
Particle Size Range	0.1 to approximately 10 micrometers
Flow Rate	Adjustable 1.4 to 2.4 l/min (1.7 nominal)
Temperature Coefficient	+0.001 mg/m ³ per °C (for variations from temperature at which the DUSTTRAK was zeroed)
Operating Temperature	32° F to 120° F (0°C to 50°C)
Storage Temperature	-4° F to 140° F (-20°C to 60°C)
Operating Humidity	0 to 95% rh (non-condensing)
Time Constant	Adjustable from 1 to 60 seconds
Data Logging	31,000 data points (21 days of logging once/minute)
Logging Interval	Adjustable from 1 second to 1 hour
Physical	
External Dimensions	8.7 in. x 5.9 in. x 3.4 in. (221 mm x 150 mm x 87 mm)
Instrument Weight	3.3 pounds with batteries (1.5 kg)
Serial Interface	RS-232 1200 baud
Power	
AC	AC adapter (included)
Battery	Four C-size alkaline batteries (included)
Battery Run-time	Alkaline 16 hours
Analog Output Specifications	
Analog Output Voltage	0 to 5 VDC
Analog Output Scaling ¹	0 to 100 mg/m ³ 0 to 10.0 mg/m ³ 0 to 1.00 mg/m ³ 0 to 0.100 mg/m ³
Output Impedance	0.01 ohm
Maximum Output Current	15 mA



The DUSTTRAK comes complete with TSI's TRAKPRO™ Data Analysis Software to allow you to perform a more comprehensive analysis of your measurement results. This exclusive Windows®-based program helps you generate the detailed graphs and reports needed to effectively communicate your findings.

Specifications are subject to change without notice.
Windows is a registered trademark of the Microsoft Corporation.

Alarm Output Specifications

Type	Non-latching MOSFET solid state (polarized) ² analog switch
Setpoint Range ¹	0.010 to 100 mg/m ³
Maximum Voltage	15 VDC
Maximum Current	1 Amp
Deadband	-5% of alarm setpoint
Connector	4-Pin, Mini-DIN connector

¹ User selectable through TRAKPRO™ Data Analysis Software.

² See TSI Application Note ITI - 074 for important wiring information.

Ordering Information

Model	Description
8520	The DUSTTRAK Aerosol Monitor and accessories includes: Auxiliary Analog and Alarm Outputs, Carrying Case, Alkaline Batteries, TRAKPRO™ Data Analysis Software, Filter, Computer Cable, 25-pin to 9-pin Adapter, Operation Service Manual, Calibration Certificate, 10 mm Nylon Dorr-Oliver Cyclone, Inlet Conditioning Kit 1.0 and 2.5 µm, Sampling Extension Tube, Miscellaneous Service Tools and Two-Year Warranty.

Optional Accessories

Model	Description
8520-1	Environmental Enclosure



TSI

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UltraRAE 3000

Portable Handheld Compound-Specific VOC Monitor



The UltraRAE 3000 is the most advanced Compound-Specific Monitor on the market. Its Photoionization Detector's (PID) extended range of 0.05 to 10,000 ppm in VOC mode and 50 ppb to 200 ppm in benzene-specific mode makes it an ideal instrument for applications, from entry pre-screening during refinery and plant maintenance to hazardous material response, marine spill response and refinery down-stream monitoring.

KEY FEATURES

- Proven PID technology
 - 3-second response in VOC mode or 60 seconds in compound-specific mode
 - Extended range up to 10,000 ppm (in VOC mode) with improved linearity
 - Built-in humidity sensor
 - Automatic temperature-controlled sampling time calculation
 - Highly specific readings, combining a 9.8eV UV lamp and RAE-Sep™ benzene tube
- New sampling probe design provides instant tube-breakthrough visibility
- Versatile VOC or Benzene-Specific modes
- Real-time wireless built-in – Bluetooth (and optional RAElink3 portable modem) or Mesh Network support
- Integrated RAE Systems Correction Factors list for more than 200 compounds

Easy to Use

- Large graphic display
- Multi-language support
- Easy access to lamp, sensor and battery in seconds without tools

Low Cost of Ownership

- Inexpensive analysis using low-cost RAE-Sep tubes

Applications

- Confined space entry pre-screening during refinery and plant maintenance
- Hazardous material response
- Marine spill response
- Refinery down-stream monitoring
- Plant overhaul

- Dual detection mode for total benzene exposure assessment: 60-second snapshot or 15-minute STEL measurement
- High sensitivity to benzene (as low as 50 ppb) provides a lower detection range for future benzene exposure limits
- Lower risk of false alarms through advanced speciation method
- Total VOC measurement mode with extended range of 0.05 to 10,000 ppm



Workers can easily and quickly obtain VOC readings anywhere in the facility with the RAE Systems UltraRAE 3000



IECEx

ATEX

UltraRAE3000



Portable Handheld Compound-Specific VOC Monitor

SPECIFICATIONS

Monitor Specifications

Size	10" L x 3.0" W x 2.5" H (25.5 x 7.6 x 6.4 cm)
Weight	26 oz (738 g)
Sensors	Photoionization sensor with standard 9.8 eV or optional 10.6 eV or 11.7 eV lamps
Battery	<ul style="list-style-type: none">• Rechargeable, external field-replaceable lithium-ion battery pack• Alkaline battery adapter
Operating Hours	16 hours of operation
Display Graphic	4 lines, 28 x 43mm
Keypad	1 operation and 2 programming keys, 1 flashlight on/off button
Direct Readout	<ul style="list-style-type: none">• VOCs as ppm by volume• High and low values• STEL and TWA• Battery and shutdown voltage• Date, time, temperature
Alarms	<ul style="list-style-type: none">• 95dB buzzer (at 12"/30 cm) and flashing red LED to indicate exceeded preset limits• High: 3 beeps and flashes per second• Low: 2 beeps and flashes per second• STEL and TWA: 1 beep and flash per second• Alarms latching with manual override or automatic reset• Additional diagnostic alarm and display message for low battery and pump stall
EMC/RFI	Compliant with EMC directive (2004/108/EC) EMI and ESD test: 100MHz to 1GHz 30V/m, no alarm Contact: ±4kV Air: ±8kV, no alarm
IP Rating	IP-65, unit running
Datalogging	Standard 6 months at one-minute intervals
Calibration	2-point or 3-point calibration for zero and span. Calibration memory for 8 calibration gases, alarm limits, span values and calibration dates
Sampling Pump	<ul style="list-style-type: none">• Internal, integrated flow rate at 400 cc/min• Sample from 100' (30m) horizontally and vertically
Low Flow Alarm	Auto shut-off pump at low-flow condition
Communication & Data Download	<ul style="list-style-type: none">• Download data and upload instrument set-up from PC through charging cradle or optional Bluetooth™• Wireless data transmission through built-in RF modem
Wireless Network	Mesh RAE Systems Dedicated Wireless Network
Wireless Range (Typical)	EchoView Host: LOS > 660 ft (200 m) ProRAE Guardian & RAEMesh Reader: LOS > 660 ft (200 m) ProRAE Guardian & RAELink3 Mesh: LOS > 330 ft (100 m)
Safety Certifications	<ul style="list-style-type: none">• US and Canada: Classified as Intrinsically Safe for use in Class I, Division 1 Groups A, B, C, D.• Europe: ATEX II 2G EEx ia IIC T4• IECEx CSA 10.0005 Ex ia IIC/IIB GbT4
Operating Temperature	-4° to 122° F (-20° to 50° C)
Humidity	0% to 95% relative humidity (non-condensing)
Attachments	Durable bright red rubber boot
Warranty	3 years for 10.6 eV lamp, 1 year for 9.8. eV lamp, pump, battery, sensor and instrument
Wireless Frequency	ISM license-free band. IEEE 802.15.4 Sub 1GHz
Wireless Approvals	FCC Part 15, CE R&TTE, Others ¹
Radio Module	Supports Bluetooth or RM900

¹ Contact RAE Systems for country-specific wireless approvals and certificates. Specifications are subject to change

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Sensor Specifications

Gas Monitor	Range	Resolution	Response Time (T90)
VOCs	0 to 99.99 ppm	0.025 ppm	< 3 sec
	100 to 999.9 ppm	0.1 ppm	< 3 sec
	1000 to 9999 ppm	1 ppm	< 3 sec
Benzene	0 to 200 ppm	0.025 ppm	< 60 sec
Butadiene	0 to 200 ppm	0.025 ppm	< 60 sec

ULTRARAE 3000 ORDERING OPTIONS

Monitor Only Includes

- UltraRAE 3000 Monitor, Model PGM-7360
- Wireless communication module built-in
- Datalogging with ProRAE Studio II Package for Windows® XP, Windows® Vista, or Windows® 7
- Travel Charger
- RAE UV lamp and RAE-Sep™ Tubes
- Flex-I-Probe™ and short probe
- External filter
- Red rubber boot
- Alkaline battery adapter
- Lamp-cleaning kit
- Tool kit
- Lithium-ion (Li-Ion) battery with universal AC/DC charger and international plug kit
- Operation CD-ROM
- Operation & Maintenance manual
- Soft leather carrying case

Monitor with Accessories Kit

- Hard transport case with pre-cut foam padding
- Charging/download cradle
- 5 porous metal filters and O-rings
- Organic vapor zeroing kit
- Gas outlet port adapter and tubing

Optional Calibration Kit

- Calibration gas, 34L, as specified
- Calibration regulator and flow controller

Optional Guaranteed Cost of Ownership Program

- 4-year repair and replacement guarantee
- Annual maintenance service

Ordering Information

Monitor with Accessories and Calibration Kit (PN 059-D311-200)



Configuring the System and Environet Guides

The modem(s) you received have been pretested by the Telemetry Technician Team (T³) at Pine and only require configuration for new client accounts or projects. If you need assistance, the team can assist you with creating a new corporate account, troubleshooting issues, and walking you through any confusing steps in the process of utilizing your equipment. The environet.IO website also contains in depth guides for making full use of the software and a chat window to speak directly with a Netronix Programmer if you are ever in need of assistance. Once logged in, simply click on the blue circle located in the bottom right corner of your screen and search for the topic you would like to learn more about or start a chat conversation with a technician.

Starting Up the System

1. Apply power to the Thiamis 1000 and instrument(s) using a junction box and an external battery or AC power adapter. Allow the modem to come online before connecting any equipment.
2. Once power is applied, the modem should begin transmitting data within 15 minutes.
 - A flashing blue light indicates the modem is searching for signal.
 - After a few moments, the light will turn solid blue. Once the light stays solid blue, the modem has connected to environet.io
 - If at any time the light turns solid orange, remove the modem from power and wait 120 seconds before reconnecting power. Repeat until the unit finds signal.
 - If the white light reappears at any time and remains permanently, please contact Pine to obtain a replacement modem
3. Connect all tubing to associated unit(s). Turn on the DustTrak first, but **DO NOT** connect the USB cable to the DustTrak. Once the DustTrak is on the main screen, plug the USB cable into the DustTrak. After 3-5 minutes, the modem will start the DustTrak automatically.
4. Once the DustTrak is sampling, connect the RAE and turn it on. It should begin reporting within a minute.





Shutting Down the System

1. Follow the shutdown procedures for all the instruments to end the sample run.
2. Remove the source of power (battery, AC adapter) from the junction box.
3. You may disconnect your instruments at this point and shut them down.

Trouble Shooting the System

Troubleshooting the Modem

Remove the power plug directly from the modem. Wait 120 seconds and reconnect the power. If after repeated attempts the modem does not connect to Environet, please call your local office or the Telemetry Department at 609-371-9663 (extensions 01133 and 01135)

DustTrak Soft Reset

1. Stop the DustTrak's run and **remove the USB and Power cables** from the instrument.
2. Open the back of the DustTrak and **remove its internal batteries**.
3. With the internal batteries removed, hold the **Power Button** for **40 seconds**.
4. **Return the internal batteries** to their compartment.
5. **Plug in Power cable first**. Once the main screen has loaded completely, **plug in the USB cable**.
6. **Give modem 15 minutes** to report "**Comm Status: OK**" or "**Comm Status: Timeout Error**".

MiniRAE 3000 Checks

1. Check that the MiniRAE's **travel charger is lit with a green [sometimes red] LED light**. The power cable **must** be connected the charger for the MiniRAE 3000 to report data.
2. If the travel charger light is on but the MiniRAE is still not reporting, **check that it is set P2P (Cable)** via the following procedure.
 - Hold the **Mode (center) and N /- keys**. This will take you into the RAE's setup menus.
 - Use the **NO/-** key to move to the rightmost option, **Monitor Setup**. Enter Monitor Setup using the **YES/+** button.
 - Press the **NO/-** button and scroll down these settings until you reach **Real Time Protocol**. Highlight this and hit the **YES/+** key.
 - For the RAE to be able to report, make sure the instrument is set to the **P2P (Cable)** option. Highlight **P2P** and hit **YES/+** to select it. Then press the center, **Mode** button to save these settings.
 - **Return to the main run screen.**

Call Pine's Telemetry Department with any further questions or concerns..... +1(609)-371-9663

Matthew Manion, Senior Telemetry Technician: Ex 01133

Anthony W. Borkowski, Telemetry Technician: Ex 01135

ATTACHMENT 2

DUSTTRAK SOP

STANDARD OPERATING PROCEDURE: TONAWANDA COKE TANK DEMOLITION TSI DUSTTRAK MONITOR

A. SCOPE

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures for using the DustTrak™ II Aerosol Monitor. The DustTrak™ II Aerosol Monitor is a battery-operated, data-logging, light-scattering laser photometers that monitors and records real-time aerosol mass readings. The unit is equipped with alarm options and will be used along with the DustTrak Environmental Enclosure system.

The DustTrak II will be used, along with the MiniRAE, as part of the Community Air Monitoring to continuously monitor ambient air at fixed upwind and downwind of construction operations. Locations for each day will be based on meteorological conditions for that day. Data will be recorded and transmitted by way of a cellular connection.

The procedures in this SOP may be varied or changed as required, depending on site conditions, equipment limitations or other procedural limitations. In all instances, the procedures employed must be documented. The User Manual will be included with the equipment for detailed operational instructions and will be reviewed prior to equipment use. The User Manual can be found at the following location:

- https://www.tsi.com/getmedia/7c608b93-b6d1-459a-a6a8-2b0e2a55ba91/8530-8531-8532-DustTrak_II-6001893-web?ext=.pdf

Used in conjunction with the environmental enclosure case, the unit is a rugged, weather-resistant, portable and battery-operated monitor. Key features include:

- Aerosol Concentration range 0.001 to 150 mg/m³
- Automatic zeroing to minimize the effect of zero drift
- Measure aerosol concentrations corresponding to PM₁ PM_{2.5} PM₁₀ or respirable size fractions
- STEL alarm setpoint for tracking 15-minute average mass concentrations

B. HEALTH AND SAFETY CONSIDERATIONS

The DustTrak II monitor is a Class I laser-based instrument. No exposure to laser radiation will occur during normal operation. Precaution should be taken to avoid exposure to hazardous radiation in the form of intense, focused, visible light. This would include not removing any parts from the unit unless indicated in the operations manual and do not remove the housing or covers. There are no serviceable components inside the housing.

C. EQUIPMENT LIST

The equipment list included in User Manual contains materials that may be needed to carry out the procedures contained in this SOP. Since multiple procedures or alternate methods may be employed to achieve the objectives, not all materials and equipment included on the list may be necessary to complete the task.

D. EQUIPMENT OPERATION

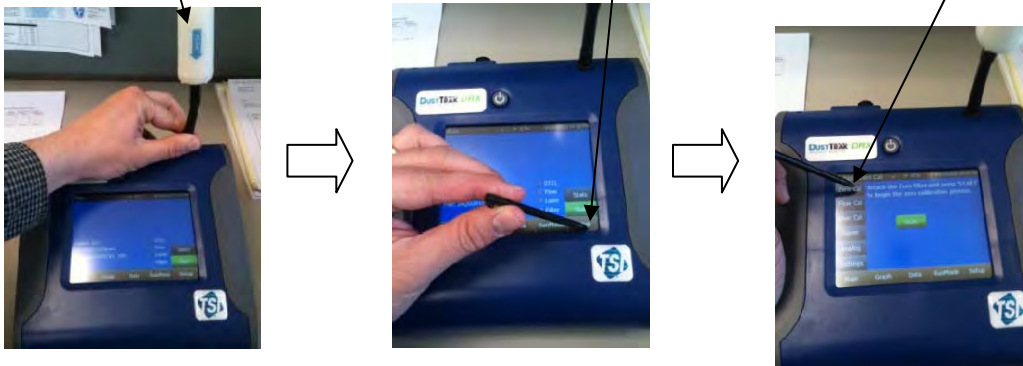
1. Ensure battery is fully charged prior to use
2. Select sampling site. The sampler should be placed in an out in the open location away from obstructions. Assess wind conditions and locate one unit upwind of site work and one downwind of

site work. Adjust locations as necessary during the work day.

3. Mount the Environmental Enclosure.
4. Set up environmental enclosure components
 - a. Install the battery pack.
 - b. Install in the inlet ring on top of the enclosure
 - c. Install water trap bottle in the inner inlet ring
 - d. Install PM10 impactor, barbed inlet fitting, and tubing.
5. Remove monitor from case and install in the enclosure.
6. Zero the DustTrak
 - a. Turn it on and remove then inlet cap, store the inlet cap in the accessory bag.



- b. Attach the Zero filter, using the Stylus press the Setup button, then select Zero Cal.



- c. Select Start to begin the Zero Cal. When complete, disconnect the zero filter



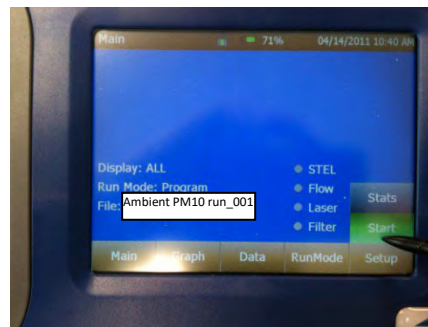
7. Attach the tubing to the inlet and select Main.



8. Select RunMode, then from the drop-down menu, select the Ambient PM10 run; set to log at 1 minute intervals

9. Select the Main button,

then Select the Start button



10. During daily check of instrument functions, and after the sampling event is over, verify that no error codes have appeared on the screen.



11. Select the Stats button



12. Record the MIN, MAX, and AVG on the field data sheet.

D. DOCUMENTATION

During the implementation of the CAMP, the following information will be recorded and maintained:

- Climatological conditions including temperature, wind direction, and other atmospheric conditions along with the date and time of observations, and station location.
- Calibration.
- All particulate readings.
- Monitoring station locations.
- Any exceedances to the response levels and the respective corrective actions.

Rev	Date	Name
0	8/16/19	Tom Abrams

ATTACHMENT 3
MINIRAE 3000 SOP

STANDARD OPERATING PROCEDURE: TONAWANDA COKE TANK DEMOLITION ULTRARAE AND MINIRAE 3000 MONITOR

A. SCOPE

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures for using the MiniRAE 3000 Monitor. The unit is a programmable compound-specific photoionization detector (PID) monitor designed to provide instantaneous exposure monitoring of a specific organic gas; current manufacturer's options include benzene or butadiene. The unit will be used to monitor total volatile organic compounds (VOCs) as a broadband monitor using a 10.6 eV lamp. An UltraRAE 3000 will also be maintained onsite for periodic benzene-specific checks.

The MiniRAE will be used, along with the DustTrak II, as part of the Community Air Monitoring to continuously monitor ambient air at fixed upwind and downwind of construction operations. Locations for each day will be based on meteorological conditions for that day. Data will be recorded and transmitted by way of a cellular connection. The UltraRAE will be used as a hand-held device to manually check benzene levels against MiniRAE readings.

The procedures in this SOP may be varied or changed as required, depending on site conditions, equipment limitations or other procedural limitations. In all instances, the procedures employed must be documented. The User Manual will be included with the equipment for detailed operational instructions and will be reviewed prior to equipment use. User manuals can be found at the following locations:

- MiniRAE - https://www.raesystems.com/sites/default/files/content/resources/Manual_MINIRAE3000_USERGUIDE.pdf
- UltraRAE - https://www.raesystems.com/sites/default/files/content/resources/Manual_UltraRAE3000_UserGuide_RevF.pdf

A PID uses an ultraviolet (UV) light source (photo light) to break down chemicals to positive and negative ions (ionization) that can be counted with a detector. Ionization occurs when a molecule absorbs the high-energy UV light, which excites the molecule and results in the temporary loss of a negatively charged electron and the formation of positively charged ion. Once the gas becomes electrically charged in the PID, the charged particles produce a current that is amplified and displayed as a concentration of parts per million (ppm) or parts per billion (ppb). The ions subsequently recombine after passing the electrodes in the detector and re-form their original molecule.

Used in conjunction with an environmental enclosure case, the unit is a rugged, weather-resistant, portable and battery-operated monitor. Key features include:

- Range of 0.1 ppm to 15,000 ppm range with 10.6 eV lamp.
- Two-point or three-point calibration for zero and span
- 10 to 2000 ppm: 3% at calibration point
- STEL alarm setpoint for tracking 15-minute average mass concentrations
- Equipped with a wireless radio frequency (RF) modem that allows the unit to communicate and transmit readings and other information on a real-time basis with a remotely located base controller using RAE Systems software.

- The handheld UltraRAE uses Draeger tubes and provides digital readouts with a range of 50 ppb to 200 ppm (resolution of 0.05 ppm; response).

B. HEALTH AND SAFETY CONSIDERATIONS

Care should be taken handling the calibration gas cylinders and special handling procedures may apply for transport.

The PID is a non-specific total vapor detector. The PID cannot distinguish one ionizable gas from another. If there is more than one compound present, the PID will not give an accurate reading of a specific gas; the reading will be an approximate reading of the total gas concentration. The unit does not respond to certain low molecular weight hydrocarbons, such as methane and ethane. If the ionization energy of a compound is higher than that of the UV lamp, it cannot be measured by the PID.

When using the UltraRAE, make sure to wear hand and eye protection when breaking tube tips. Use caution in handling tubes with broken ends.

C. EQUIPMENT LIST

The equipment list included in the Operations Manual contains materials that may be needed to carry out the procedures contained in this SOP. Since multiple procedures or alternate methods may be employed to achieve the objectives, not all materials and equipment included on the list may be necessary to complete the task. The basic equipment includes:

- MiniRAE 3000
 - An AC Adapter (Battery Charger)
 - Alkaline battery adapter
 - External Filter
 - Organic Vapor Zeroing kit
 - Zero gas canister
 - Calibration adapter
 - Calibration regulator and flow controller
 - Operating manual
 - Spare alkaline battery pack
 - Teflon tubing
 - "T" valve for calibration
 - Tygon tubing with metal adapter
 - Lamp cleaning kit
- UltraRAE 3000
 - An AC Adapter (Battery Charger)
 - Alkaline battery adapter
 - Benzene detector tubes.
 - Operating manual

- Spare alkaline battery pack
- Lamp cleaning kit

D. GENERAL EQUIPMENT OPERATION

MiniRAE

1. Ensure battery is fully charged prior to use
2. Select sampling site. The sampler should be placed in an out in the open location away from obstructions. Assess wind conditions and locate one unit upwind of site work and one downwind of site work. Adjust locations as necessary during the work day.
3. Mount the environmental enclosure.
4. Install the PID inside the enclosure
5. The instrument is pre-programmed to operate in User Mode: Basic and Operational Mode: Hygiene as its default setting. This gives you the most commonly needed features while requiring the fewest parameter adjustments.
6. The Programming Mode is used to access the following menus:
 - a. Calibration
 - b. Measurement
 - c. Alarm Settings
 - d. Datalog
 - e. Monitor Setup
7. Conduct two-point calibration; zero point and span gas calibrations as per the User's Guide.
8. Confirm datalogger is on. Type allows you to select how and when data will be logged, Auto, Manual, or Snapshot. Auto logs data whenever unit is operating and should be used.
9. The unit is factory calibrated and set with default alarm settings. Set Low to 1 ppm, High at 5 ppm and STEL at 5 ppm.
10. For the alarm notifications the instrument default is both on, and the Buzzer and red flashing LED will activate immediately to notify you of an alarm condition.
11. During daily check of instrument functions, and after the sampling event is over, verify that no error codes have appeared on the screen.

UltraRAE

1. Ensure battery is fully charged prior to use
2. Before performing a compound-specific measurement for Benzene or Butadiene using a RAE-Sep separation tube, make sure the UltraRAE 3000 is in Tube Mode and that the appropriate tube type is selected. The UltraRAE 3000 only acts as a compound-specific measurement device when it is equipped with a 9.8eV lamp. The UltraRAE 3000 is designed to auto-sense the lamp type. It can also be manually set to default to a 9.8eV lamp type. Make sure the UltraRAE 3000 is set to operate with your selected tube:
 - a. Enter Programming Mode.

- b. Select Measurement.
 - c. Select Tube Selection.
 - d. Make a choice of Benzene or Butadiene.
 - e. Save your choice.
3. To begin measuring, turn on the UltraRAE 3000. This screen is shown, which includes the CF (correction factor) and measurement gas type for calibration reference:
 - a. Press [N/-] to advance. You will see this screen:
 - b. Do not begin sampling yet!
4. Before you start sampling, you must insert a RAE-Sep separation tube into the inlet/holder. Follow step 5 below before pressing any buttons on the UltraRAE 3000. Once the tube is in place, then proceed to measuring.
5. Install the separation tube
 - a. Unscrew the front of the sampling probe from the base.
 - b. Slip the tube into the rubber holder in the front portion. Make sure the arrow on the side of the tube points toward the instrument.
 - c. Insert the other end of the tube into the middle of the base while turning the front portion to tighten it onto the base's threads.
6. Measuring
 - a. Once the tube is in place, begin measuring by pressing [Y/+].
 - b. The display shows a countdown (60 seconds is shown here, but sampling time depends on the type of separation tube selected and the temperature).
 - c. Press [Y/+] to continue sampling with the tube for 15 minutes to establish a STEL reading, or press [N/-] to return to the main menu.

E. DOCUMENTATION

During the implementation of the CAMP, the following information will be recorded and maintained:

- Climatological conditions including temperature, wind direction, and other atmospheric conditions along with the date and time of observations, and station location.
- Calibration.
- All total VOC readings (MiniRAE).
- Monitoring station locations.
- Any exceedances to the response levels and the respective corrective actions.

Manual benzene readings using the UltraRAE will be documented along with location, covered activity and reason for taking the reading.

Rev	Date	Name
0	8/16/19	Tom Abrams

APPENDIX C

WATER AND COAL TAR LABORATORY RESULTS

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-151896-1
Client Project/Site: Honeywell - Tonawanda
Revision: 2

For:
Parsons Corporation
40 LaRiviere Drive
Suite 350
Buffalo, New York 14202

Attn: Robert B Piurek



Authorized for release by:
6/19/2019 10:39:42 AM

John Schove, Project Manager II
(716)504-9838
john.schove@testamericainc.com

LINKS

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results through
TotalAccess

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
♠	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

Eurofins TestAmerica, Buffalo

Definitions/Glossary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Glossary (Continued)

Abbreviation **These commonly used abbreviations may or may not be present in this report.**

TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

1

2

3

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Case Narrative

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Job ID: 480-151896-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-151896-1

Revision

This report has been revised to include percent solids for the solid samples.

Revision II

This report has been revised to include Xylenes.

Comments

No additional comments.

Receipt

The samples were received on 4/12/2019 3:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

TCLP analysis was requested on samples TANK 1-04112019 and TANK 3-04112019 but due to the matrix of these sample TCLP analysis was unable to be performed. Totals analysis was run instead.

GC/MS VOA

Method(s) 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: TANK 2-04112019 (480-151896-3). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method(s) 8260C: The following samples were analyzed using medium level soil analysis and diluted due to the abundance of non-target analytes: TANK 1-04112019 (480-151896-4) and TANK 3-04112019 (480-151896-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method(s) 8270D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 480-468844 and analytical batch 480-469125 recovered outside control limits for the following analytes: 2,2'-oxybis[1-chloropropane] 4,6-Dinitro-2-methylphenol and, 2-Nitroaniline. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8270D: The following samples were diluted to bring the concentration of target analytes within the calibration range: TANK 1-04112019 (480-151896-4) and TANK 3-04112019 (480-151896-5). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: The continuing calibration verification (CCV) associated with batch 480-469125 recovered above the upper control limit for 2,2'-oxybis[1-chloropropane]. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: TANK 1-04112019 (480-151896-4) and TANK 3-04112019 (480-151896-5).

Method(s) 8270D: The following sample was diluted due to abundance of target analytes: TANK 1-04112019 (480-151896-4). As such, surrogate recoveries are below the calibration range or are not reported, and elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method(s) 8081B: For method 8081, the recovery of the one surrogate in samples (MB 480-468846/1-A) exceeds quality control limits. The recovery of the secondary surrogate is within quality control criteria; no corrective action is required.

Method(s) 8081B: The following samples were diluted due to the nature of the sample matrix: TANK 1-04112019 (480-151896-4) and TANK 3-04112019 (480-151896-5). As such, surrogate recoveries are below the calibration range, estimated and not representative. Elevated reporting limits (RLs) are provided.

Case Narrative

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Job ID: 480-151896-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

Method(s) 8082A: The following samples are associated with method blank associated with batch preparation batch 480-469296 and analytical batch 480-469795 that had recoveries for the surrogate Tetrachloro-m-xylene that were below acceptance limits. The secondary surrogate Decachlorobiphenyl was within limits. Therefore, the data has been reported. The following samples are impacted: TANK 1-04112019 (480-151896-4) and TANK 3-04112019 (480-151896-5).

Method(s) 8082A: The following sample was diluted due to the nature of the sample matrix: TANK 3-04112019 (480-151896-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method(s) 6010C: The Low Level Continuing Calibration Verification, (CCVL 480-470005/28) associated with batch 480-470005, contained Total Sodium above the upper quality control limit. The associated samples were either below the reporting limit (RL) for the affected analyte or contained this analyte at a concentration greater than 10X the value found in the CCVL; therefore, re-analysis of samples TANK 3-04112019 (480-151896-5) was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method(s) 335.4: Reanalysis of the following sample was performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis. TANK 2-04112019 (480-151896-3) Both sets of data are included in this report.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method(s) 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 480-467891.

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 480-468299.

Method(s) 3580A: The following samples required a Florisil clean-up, via EPA Method 3620C, to reduce matrix interferences: TANK 1-04112019 (480-151896-4) and TANK 3-04112019 (480-151896-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 2-04112019

Lab Sample ID: 480-151896-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.8	J	5.0	0.60	ug/L	1		624.1	Total/NA
Toluene	1.6	J	5.0	0.45	ug/L	1		624.1	Total/NA
2,4-Dimethylphenol	1.8	J	4.8	1.3	ug/L	1		625.1	Total/NA
Fluoranthene	1.7	J	4.8	1.5	ug/L	1		625.1	Total/NA
Fluorene	1.0	J	4.8	0.95	ug/L	1		625.1	Total/NA
Phenol	13		4.8	0.33	ug/L	1		625.1	Total/NA
Nickel	0.0014	J	0.010	0.0013	mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.0024	J	0.010	0.0015	mg/L	1		200.7 Rev 4.4	Total/NA
Cyanide, Total	0.0080	J*	0.010	0.0050	mg/L	1		335.4	Total/NA
Cyanide, Total	0.011	H	0.010	0.0050	mg/L	1		335.4	Total/NA

Client Sample ID: TANK 1-04112019

Lab Sample ID: 480-151896-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	120000		10000	1900	ug/Kg	100		8260C	Total/NA
m,p-Xylene	33000		20000	5500	ug/Kg	100		8260C	Total/NA
o-Xylene	7600	J	10000	1300	ug/Kg	100		8260C	Total/NA
Styrene	7800	J	10000	2400	ug/Kg	100		8260C	Total/NA
Toluene	64000		10000	2700	ug/Kg	100		8260C	Total/NA
2-Methylphenol	250000	J	360000	43000	ug/Kg	10		8270D	Total/NA
3-Methylphenol	900000		710000	56000	ug/Kg	10		8270D	Total/NA
4-Methylphenol	900000		710000	43000	ug/Kg	10		8270D	Total/NA
Fluorene	7600000		360000	43000	ug/Kg	10		8270D	Total/NA
Dibenzofuran	4400000		360000	43000	ug/Kg	10		8270D	Total/NA
Acenaphthylene	3500000		360000	47000	ug/Kg	10		8270D	Total/NA
Benzo[g,h,i]perylene	4100000		360000	39000	ug/Kg	10		8270D	Total/NA
Benzo[k]fluoranthene	3500000		360000	47000	ug/Kg	10		8270D	Total/NA
Benzo[a]pyrene	6000000		360000	54000	ug/Kg	10		8270D	Total/NA
Anthracene	3900000		360000	90000	ug/Kg	10		8270D	Total/NA
2-Methylnaphthalene	4700000		360000	73000	ug/Kg	10		8270D	Total/NA
Dibenz(a,h)anthracene	1200000		360000	64000	ug/Kg	10		8270D	Total/NA
Carbazole	3600000		360000	43000	ug/Kg	10		8270D	Total/NA
Benzo[a]anthracene	6900000		360000	36000	ug/Kg	10		8270D	Total/NA
Indeno[1,2,3-cd]pyrene	3800000		360000	45000	ug/Kg	10		8270D	Total/NA
Chrysene	8000000		360000	81000	ug/Kg	10		8270D	Total/NA
Acenaphthene	870000		360000	54000	ug/Kg	10		8270D	Total/NA
Benzo[b]fluoranthene	8000000		360000	58000	ug/Kg	10		8270D	Total/NA
Biphenyl	1100000		360000	54000	ug/Kg	10		8270D	Total/NA
Phenol	950000		360000	56000	ug/Kg	10		8270D	Total/NA
Phenanthrene - DL	26000000		7300000	1100000	ug/Kg	200		8270D	Total/NA
Pyrene - DL	14000000		7300000	860000	ug/Kg	200		8270D	Total/NA
Naphthalene - DL	49000000		7300000	940000	ug/Kg	200		8270D	Total/NA
Fluoranthene - DL	17000000		7300000	770000	ug/Kg	200		8270D	Total/NA
Arsenic	4.2		2.1	0.42	mg/Kg	1		6010C	Total/NA
Barium	6.4		0.52	0.11	mg/Kg	1		6010C	Total/NA
Cadmium	2.3		0.21	0.031	mg/Kg	1		6010C	Total/NA
Chromium	1.6	B	0.52	0.21	mg/Kg	1		6010C	Total/NA
Lead	73.5		1.0	0.25	mg/Kg	1		6010C	Total/NA
Selenium	2.7	J	4.2	0.42	mg/Kg	1		6010C	Total/NA
Sodium	184		145	13.5	mg/Kg	1		6010C	Total/NA
Potassium	81.8		31.2	20.8	mg/Kg	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Detection Summary

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 1-04112019 (Continued)

Lab Sample ID: 480-151896-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Beryllium	0.063	J	0.21	0.029	mg/Kg	1		6010C	Total/NA
Thallium	4.1	J	6.2	0.31	mg/Kg	1		6010C	Total/NA
Calcium	377	B	52.0	3.4	mg/Kg	1		6010C	Total/NA
Iron	2530		10.4	3.6	mg/Kg	1		6010C	Total/NA
Nickel	1.4	J	5.2	0.24	mg/Kg	1		6010C	Total/NA
Vanadium	1.4		0.52	0.11	mg/Kg	1		6010C	Total/NA
Magnesium	99.0	B	20.8	0.96	mg/Kg	1		6010C	Total/NA
Copper	3.0		1.0	0.22	mg/Kg	1		6010C	Total/NA
Aluminum	637		10.4	4.6	mg/Kg	1		6010C	Total/NA
Zinc	106		2.1	0.67	mg/Kg	1		6010C	Total/NA
Manganese	9.4	B	0.21	0.033	mg/Kg	1		6010C	Total/NA
Cobalt	0.48	J	0.52	0.052	mg/Kg	1		6010C	Total/NA
Mercury	0.14		0.020	0.0083	mg/Kg	1		7471B	Total/NA
Flashpoint	>176		50.0	50.0	Degrees F	1		1010A	Total/NA
pH	7.7	HF	0.1	0.1	SU	1		9045D	Total/NA
Temperature	21.1	HF	0.001	0.001	Degrees C	1		9045D	Total/NA
Total Halogens	1130		100	22.0	ug/g	1		9076	Total/NA

Client Sample ID: TANK 3-04112019

Lab Sample ID: 480-151896-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	12000		5000	950	ug/Kg	50		8260C	Total/NA
m,p-Xylene	3200	J	10000	2800	ug/Kg	50		8260C	Total/NA
o-Xylene	1000	J	5000	650	ug/Kg	50		8260C	Total/NA
Styrene	1600	J	5000	1200	ug/Kg	50		8260C	Total/NA
Toluene	6200		5000	1300	ug/Kg	50		8260C	Total/NA
3-Methylphenol	220000	J	1700000	130000	ug/Kg	20		8270D	Total/NA
4-Methylphenol	220000	J	1700000	100000	ug/Kg	20		8270D	Total/NA
Fluorene	1800000		850000	100000	ug/Kg	20		8270D	Total/NA
Dibenzofuran	1100000		850000	100000	ug/Kg	20		8270D	Total/NA
Acenaphthylene	1000000		850000	110000	ug/Kg	20		8270D	Total/NA
Benzo[g,h,i]perylene	620000	J	850000	90000	ug/Kg	20		8270D	Total/NA
Phenanthrene	6600000		850000	130000	ug/Kg	20		8270D	Total/NA
Benzo[k]fluoranthene	710000	J	850000	110000	ug/Kg	20		8270D	Total/NA
Benzo[a]pyrene	1000000		850000	130000	ug/Kg	20		8270D	Total/NA
Anthracene	1500000		850000	210000	ug/Kg	20		8270D	Total/NA
2-Methylnaphthalene	700000	J	850000	170000	ug/Kg	20		8270D	Total/NA
Pyrene	2800000		850000	100000	ug/Kg	20		8270D	Total/NA
Naphthalene	5600000		850000	110000	ug/Kg	20		8270D	Total/NA
Fluoranthene	3500000		850000	90000	ug/Kg	20		8270D	Total/NA
Carbazole	1000000		850000	100000	ug/Kg	20		8270D	Total/NA
Benzo[a]anthracene	1300000		850000	85000	ug/Kg	20		8270D	Total/NA
Indeno[1,2,3-cd]pyrene	570000	J	850000	110000	ug/Kg	20		8270D	Total/NA
Chrysene	1200000		850000	190000	ug/Kg	20		8270D	Total/NA
Acenaphthene	190000	J	850000	130000	ug/Kg	20		8270D	Total/NA
Benzo[b]fluoranthene	1100000		850000	140000	ug/Kg	20		8270D	Total/NA
Biphenyl	240000	J	850000	130000	ug/Kg	20		8270D	Total/NA
Chromium	0.49	J B	0.51	0.21	mg/Kg	1		6010C	Total/NA
Sodium	47.4	J B ^	144	13.3	mg/Kg	1		6010C	Total/NA
Calcium	15.7	J B	51.3	3.4	mg/Kg	1		6010C	Total/NA
Iron	15.0		10.3	3.6	mg/Kg	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Detection Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 3-04112019 (Continued)

Lab Sample ID: 480-151896-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	5.1		5.1	0.24	mg/Kg	1		6010C	Total/NA
Vanadium	29.8		0.51	0.11	mg/Kg	1		6010C	Total/NA
Magnesium	2.8	J B	20.5	0.95	mg/Kg	1		6010C	Total/NA
Copper	0.34	J	1.0	0.22	mg/Kg	1		6010C	Total/NA
Aluminum	4.9	J	10.3	4.5	mg/Kg	1		6010C	Total/NA
Manganese	0.14	J B	0.21	0.033	mg/Kg	1		6010C	Total/NA
Flashpoint	>176		50.0	50.0	Degrees F	1		1010A	Total/NA
pH	6.1	HF	0.1	0.1	SU	1		9045D	Total/NA
Temperature	21.4	HF	0.001	0.001	Degrees C	1		9045D	Total/NA
Total Halogens	86.0	J	100	22.0	ug/g	1		9076	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 2-04112019

Lab Sample ID: 480-151896-3

Date Collected: 04/11/19 11:00

Matrix: Water

Date Received: 04/12/19 15:50

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.0	U	5.0	0.39	ug/L			04/15/19 15:26	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.26	ug/L			04/15/19 15:26	1
1,1,2-Trichloroethane	5.0	U	5.0	0.48	ug/L			04/15/19 15:26	1
1,1-Dichloroethane	5.0	U	5.0	0.59	ug/L			04/15/19 15:26	1
1,1-Dichloroethene	5.0	U	5.0	0.85	ug/L			04/15/19 15:26	1
1,2-Dichlorobenzene	5.0	U	5.0	0.44	ug/L			04/15/19 15:26	1
1,2-Dichloroethane	5.0	U	5.0	0.60	ug/L			04/15/19 15:26	1
1,2-Dichloroethene, Total	10	U	10	3.2	ug/L			04/15/19 15:26	1
1,2-Dichloropropane	5.0	U	5.0	0.61	ug/L			04/15/19 15:26	1
1,3-Dichlorobenzene	5.0	U	5.0	0.54	ug/L			04/15/19 15:26	1
1,4-Dichlorobenzene	5.0	U	5.0	0.51	ug/L			04/15/19 15:26	1
2-Chloroethyl vinyl ether	25	U	25	1.9	ug/L			04/15/19 15:26	1
Acrolein	100	U	100	17	ug/L			04/15/19 15:26	1
Acrylonitrile	50	U	50	1.9	ug/L			04/15/19 15:26	1
Benzene	3.8	J	5.0	0.60	ug/L			04/15/19 15:26	1
Bromoform	5.0	U	5.0	0.47	ug/L			04/15/19 15:26	1
Bromomethane	5.0	U	5.0	1.2	ug/L			04/15/19 15:26	1
Carbon tetrachloride	5.0	U	5.0	0.51	ug/L			04/15/19 15:26	1
Chlorobenzene	5.0	U	5.0	0.48	ug/L			04/15/19 15:26	1
Chlorodibromomethane	5.0	U	5.0	0.41	ug/L			04/15/19 15:26	1
Chloroethane	5.0	U	5.0	0.87	ug/L			04/15/19 15:26	1
Chloroform	5.0	U	5.0	0.54	ug/L			04/15/19 15:26	1
Chloromethane	5.0	U	5.0	0.64	ug/L			04/15/19 15:26	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.33	ug/L			04/15/19 15:26	1
Dichlorobromomethane	5.0	U	5.0	0.54	ug/L			04/15/19 15:26	1
Ethylbenzene	5.0	U	5.0	0.46	ug/L			04/15/19 15:26	1
Methylene Chloride	5.0	U	5.0	0.81	ug/L			04/15/19 15:26	1
m-Xylene & p-Xylene	10	U	10	1.1	ug/L			04/15/19 15:26	1
o-Xylene	5.0	U	5.0	0.43	ug/L			04/15/19 15:26	1
Tetrachloroethene	5.0	U	5.0	0.34	ug/L			04/15/19 15:26	1
Toluene	1.6	J	5.0	0.45	ug/L			04/15/19 15:26	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.59	ug/L			04/15/19 15:26	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.44	ug/L			04/15/19 15:26	1
Trichloroethene	5.0	U	5.0	0.60	ug/L			04/15/19 15:26	1
Vinyl chloride	5.0	U	5.0	0.75	ug/L			04/15/19 15:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 130		04/15/19 15:26	1
4-Bromofluorobenzene (Surr)	98		76 - 123		04/15/19 15:26	1
Dibromofluoromethane (Surr)	106		75 - 123		04/15/19 15:26	1
Toluene-d8 (Surr)	98		77 - 120		04/15/19 15:26	1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.5	U	9.5	0.78	ug/L		04/15/19 08:27	04/17/19 23:50	1
1,2-Dichlorobenzene	9.5	U	9.5	4.8	ug/L		04/15/19 08:27	04/17/19 23:50	1
1,2-Diphenylhydrazine	9.5	U	9.5	0.74	ug/L		04/15/19 08:27	04/17/19 23:50	1
1,3-Dichlorobenzene	9.5	U	9.5	0.66	ug/L		04/15/19 08:27	04/17/19 23:50	1
1,4-Dichlorobenzene	9.5	U	9.5	5.4	ug/L		04/15/19 08:27	04/17/19 23:50	1
2,2'-oxybis[1-chloropropane]	4.8	U	4.8	0.80	ug/L		04/15/19 08:27	04/17/19 23:50	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 2-04112019

Lab Sample ID: 480-151896-3

Date Collected: 04/11/19 11:00

Matrix: Water

Date Received: 04/12/19 15:50

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	4.8	U	4.8	0.95	ug/L		04/15/19 08:27	04/17/19 23:50	1
2,4-Dichlorophenol	4.8	U	4.8	0.73	ug/L		04/15/19 08:27	04/17/19 23:50	1
2,4-Dimethylphenol	1.8	J	4.8	1.3	ug/L		04/15/19 08:27	04/17/19 23:50	1
2,4-Dinitrophenol	9.5	U	9.5	4.8	ug/L		04/15/19 08:27	04/17/19 23:50	1
2,4-Dinitrotoluene	9.5	U	9.5	4.8	ug/L		04/15/19 08:27	04/17/19 23:50	1
2,6-Dinitrotoluene	4.8	U	4.8	0.95	ug/L		04/15/19 08:27	04/17/19 23:50	1
2-Chloronaphthalene	4.8	U	4.8	0.87	ug/L		04/15/19 08:27	04/17/19 23:50	1
2-Chlorophenol	4.8	U	4.8	0.63	ug/L		04/15/19 08:27	04/17/19 23:50	1
2-Nitrophenol	4.8	U	4.8	0.67	ug/L		04/15/19 08:27	04/17/19 23:50	1
3,3'-Dichlorobenzidine	4.8	U	4.8	0.78	ug/L		04/15/19 08:27	04/17/19 23:50	1
4,6-Dinitro-2-methylphenol	9.5	U	9.5	0.63	ug/L		04/15/19 08:27	04/17/19 23:50	1
4-Bromophenyl phenyl ether	4.8	U	4.8	1.3	ug/L		04/15/19 08:27	04/17/19 23:50	1
4-Chloro-3-methylphenol	4.8	U	4.8	1.0	ug/L		04/15/19 08:27	04/17/19 23:50	1
4-Chlorophenyl phenyl ether	4.8	U	4.8	1.2	ug/L		04/15/19 08:27	04/17/19 23:50	1
4-Nitrophenol	14	U	14	9.5	ug/L		04/15/19 08:27	04/17/19 23:50	1
Acenaphthene	4.8	U	4.8	0.77	ug/L		04/15/19 08:27	04/17/19 23:50	1
Acenaphthylene	4.8	U	4.8	0.83	ug/L		04/15/19 08:27	04/17/19 23:50	1
Anthracene	4.8	U	4.8	1.3	ug/L		04/15/19 08:27	04/17/19 23:50	1
Benzidine	76	U	76	33	ug/L		04/15/19 08:27	04/17/19 23:50	1
Benzo[a]anthracene	4.8	U	4.8	1.0	ug/L		04/15/19 08:27	04/17/19 23:50	1
Benzo[a]pyrene	4.8	U	4.8	1.2	ug/L		04/15/19 08:27	04/17/19 23:50	1
Benzo[b]fluoranthene	4.8	U	4.8	1.1	ug/L		04/15/19 08:27	04/17/19 23:50	1
Benzo[g,h,i]perylene	4.8	U	4.8	1.4	ug/L		04/15/19 08:27	04/17/19 23:50	1
Benzo[k]fluoranthene	4.8	U	4.8	1.2	ug/L		04/15/19 08:27	04/17/19 23:50	1
Bis(2-chloroethoxy)methane	4.8	U	4.8	0.71	ug/L		04/15/19 08:27	04/17/19 23:50	1
Bis(2-chloroethyl)ether	4.8	U	4.8	0.89	ug/L		04/15/19 08:27	04/17/19 23:50	1
Bis(2-ethylhexyl) phthalate	9.5	U	9.5	1.1	ug/L		04/15/19 08:27	04/17/19 23:50	1
Butyl benzyl phthalate	4.8	U	4.8	1.0	ug/L		04/15/19 08:27	04/17/19 23:50	1
Chrysene	4.8	U	4.8	0.95	ug/L		04/15/19 08:27	04/17/19 23:50	1
Dibenz(a,h)anthracene	4.8	U	4.8	1.4	ug/L		04/15/19 08:27	04/17/19 23:50	1
Diethyl phthalate	4.8	U	4.8	0.95	ug/L		04/15/19 08:27	04/17/19 23:50	1
Dimethyl phthalate	4.8	U	4.8	0.87	ug/L		04/15/19 08:27	04/17/19 23:50	1
Di-n-butyl phthalate	4.8	U	4.8	1.5	ug/L		04/15/19 08:27	04/17/19 23:50	1
Di-n-octyl phthalate	4.8	U	4.8	1.1	ug/L		04/15/19 08:27	04/17/19 23:50	1
Fluoranthene	1.7	J	4.8	1.5	ug/L		04/15/19 08:27	04/17/19 23:50	1
Fluorene	1.0	J	4.8	0.95	ug/L		04/15/19 08:27	04/17/19 23:50	1
Hexachlorobenzene	4.8	U	4.8	0.95	ug/L		04/15/19 08:27	04/17/19 23:50	1
Hexachlorobutadiene	4.8	U	4.8	0.95	ug/L		04/15/19 08:27	04/17/19 23:50	1
Hexachlorocyclopentadiene	9.5	U	9.5	4.8	ug/L		04/15/19 08:27	04/17/19 23:50	1
Hexachloroethane	4.8	U	4.8	0.57	ug/L		04/15/19 08:27	04/17/19 23:50	1
Indeno[1,2,3-cd]pyrene	4.8	U	4.8	1.4	ug/L		04/15/19 08:27	04/17/19 23:50	1
Isophorone	4.8	U	4.8	0.70	ug/L		04/15/19 08:27	04/17/19 23:50	1
Naphthalene	4.8	U	4.8	0.82	ug/L		04/15/19 08:27	04/17/19 23:50	1
Nitrobenzene	4.8	U	4.8	0.77	ug/L		04/15/19 08:27	04/17/19 23:50	1
N-Nitrosodimethylamine	9.5	U	9.5	4.8	ug/L		04/15/19 08:27	04/17/19 23:50	1
N-Nitrosodi-n-propylamine	4.8	U	4.8	0.85	ug/L		04/15/19 08:27	04/17/19 23:50	1
N-Nitrosodiphenylamine	4.8	U	4.8	0.38	ug/L		04/15/19 08:27	04/17/19 23:50	1
Pentachlorophenol	9.5	U	9.5	1.5	ug/L		04/15/19 08:27	04/17/19 23:50	1
Phenanthrene	4.8	U	4.8	1.1	ug/L		04/15/19 08:27	04/17/19 23:50	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 2-04112019

Lab Sample ID: 480-151896-3

Date Collected: 04/11/19 11:00

Matrix: Water

Date Received: 04/12/19 15:50

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	13		4.8	0.33	ug/L		04/15/19 08:27	04/17/19 23:50	1
Pyrene	4.8	U	4.8	1.3	ug/L		04/15/19 08:27	04/17/19 23:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	97		52 - 151				04/15/19 08:27	04/17/19 23:50	1
2-Fluorobiphenyl	89		44 - 120				04/15/19 08:27	04/17/19 23:50	1
2-Fluorophenol	46		17 - 120				04/15/19 08:27	04/17/19 23:50	1
Nitrobenzene-d5	92		15 - 314				04/15/19 08:27	04/17/19 23:50	1
Phenol-d5	32		8 - 424				04/15/19 08:27	04/17/19 23:50	1
p-Terphenyl-d14 (Surr)	81		22 - 125				04/15/19 08:27	04/17/19 23:50	1

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.057	U	0.057	0.036	ug/L		04/17/19 08:19	04/19/19 12:07	1
PCB-1221	0.057	U	0.057	0.036	ug/L		04/17/19 08:19	04/19/19 12:07	1
PCB-1232	0.057	U	0.057	0.036	ug/L		04/17/19 08:19	04/19/19 12:07	1
PCB-1242	0.057	U	0.057	0.036	ug/L		04/17/19 08:19	04/19/19 12:07	1
PCB-1248	0.057	U	0.057	0.036	ug/L		04/17/19 08:19	04/19/19 12:07	1
PCB-1254	0.057	U	0.057	0.030	ug/L		04/17/19 08:19	04/19/19 12:07	1
PCB-1260	0.057	U	0.057	0.030	ug/L		04/17/19 08:19	04/19/19 12:07	1
PCB-1262	0.057	U	0.057	0.030	ug/L		04/17/19 08:19	04/19/19 12:07	1
PCB-1268	0.057	U	0.057	0.030	ug/L		04/17/19 08:19	04/19/19 12:07	1
Polychlorinated biphenyls, Total	0.057	U	0.057	0.036	ug/L		04/17/19 08:19	04/19/19 12:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	36		36 - 121				04/17/19 08:19	04/19/19 12:07	1
Tetrachloro-m-xylene (Surr)	73		42 - 135				04/17/19 08:19	04/19/19 12:07	1

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.020	U	0.020	0.0068	mg/L		04/17/19 07:47	04/19/19 11:30	1
Arsenic	0.015	U	0.015	0.0056	mg/L		04/17/19 07:47	04/19/19 11:30	1
Beryllium	0.0020	U	0.0020	0.00030	mg/L		04/17/19 07:47	04/19/19 11:30	1
Cadmium	0.0020	U	0.0020	0.00050	mg/L		04/17/19 07:47	04/19/19 11:30	1
Chromium	0.0040	U	0.0040	0.0010	mg/L		04/17/19 07:47	04/19/19 11:30	1
Copper	0.010	U	0.010	0.0016	mg/L		04/17/19 07:47	04/19/19 11:30	1
Lead	0.010	U	0.010	0.0030	mg/L		04/17/19 07:47	04/19/19 11:30	1
Nickel	0.0014	J	0.010	0.0013	mg/L		04/17/19 07:47	04/19/19 11:30	1
Selenium	0.025	U	0.025	0.0087	mg/L		04/17/19 07:47	04/19/19 11:30	1
Silver	0.0060	U	0.0060	0.0017	mg/L		04/17/19 07:47	04/19/19 11:30	1
Thallium	0.020	U	0.020	0.010	mg/L		04/17/19 07:47	04/19/19 11:30	1
Zinc	0.0024	J	0.010	0.0015	mg/L		04/17/19 07:47	04/19/19 11:30	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	0.00012	mg/L		04/17/19 11:42	04/17/19 14:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0080	J*	0.010	0.0050	mg/L		04/25/19 12:00	04/25/19 17:37	1
Cyanide, Total	0.011	H	0.010	0.0050	mg/L		05/05/19 12:45	05/06/19 12:47	1

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Client Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 1-04112019

Lab Sample ID: 480-151896-4

Date Collected: 04/11/19 09:30

Matrix: Waste

Date Received: 04/12/19 15:50

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	10000	U	10000	2800	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,1,2,2-Tetrachloroethane	10000	U	10000	1600	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,1,2-Trichloro-1,2,2-trifluoroethane	10000	U	10000	5000	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,1,2-Trichloroethane	10000	U	10000	2100	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,1-Dichloroethane	10000	U	10000	3100	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,1-Dichloroethene	10000	U	10000	3500	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,2,4-Trichlorobenzene	10000	U	10000	3800	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,2-Dibromo-3-Chloropropane	10000	U	10000	5000	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,2-Dibromoethane	10000	U	10000	1800	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,2-Dichlorobenzene	10000	U	10000	2600	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,2-Dichloroethane	10000	U	10000	4100	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,2-Dichloropropane	10000	U	10000	1600	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,3-Dichlorobenzene	10000	U	10000	2700	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
1,4-Dichlorobenzene	10000	U	10000	1400	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
2-Butanone (MEK)	50000	U	50000	30000	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
2-Hexanone	50000	U	50000	21000	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
4-Methyl-2-pentanone (MIBK)	50000	U	50000	3200	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Acetone	50000	U	50000	41000	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Benzene	120000		10000	1900	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Bromodichloromethane	10000	U	10000	2000	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Bromoform	10000	U	10000	5000	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Bromomethane	10000	U	10000	2200	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Carbon disulfide	10000	U	10000	4600	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Carbon tetrachloride	10000	U	10000	2600	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Chlorobenzene	10000	U	10000	1300	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Chloroethane	10000	U	10000	2100	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Chloroform	10000	U	10000	6900	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Chloromethane	10000	U	10000	2400	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
cis-1,2-Dichloroethene	10000	U	10000	2800	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
cis-1,3-Dichloropropene	10000	U	10000	2400	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Cyclohexane	10000	U	10000	2200	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Dibromochloromethane	10000	U	10000	4800	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Dichlorodifluoromethane	10000	U	10000	4400	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Ethylbenzene	10000	U	10000	2900	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Isopropylbenzene	10000	U	10000	1500	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
m,p-Xylene	33000		20000	5500	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Methyl acetate	50000	U	50000	4800	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Methyl tert-butyl ether	10000	U	10000	3800	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Methylcyclohexane	10000	U	10000	4700	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Methylene Chloride	10000	U	10000	2000	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
o-Xylene	7600	J	10000	1300	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Styrene	7800	J	10000	2400	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Tetrachloroethene	10000	U	10000	1300	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Toluene	64000		10000	2700	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
trans-1,2-Dichloroethene	10000	U	10000	2400	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
trans-1,3-Dichloropropene	10000	U	10000	980	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Trichloroethene	10000	U	10000	2800	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Trichlorofluoromethane	10000	U	10000	4700	ug/Kg		04/16/19 09:37	04/17/19 16:53	100
Vinyl chloride	10000	U	10000	3400	ug/Kg		04/16/19 09:37	04/17/19 16:53	100

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Client Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 1-04112019

Lab Sample ID: 480-151896-4

Date Collected: 04/11/19 09:30

Matrix: Waste

Date Received: 04/12/19 15:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		53 - 146	04/16/19 09:37	04/17/19 16:53	100
4-Bromofluorobenzene (Surr)	85		49 - 148	04/16/19 09:37	04/17/19 16:53	100
Toluene-d8 (Surr)	97		50 - 149	04/16/19 09:37	04/17/19 16:53	100
Dibromofluoromethane (Surr)	91		60 - 140	04/16/19 09:37	04/17/19 16:53	100

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	710000	U	710000	56000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2,4-Dinitrotoluene	360000	U	360000	75000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2,4,5-Trichlorophenol	360000	U	360000	99000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2,4,6-Trichlorophenol	360000	U	360000	73000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2-Methylphenol	250000	J	360000	43000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
3-Methylphenol	900000		710000	56000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
4-Methylphenol	900000		710000	43000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Hexachlorobenzene	360000	U	360000	49000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Hexachlorobutadiene	360000	U	360000	54000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Hexachloroethane	360000	U	360000	47000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Nitrobenzene	360000	U	360000	41000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Pentachlorophenol	710000	U	710000	360000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Pyridine	710000	U	710000	51000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Dimethyl phthalate	360000	U	360000	43000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2,4-Dimethylphenol	360000	U	360000	88000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Isophorone	360000	U	360000	77000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Fluorene	7600000		360000	43000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Dibenzofuran	4400000		360000	43000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Bis(2-ethylhexyl) phthalate	360000	U	360000	120000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
N-Nitrosodi-n-propylamine	360000	U	360000	62000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Acenaphthylene	3500000		360000	47000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2,4-Dichlorophenol	360000	U	360000	39000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
4-Chlorophenyl phenyl ether	360000	U	360000	45000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Benzo[g,h,i]perylene	4100000		360000	39000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
4-Chloro-3-methylphenol	360000	U	360000	90000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Di-n-octyl phthalate	360000	U	360000	43000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2-Nitrophenol	360000	U	360000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Benzo[k]fluoranthene	3500000		360000	47000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Benzo[a]pyrene	6000000		360000	54000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2,4-Dinitrophenol	3600000	U	3600000	1700000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Anthracene	3900000		360000	90000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2-Methylnaphthalene	4700000		360000	73000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Di-n-butyl phthalate	360000	U	360000	62000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Dibenz(a,h)anthracene	1200000		360000	64000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
4-Nitroaniline	710000	U	710000	190000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
3,3'-Dichlorobenzidine	710000	U	710000	430000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2-Nitroaniline	710000	U *	710000	54000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
4-Bromophenyl phenyl ether	360000	U	360000	51000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Caprolactam	360000	U	360000	110000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Diethyl phthalate	360000	U	360000	47000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Carbazole	3600000		360000	43000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
4,6-Dinitro-2-methylphenol	710000	U *	710000	360000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
bis (2-chloroisopropyl) ether	360000	U *	360000	73000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 1-04112019

Lab Sample ID: 480-151896-4

Date Collected: 04/11/19 09:30

Matrix: Waste

Date Received: 04/12/19 15:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodiphenylamine	360000	U	360000	300000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Acetophenone	360000	U	360000	49000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Bis(2-chloroethyl)ether	360000	U	360000	47000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Atrazine	360000	U	360000	130000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Benzo[a]anthracene	6900000		360000	36000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Indeno[1,2,3-cd]pyrene	3800000		360000	45000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Benzaldehyde	360000	U	360000	290000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Butyl benzyl phthalate	360000	U	360000	60000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Hexachlorocyclopentadiene	360000	U	360000	49000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Chrysene	8000000		360000	81000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Acenaphthene	870000		360000	54000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Benzo[b]fluoranthene	8000000		360000	58000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
4-Nitrophenol	710000	U	710000	260000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
4-Chloroaniline	360000	U	360000	90000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2-Chlorophenol	360000	U	360000	66000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
3-Nitroaniline	710000	U	710000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2,6-Dinitrotoluene	360000	U	360000	43000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Biphenyl	1100000		360000	54000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Phenol	950000		360000	56000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
Bis(2-chloroethoxy)methane	360000	U	360000	77000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10
2-Chloronaphthalene	360000	U	360000	60000	ug/Kg		04/19/19 12:31	04/22/19 23:29	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	110		54 - 120	04/19/19 12:31	04/22/19 23:29	10
2-Fluorobiphenyl	102		60 - 120	04/19/19 12:31	04/22/19 23:29	10
2-Fluorophenol (Surr)	106		52 - 120	04/19/19 12:31	04/22/19 23:29	10
Nitrobenzene-d5 (Surr)	109		53 - 120	04/19/19 12:31	04/22/19 23:29	10
p-Terphenyl-d14 (Surr)	107		65 - 121	04/19/19 12:31	04/22/19 23:29	10
Phenol-d5 (Surr)	108		54 - 120	04/19/19 12:31	04/22/19 23:29	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenanthrene	26000000		7300000	1100000	ug/Kg		04/19/19 12:31	04/23/19 15:07	200
Pyrene	14000000		7300000	860000	ug/Kg		04/19/19 12:31	04/23/19 15:07	200
Naphthalene	49000000		7300000	940000	ug/Kg		04/19/19 12:31	04/23/19 15:07	200
Fluoranthene	17000000		7300000	770000	ug/Kg		04/19/19 12:31	04/23/19 15:07	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	0	X	54 - 120	04/19/19 12:31	04/23/19 15:07	200
2-Fluorobiphenyl	0	X	60 - 120	04/19/19 12:31	04/23/19 15:07	200
2-Fluorophenol (Surr)	0	X	52 - 120	04/19/19 12:31	04/23/19 15:07	200
Nitrobenzene-d5 (Surr)	0	X	53 - 120	04/19/19 12:31	04/23/19 15:07	200
p-Terphenyl-d14 (Surr)	0	X	65 - 121	04/19/19 12:31	04/23/19 15:07	200
Phenol-d5 (Surr)	0	X	54 - 120	04/19/19 12:31	04/23/19 15:07	200

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	91	U	91	36	mg/Kg		04/19/19 12:35	04/23/19 17:22	20
Endrin	9.1	U	9.1	2.9	mg/Kg		04/19/19 12:35	04/23/19 17:22	20
gamma-BHC (Lindane)	9.1	U	9.1	6.5	mg/Kg		04/19/19 12:35	04/23/19 17:22	20

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Client Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 1-04112019

Lab Sample ID: 480-151896-4

Date Collected: 04/11/19 09:30

Matrix: Waste

Date Received: 04/12/19 15:50

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	9.1	U	9.1	1.4	mg/Kg		04/19/19 12:35	04/23/19 17:22	20
Heptachlor epoxide	9.1	U	9.1	2.4	mg/Kg		04/19/19 12:35	04/23/19 17:22	20
Methoxychlor	9.1	U	9.1	2.4	mg/Kg		04/19/19 12:35	04/23/19 17:22	20
Toxaphene	91	U	91	53	mg/Kg		04/19/19 12:35	04/23/19 17:22	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	0	X	45 - 120				04/19/19 12:35	04/23/19 17:22	20
Tetrachloro-m-xylene	0	X	30 - 124				04/19/19 12:35	04/23/19 17:22	20

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	3.8	U	3.8	0.75	mg/Kg		04/23/19 12:04	04/25/19 21:04	1
PCB-1221	3.8	U	3.8	0.75	mg/Kg		04/23/19 12:04	04/25/19 21:04	1
PCB-1232	3.8	U	3.8	0.75	mg/Kg		04/23/19 12:04	04/25/19 21:04	1
PCB-1242	3.8	U	3.8	0.75	mg/Kg		04/23/19 12:04	04/25/19 21:04	1
PCB-1248	3.8	U	3.8	0.75	mg/Kg		04/23/19 12:04	04/25/19 21:04	1
PCB-1254	3.8	U	3.8	0.18	mg/Kg		04/23/19 12:04	04/25/19 21:04	1
PCB-1260	3.8	U	3.8	0.18	mg/Kg		04/23/19 12:04	04/25/19 21:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	72		60 - 154				04/23/19 12:04	04/25/19 21:04	1
DCB Decachlorobiphenyl	88		65 - 174				04/23/19 12:04	04/25/19 21:04	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	2300	U	2300	470	ug/Kg		04/24/19 12:45	04/25/19 15:41	1
2,4,5-T	580	U	580	130	ug/Kg		04/24/19 12:45	04/25/19 15:41	1
Silvex (2,4,5-TP)	580	U	580	130	ug/Kg		04/24/19 12:45	04/25/19 15:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	82		15 - 120				04/24/19 12:45	04/25/19 15:41	1
2,4-Dichlorophenylacetic acid	75		15 - 120				04/24/19 12:45	04/25/19 15:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.2		2.1	0.42	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Barium	6.4		0.52	0.11	mg/Kg		04/24/19 12:19	04/26/19 11:33	1
Cadmium	2.3		0.21	0.031	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Chromium	1.6	B	0.52	0.21	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Lead	73.5		1.0	0.25	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Selenium	2.7	J	4.2	0.42	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Silver	0.62	U	0.62	0.21	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Antimony	15.6	U	15.6	0.42	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Sodium	184		145	13.5	mg/Kg		04/24/19 12:19	04/26/19 11:33	1
Potassium	81.8		31.2	20.8	mg/Kg		04/24/19 12:19	04/26/19 11:33	1
Beryllium	0.063	J	0.21	0.029	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Thallium	4.1	J	6.2	0.31	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Calcium	377	B	52.0	3.4	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Iron	2530		10.4	3.6	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Nickel	1.4	J	5.2	0.24	mg/Kg		04/24/19 12:19	04/25/19 15:43	1
Vanadium	1.4		0.52	0.11	mg/Kg		04/24/19 12:19	04/25/19 15:43	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 1-04112019

Lab Sample ID: 480-151896-4

Date Collected: 04/11/19 09:30

Matrix: Waste

Date Received: 04/12/19 15:50

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	99.0	B	20.8	0.96	mg/Kg	-	04/24/19 12:19	04/25/19 15:43	1
Copper	3.0		1.0	0.22	mg/Kg	-	04/24/19 12:19	04/25/19 15:43	1
Aluminum	637		10.4	4.6	mg/Kg	-	04/24/19 12:19	04/25/19 15:43	1
Zinc	106		2.1	0.67	mg/Kg	-	04/24/19 12:19	04/25/19 15:43	1
Manganese	9.4	B	0.21	0.033	mg/Kg	-	04/24/19 12:19	04/25/19 15:43	1
Cobalt	0.48	J	0.52	0.052	mg/Kg	-	04/24/19 12:19	04/25/19 15:43	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.14		0.020	0.0083	mg/Kg	-	04/25/19 12:23	04/25/19 14:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Halogens	1130		100	22.0	ug/g	-		05/01/19 07:07	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>176		50.0	50.0	Degrees F	-		04/19/19 07:10	1
Cyanide, Reactive	10	U	10	10	mg/Kg	-	04/23/19 09:01	04/25/19 18:17	1
Sulfide, Reactive	10	U	10	10	mg/Kg	-	04/23/19 09:01	04/24/19 14:40	1
pH	7.7	HF	0.1	0.1	SU	-		04/18/19 13:00	1
Temperature	21.1	HF	0.001	0.001	Degrees C	-		04/18/19 13:00	1

Client Sample Results

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 3-04112019

Lab Sample ID: 480-151896-5

Date Collected: 04/11/19 10:30

Matrix: Waste

Date Received: 04/12/19 15:50

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5000	U	5000	1400	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,1,2,2-Tetrachloroethane	5000	U	5000	810	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,1,2-Trichloro-1,2,2-trifluoroethane	5000	U	5000	2500	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,1,2-Trichloroethane	5000	U	5000	1000	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,1-Dichloroethane	5000	U	5000	1500	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,1-Dichloroethene	5000	U	5000	1700	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,2,4-Trichlorobenzene	5000	U	5000	1900	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,2-Dibromo-3-Chloropropane	5000	U	5000	2500	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,2-Dibromoethane	5000	U	5000	870	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,2-Dichlorobenzene	5000	U	5000	1300	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,2-Dichloroethane	5000	U	5000	2000	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,2-Dichloropropane	5000	U	5000	810	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,3-Dichlorobenzene	5000	U	5000	1300	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
1,4-Dichlorobenzene	5000	U	5000	700	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
2-Butanone (MEK)	25000	U	25000	15000	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
2-Hexanone	25000	U	25000	10000	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
4-Methyl-2-pentanone (MIBK)	25000	U	25000	1600	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Acetone	25000	U	25000	21000	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Benzene	12000		5000	950	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Bromodichloromethane	5000	U	5000	1000	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Bromoform	5000	U	5000	2500	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Bromomethane	5000	U	5000	1100	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Carbon disulfide	5000	U	5000	2300	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Carbon tetrachloride	5000	U	5000	1300	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Chlorobenzene	5000	U	5000	660	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Chloroethane	5000	U	5000	1000	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Chloroform	5000	U	5000	3400	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Chloromethane	5000	U	5000	1200	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
cis-1,2-Dichloroethene	5000	U	5000	1400	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
cis-1,3-Dichloropropene	5000	U	5000	1200	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Cyclohexane	5000	U	5000	1100	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Dibromochloromethane	5000	U	5000	2400	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Dichlorodifluoromethane	5000	U	5000	2200	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Ethylbenzene	5000	U	5000	1500	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Isopropylbenzene	5000	U	5000	750	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
m,p-Xylene	3200	J	10000	2800	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Methyl acetate	25000	U	25000	2400	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Methyl tert-butyl ether	5000	U	5000	1900	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Methylcyclohexane	5000	U	5000	2300	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Methylene Chloride	5000	U	5000	990	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
o-Xylene	1000	J	5000	650	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Styrene	1600	J	5000	1200	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Tetrachloroethene	5000	U	5000	670	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Toluene	6200		5000	1300	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
trans-1,2-Dichloroethene	5000	U	5000	1200	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
trans-1,3-Dichloropropene	5000	U	5000	490	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Trichloroethene	5000	U	5000	1400	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Trichlorofluoromethane	5000	U	5000	2300	ug/Kg		04/16/19 09:37	04/17/19 17:16	50
Vinyl chloride	5000	U	5000	1700	ug/Kg		04/16/19 09:37	04/17/19 17:16	50

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 3-04112019

Lab Sample ID: 480-151896-5

Date Collected: 04/11/19 10:30

Matrix: Waste

Date Received: 04/12/19 15:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		53 - 146	04/16/19 09:37	04/17/19 17:16	50
4-Bromofluorobenzene (Surr)	88		49 - 148	04/16/19 09:37	04/17/19 17:16	50
Toluene-d8 (Surr)	99		50 - 149	04/16/19 09:37	04/17/19 17:16	50
Dibromofluoromethane (Surr)	88		60 - 140	04/16/19 09:37	04/17/19 17:16	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	1700000	U	1700000	130000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2,4-Dinitrotoluene	850000	U	850000	180000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2,4,5-Trichlorophenol	850000	U	850000	230000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2,4,6-Trichlorophenol	850000	U	850000	170000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2-Methylphenol	850000	U	850000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
3-Methylphenol	220000	J	1700000	130000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
4-Methylphenol	220000	J	1700000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Hexachlorobenzene	850000	U	850000	120000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Hexachlorobutadiene	850000	U	850000	130000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Hexachloroethane	850000	U	850000	110000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Nitrobenzene	850000	U	850000	95000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Pentachlorophenol	1700000	U	1700000	850000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Pyridine	1700000	U	1700000	120000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Dimethyl phthalate	850000	U	850000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2,4-Dimethylphenol	850000	U	850000	210000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Isophorone	850000	U	850000	180000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Fluorene	1800000		850000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Dibenzofuran	1100000		850000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Bis(2-ethylhexyl) phthalate	850000	U	850000	290000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
N-Nitrosodi-n-propylamine	850000	U	850000	150000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Acenaphthylene	1000000		850000	110000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2,4-Dichlorophenol	850000	U	850000	90000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
4-Chlorophenyl phenyl ether	850000	U	850000	110000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Benzo[g,h,i]perylene	620000	J	850000	90000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
4-Chloro-3-methylphenol	850000	U	850000	210000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Di-n-octyl phthalate	850000	U	850000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Phenanthrene	6600000		850000	130000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2-Nitrophenol	850000	U	850000	240000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Benzo[k]fluoranthene	710000	J	850000	110000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Benzo[a]pyrene	1000000		850000	130000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2,4-Dinitrophenol	8300000	U	8300000	3900000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Anthracene	1500000		850000	210000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2-Methylnaphthalene	700000	J	850000	170000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Di-n-butyl phthalate	850000	U	850000	150000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Pyrene	2800000		850000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Dibenz(a,h)anthracene	850000	U	850000	150000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
4-Nitroaniline	1700000	U	1700000	450000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Naphthalene	5600000		850000	110000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Fluoranthene	3500000		850000	90000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
3,3'-Dichlorobenzidine	1700000	U	1700000	1000000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2-Nitroaniline	1700000	U *	1700000	130000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
4-Bromophenyl phenyl ether	850000	U	850000	120000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Caprolactam	850000	U	850000	260000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 3-04112019

Lab Sample ID: 480-151896-5

Date Collected: 04/11/19 10:30

Matrix: Waste

Date Received: 04/12/19 15:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diethyl phthalate	850000	U	850000	110000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Carbazole	1000000		850000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
4,6-Dinitro-2-methylphenol	1700000	U *	1700000	850000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
bis (2-chloroisopropyl) ether	850000	U *	850000	170000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
N-Nitrosodiphenylamine	850000	U	850000	690000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Acetophenone	850000	U	850000	120000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Bis(2-chloroethyl)ether	850000	U	850000	110000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Atrazine	850000	U	850000	300000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Benzo[a]anthracene	1300000		850000	85000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Indeno[1,2,3-cd]pyrene	570000 J		850000	110000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Benzaldehyde	850000	U	850000	680000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Butyl benzyl phthalate	850000	U	850000	140000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Hexachlorocyclopentadiene	850000	U	850000	120000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Chrysene	1200000		850000	190000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Acenaphthene	190000 J		850000	130000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Benzo[b]fluoranthene	1100000		850000	140000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
4-Nitrophenol	1700000	U	1700000	600000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
4-Chloroaniline	850000	U	850000	210000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2-Chlorophenol	850000	U	850000	160000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
3-Nitroaniline	1700000	U	1700000	240000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2,6-Dinitrotoluene	850000	U	850000	100000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Biphenyl	240000 J		850000	130000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Phenol	850000	U	850000	130000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
Bis(2-chloroethoxy)methane	850000	U	850000	180000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20
2-Chloronaphthalene	850000	U	850000	140000	ug/Kg		04/19/19 12:31	04/22/19 23:53	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	116		54 - 120	04/19/19 12:31	04/22/19 23:53	20
2-Fluorobiphenyl	86		60 - 120	04/19/19 12:31	04/22/19 23:53	20
2-Fluorophenol (Surr)	109		52 - 120	04/19/19 12:31	04/22/19 23:53	20
Nitrobenzene-d5 (Surr)	104		53 - 120	04/19/19 12:31	04/22/19 23:53	20
p-Terphenyl-d14 (Surr)	122	X	65 - 121	04/19/19 12:31	04/22/19 23:53	20
Phenol-d5 (Surr)	94		54 - 120	04/19/19 12:31	04/22/19 23:53	20

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	140	U	140	56	mg/Kg		04/19/19 12:35	04/23/19 17:42	50
Endrin	14	U	14	4.4	mg/Kg		04/19/19 12:35	04/23/19 17:42	50
gamma-BHC (Lindane)	14	U	14	10	mg/Kg		04/19/19 12:35	04/23/19 17:42	50
Heptachlor	14	U	14	2.2	mg/Kg		04/19/19 12:35	04/23/19 17:42	50
Heptachlor epoxide	14	U	14	3.6	mg/Kg		04/19/19 12:35	04/23/19 17:42	50
Methoxychlor	14	U	14	3.6	mg/Kg		04/19/19 12:35	04/23/19 17:42	50
Toxaphene	140	U	140	81	mg/Kg		04/19/19 12:35	04/23/19 17:42	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	0	X	45 - 120	04/19/19 12:35	04/23/19 17:42	50
Tetrachloro-m-xylene	0	X	30 - 124	04/19/19 12:35	04/23/19 17:42	50

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 3-04112019

Lab Sample ID: 480-151896-5

Date Collected: 04/11/19 10:30

Matrix: Waste

Date Received: 04/12/19 15:50

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	6.7	U	6.7	1.3	mg/Kg		04/23/19 12:04	04/25/19 21:20	2
PCB-1221	6.7	U	6.7	1.3	mg/Kg		04/23/19 12:04	04/25/19 21:20	2
PCB-1232	6.7	U	6.7	1.3	mg/Kg		04/23/19 12:04	04/25/19 21:20	2
PCB-1242	6.7	U	6.7	1.3	mg/Kg		04/23/19 12:04	04/25/19 21:20	2
PCB-1248	6.7	U	6.7	1.3	mg/Kg		04/23/19 12:04	04/25/19 21:20	2
PCB-1254	6.7	U	6.7	0.31	mg/Kg		04/23/19 12:04	04/25/19 21:20	2
PCB-1260	6.7	U	6.7	0.31	mg/Kg		04/23/19 12:04	04/25/19 21:20	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	70		60 - 154	04/23/19 12:04	04/25/19 21:20	2
DCB Decachlorobiphenyl	87		65 - 174	04/23/19 12:04	04/25/19 21:20	2

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	2400	U	2400	490	ug/Kg		04/24/19 12:45	04/25/19 16:01	1
2,4,5-T	590	U	590	130	ug/Kg		04/24/19 12:45	04/25/19 16:01	1
Silvex (2,4,5-TP)	590	U	590	140	ug/Kg		04/24/19 12:45	04/25/19 16:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	73		15 - 120	04/24/19 12:45	04/25/19 16:01	1
2,4-Dichlorophenylacetic acid	66		15 - 120	04/24/19 12:45	04/25/19 16:01	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.1	U	2.1	0.41	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Barium	0.51	U	0.51	0.11	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Cadmium	0.21	U	0.21	0.031	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Chromium	0.49	J B	0.51	0.21	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Lead	1.0	U	1.0	0.25	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Selenium	4.1	U	4.1	0.41	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Silver	0.62	U	0.62	0.21	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Antimony	15.4	U	15.4	0.41	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Sodium	47.4	J B ^	144	13.3	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Potassium	30.8	U	30.8	20.5	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Beryllium	0.21	U	0.21	0.029	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Thallium	6.2	U	6.2	0.31	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Calcium	15.7	J B	51.3	3.4	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Iron	15.0		10.3	3.6	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Nickel	5.1		5.1	0.24	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Vanadium	29.8		0.51	0.11	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Magnesium	2.8	J B	20.5	0.95	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Copper	0.34	J	1.0	0.22	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Aluminum	4.9	J	10.3	4.5	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Zinc	2.1	U	2.1	0.66	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Manganese	0.14	J B	0.21	0.033	mg/Kg		04/24/19 12:19	04/25/19 15:58	1
Cobalt	0.51	U	0.51	0.051	mg/Kg		04/24/19 12:19	04/25/19 15:58	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.020	U	0.020	0.0083	mg/Kg		04/25/19 12:23	04/25/19 14:29	1

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Client Sample Results

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 3-04112019

Lab Sample ID: 480-151896-5

Date Collected: 04/11/19 10:30

Matrix: Waste

Date Received: 04/12/19 15:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Halogens	86.0	J	100	22.0	ug/g			05/01/19 07:07	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>176		50.0	50.0	Degrees F			04/19/19 07:10	1
Cyanide, Reactive	10	U	10	10	mg/Kg		04/23/19 09:01	04/25/19 18:17	1
Sulfide, Reactive	10	U	10	10	mg/Kg		04/23/19 09:01	04/24/19 14:40	1
pH	6.1	HF	0.1	0.1	SU			04/18/19 13:00	1
Temperature	21.4	HF	0.001	0.001	Degrees C			04/18/19 13:00	1

Surrogate Summary

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (68-130)	BFB (76-123)	DBFM (75-123)	TOL (77-120)
480-151896-3	TANK 2-04112019	101	98	106	98
LCS 480-467877/5	Lab Control Sample	106	106	105	103
MB 480-467877/7	Method Blank	103	100	102	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 DBFM = Dibromofluoromethane (Surr)
 TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Waste

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (53-146)	BFB (49-148)	TOL (50-149)	DBFM (60-140)
480-151896-4	TANK 1-04112019	102	85	97	91
480-151896-5	TANK 3-04112019	103	88	99	88
LCS 480-468129/1-A	Lab Control Sample	102	100	96	99
MB 480-468129/2-A	Method Blank	101	98	96	94

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 TOL = Toluene-d8 (Surr)
 DBFM = Dibromofluoromethane (Surr)

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TBP (52-151)	FBP (44-120)	2FP (17-120)	NBZ (15-314)	PHL (8-424)	TPHd14 (22-125)
480-151896-3	TANK 2-04112019	97	89	46	92	32	81
LCS 480-467891/2-A	Lab Control Sample	103	82	47	86	32	86
LCSD 480-467891/3-A	Lab Control Sample Dup	95	82	47	83	33	90
MB 480-467891/1-A	Method Blank	95	86	49	92	35	88

Surrogate Legend

TBP = 2,4,6-Tribromophenol
 FBP = 2-Fluorobiphenyl
 2FP = 2-Fluorophenol
 NBZ = Nitrobenzene-d5
 PHL = Phenol-d5
 TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Waste

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (54-120)	FBP (60-120)	2FP (52-120)	NBZ (53-120)	TPHd14 (65-121)	PHL (54-120)
480-151896-4	TANK 1-04112019	110	102	106	109	107	108
480-151896-4 - DL	TANK 1-04112019	0 X	0 X	0 X	0 X	0 X	0 X
480-151896-5	TANK 3-04112019	116	86	109	104	122 X	94
LCS 480-468844/2-A	Lab Control Sample	106	98	105	105	95	102
LCSD 480-468844/3-A	Lab Control Sample Dup	109	97	109	108	99	106
MB 480-468844/1-A	Method Blank	91	93	103	101	89	101

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol (Surr)

NBZ = Nitrobenzene-d5 (Surr)

TPHd14 = p-Terphenyl-d14 (Surr)

PHL = Phenol-d5 (Surr)

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCBP2 (36-121)	TCX2 (42-135)
480-151896-3	TANK 2-04112019	36	73
LCS 480-468299/2-A	Lab Control Sample	39	78
LCSD 480-468299/3-A	Lab Control Sample Dup	40	76
MB 480-468299/1-A	Method Blank	39	67

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Waste

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCBP2 (45-120)	TCX2 (30-124)
480-151896-4	TANK 1-04112019	0 X	0 X
480-151896-5	TANK 3-04112019	0 X	0 X
LCS 480-468846/2-A	Lab Control Sample	88	57
LCSD 480-468846/3-A	Lab Control Sample Dup	90	57
MB 480-468846/1-A	Method Blank	135 X	58

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Waste

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX1 (60-154)	DCBP1 (65-174)
480-151896-4	TANK 1-04112019	72	88

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Surrogate Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Matrix: Waste

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (60-154)	DCBP1 (65-174)
480-151896-5	TANK 3-04112019	70	87
LCS 480-469296/2-A	Lab Control Sample	65	90
MB 480-469296/1-A	Method Blank	50 X	78

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCBP = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Waste

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (15-120)	DCPAA2 (15-120)
480-151896-4	TANK 1-04112019	82	75
480-151896-5	TANK 3-04112019	73	66
LCS 240-377980/7-A	Lab Control Sample	84	82
MB 240-377980/6-A	Method Blank	72	65

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-467877/7
Matrix: Water
Analysis Batch: 467877

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	5.0	U	5.0	0.39	ug/L			04/15/19 10:54	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.26	ug/L			04/15/19 10:54	1
1,1,2-Trichloroethane	5.0	U	5.0	0.48	ug/L			04/15/19 10:54	1
1,1-Dichloroethane	5.0	U	5.0	0.59	ug/L			04/15/19 10:54	1
1,1-Dichloroethene	5.0	U	5.0	0.85	ug/L			04/15/19 10:54	1
1,2-Dichlorobenzene	5.0	U	5.0	0.44	ug/L			04/15/19 10:54	1
1,2-Dichloroethane	5.0	U	5.0	0.60	ug/L			04/15/19 10:54	1
1,2-Dichloroethene, Total	10	U	10	3.2	ug/L			04/15/19 10:54	1
1,2-Dichloropropane	5.0	U	5.0	0.61	ug/L			04/15/19 10:54	1
1,3-Dichlorobenzene	5.0	U	5.0	0.54	ug/L			04/15/19 10:54	1
1,4-Dichlorobenzene	5.0	U	5.0	0.51	ug/L			04/15/19 10:54	1
2-Chloroethyl vinyl ether	25	U	25	1.9	ug/L			04/15/19 10:54	1
Acrolein	100	U	100	17	ug/L			04/15/19 10:54	1
Acrylonitrile	50	U	50	1.9	ug/L			04/15/19 10:54	1
Benzene	5.0	U	5.0	0.60	ug/L			04/15/19 10:54	1
Bromoform	5.0	U	5.0	0.47	ug/L			04/15/19 10:54	1
Bromomethane	5.0	U	5.0	1.2	ug/L			04/15/19 10:54	1
Carbon tetrachloride	5.0	U	5.0	0.51	ug/L			04/15/19 10:54	1
Chlorobenzene	5.0	U	5.0	0.48	ug/L			04/15/19 10:54	1
Chlorodibromomethane	5.0	U	5.0	0.41	ug/L			04/15/19 10:54	1
Chloroethane	5.0	U	5.0	0.87	ug/L			04/15/19 10:54	1
Chloroform	5.0	U	5.0	0.54	ug/L			04/15/19 10:54	1
Chloromethane	5.0	U	5.0	0.64	ug/L			04/15/19 10:54	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.33	ug/L			04/15/19 10:54	1
Dichlorobromomethane	5.0	U	5.0	0.54	ug/L			04/15/19 10:54	1
Ethylbenzene	5.0	U	5.0	0.46	ug/L			04/15/19 10:54	1
Methylene Chloride	5.0	U	5.0	0.81	ug/L			04/15/19 10:54	1
m-Xylene & p-Xylene	10	U	10	1.1	ug/L			04/15/19 10:54	1
o-Xylene	5.0	U	5.0	0.43	ug/L			04/15/19 10:54	1
Tetrachloroethene	5.0	U	5.0	0.34	ug/L			04/15/19 10:54	1
Toluene	5.0	U	5.0	0.45	ug/L			04/15/19 10:54	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.59	ug/L			04/15/19 10:54	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.44	ug/L			04/15/19 10:54	1
Trichloroethene	5.0	U	5.0	0.60	ug/L			04/15/19 10:54	1
Vinyl chloride	5.0	U	5.0	0.75	ug/L			04/15/19 10:54	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	103		68 - 130		04/15/19 10:54	1
4-Bromofluorobenzene (Surr)	100		76 - 123		04/15/19 10:54	1
Dibromofluoromethane (Surr)	102		75 - 123		04/15/19 10:54	1
Toluene-d8 (Surr)	99		77 - 120		04/15/19 10:54	1

Lab Sample ID: LCS 480-467877/5
Matrix: Water
Analysis Batch: 467877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-467877/5
 Matrix: Water
 Analysis Batch: 467877

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	20.0	20.0		ug/L		100	46 - 157
1,1,2-Trichloroethane	20.0	19.9		ug/L		99	52 - 150
1,1-Dichloroethane	20.0	21.6		ug/L		108	59 - 155
1,1-Dichloroethene	20.0	22.5		ug/L		112	1 - 234
1,2-Dichlorobenzene	20.0	19.5		ug/L		98	18 - 190
1,2-Dichloroethane	20.0	19.8		ug/L		99	49 - 155
1,2-Dichloropropane	20.0	20.8		ug/L		104	1 - 210
1,3-Dichlorobenzene	20.0	19.6		ug/L		98	59 - 156
1,4-Dichlorobenzene	20.0	19.4		ug/L		97	18 - 190
2-Chloroethyl vinyl ether	20.0	20.6	J	ug/L		103	1 - 305
Benzene	20.0	21.0		ug/L		105	37 - 151
Bromoform	20.0	20.6		ug/L		103	45 - 169
Bromomethane	20.0	19.9		ug/L		99	1 - 242
Carbon tetrachloride	20.0	22.5		ug/L		113	70 - 140
Chlorobenzene	20.0	20.1		ug/L		100	37 - 160
Chlorodibromomethane	20.0	20.2		ug/L		101	53 - 149
Chloroethane	20.0	21.8		ug/L		109	14 - 230
Chloroform	20.0	21.2		ug/L		106	51 - 138
Chloromethane	20.0	19.8		ug/L		99	1 - 273
cis-1,3-Dichloropropene	20.0	20.9		ug/L		104	1 - 227
Dichlorobromomethane	20.0	20.6		ug/L		103	35 - 155
Ethylbenzene	20.0	20.8		ug/L		104	37 - 162
Methylene Chloride	20.0	21.0		ug/L		105	1 - 221
Tetrachloroethene	20.0	21.2		ug/L		106	64 - 148
Toluene	20.0	20.6		ug/L		103	47 - 150
trans-1,2-Dichloroethene	20.0	22.4		ug/L		112	54 - 156
trans-1,3-Dichloropropene	20.0	20.5		ug/L		102	17 - 183
Trichloroethene	20.0	21.9		ug/L		109	71 - 157
Vinyl chloride	20.0	20.2		ug/L		101	1 - 251

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		68 - 130
4-Bromofluorobenzene (Surr)	106		76 - 123
Dibromofluoromethane (Surr)	105		75 - 123
Toluene-d8 (Surr)	103		77 - 120

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-468129/2-A
 Matrix: Waste
 Analysis Batch: 468062

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 468129

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	100	U	100	28	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,1,2,2-Tetrachloroethane	100	U	100	16	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	100	U	100	50	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,1,2-Trichloroethane	100	U	100	21	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,1-Dichloroethane	100	U	100	31	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,1-Dichloroethene	100	U	100	35	ug/Kg		04/16/19 09:37	04/16/19 11:50	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-468129/2-A
Matrix: Waste
Analysis Batch: 468062

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468129

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trichlorobenzene	100	U	100	38	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,2-Dibromo-3-Chloropropane	100	U	100	50	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,2-Dibromoethane	100	U	100	18	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,2-Dichlorobenzene	100	U	100	26	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,2-Dichloroethane	100	U	100	41	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,2-Dichloropropane	100	U	100	16	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,3-Dichlorobenzene	100	U	100	27	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
1,4-Dichlorobenzene	100	U	100	14	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
2-Butanone (MEK)	500	U	500	300	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
2-Hexanone	500	U	500	210	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
4-Methyl-2-pentanone (MIBK)	500	U	500	32	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Acetone	500	U	500	410	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Benzene	100	U	100	19	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Bromodichloromethane	100	U	100	20	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Bromoform	100	U	100	50	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Bromomethane	100	U	100	22	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Carbon disulfide	100	U	100	46	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Carbon tetrachloride	100	U	100	26	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Chlorobenzene	100	U	100	13	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Chloroethane	100	U	100	21	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Chloroform	100	U	100	69	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Chloromethane	100	U	100	24	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
cis-1,2-Dichloroethene	100	U	100	28	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
cis-1,3-Dichloropropene	100	U	100	24	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Cyclohexane	100	U	100	22	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Dibromochloromethane	100	U	100	48	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Dichlorodifluoromethane	100	U	100	44	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Ethylbenzene	100	U	100	29	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Isopropylbenzene	100	U	100	15	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
m,p-Xylene	200	U	200	55	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Methyl acetate	85.4	J	500	48	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Methyl tert-butyl ether	100	U	100	38	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Methylcyclohexane	100	U	100	47	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Methylene Chloride	100	U	100	20	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
o-Xylene	100	U	100	13	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Styrene	100	U	100	24	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Tetrachloroethene	100	U	100	13	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Toluene	100	U	100	27	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
trans-1,2-Dichloroethene	100	U	100	24	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
trans-1,3-Dichloropropene	100	U	100	9.8	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Trichloroethene	100	U	100	28	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Trichlorofluoromethane	100	U	100	47	ug/Kg		04/16/19 09:37	04/16/19 11:50	1
Vinyl chloride	100	U	100	34	ug/Kg		04/16/19 09:37	04/16/19 11:50	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	101		53 - 146	04/16/19 09:37	04/16/19 11:50	1
4-Bromofluorobenzene (Surr)	98		49 - 148	04/16/19 09:37	04/16/19 11:50	1
Toluene-d8 (Surr)	96		50 - 149	04/16/19 09:37	04/16/19 11:50	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-468129/2-A
Matrix: Waste
Analysis Batch: 468062

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468129

Surrogate	MB MB %Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	94		60 - 140	04/16/19 09:37	04/16/19 11:50	1

Lab Sample ID: LCS 480-468129/1-A
Matrix: Waste
Analysis Batch: 468062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468129

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits %Rec.
1,1,1-Trichloroethane	2500	2500		ug/Kg		100	68 - 130
1,1,2,2-Tetrachloroethane	2500	2100		ug/Kg		84	73 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	2500	2770		ug/Kg		111	10 - 179
1,1,2-Trichloroethane	2500	2180		ug/Kg		87	80 - 120
1,1-Dichloroethane	2500	2350		ug/Kg		94	78 - 121
1,1-Dichloroethene	2500	2520		ug/Kg		101	48 - 133
1,2,4-Trichlorobenzene	2500	2410		ug/Kg		96	70 - 140
1,2-Dibromo-3-Chloropropane	2500	2070		ug/Kg		83	56 - 122
1,2-Dibromoethane	2500	2190		ug/Kg		87	80 - 120
1,2-Dichlorobenzene	2500	2380		ug/Kg		95	78 - 125
1,2-Dichloroethane	2500	2350		ug/Kg		94	74 - 127
1,2-Dichloropropane	2500	2280		ug/Kg		91	80 - 120
1,3-Dichlorobenzene	2500	2380		ug/Kg		95	80 - 120
1,4-Dichlorobenzene	2500	2340		ug/Kg		94	80 - 120
2-Butanone (MEK)	12500	11000		ug/Kg		88	54 - 149
2-Hexanone	12500	10300		ug/Kg		83	59 - 127
4-Methyl-2-pentanone (MIBK)	12500	10400		ug/Kg		83	74 - 120
Acetone	12500	11600		ug/Kg		93	47 - 141
Benzene	2500	2380		ug/Kg		95	77 - 125
Bromodichloromethane	2500	2370		ug/Kg		95	71 - 121
Bromoform	2500	2410		ug/Kg		96	48 - 125
Bromomethane	2500	2350		ug/Kg		94	39 - 149
Carbon disulfide	2500	2310		ug/Kg		92	40 - 136
Carbon tetrachloride	2500	2600		ug/Kg		104	54 - 135
Chlorobenzene	2500	2320		ug/Kg		93	76 - 126
Chloroethane	2500	2580		ug/Kg		103	23 - 150
Chloroform	2500	2260		ug/Kg		90	78 - 120
Chloromethane	2500	2070		ug/Kg		83	61 - 124
cis-1,2-Dichloroethene	2500	2370		ug/Kg		95	79 - 124
cis-1,3-Dichloropropene	2500	2330		ug/Kg		93	75 - 121
Cyclohexane	2500	2680		ug/Kg		107	49 - 129
Dibromochloromethane	2500	2340		ug/Kg		94	64 - 120
Dichlorodifluoromethane	2500	2390		ug/Kg		95	10 - 150
Ethylbenzene	2500	2490		ug/Kg		99	78 - 124
Isopropylbenzene	2500	2510		ug/Kg		100	76 - 120
m,p-Xylene	2500	2450		ug/Kg		98	77 - 125
Methyl acetate	5000	4510		ug/Kg		90	71 - 123
Methyl tert-butyl ether	2500	2220		ug/Kg		89	67 - 137
Methylcyclohexane	2500	2730		ug/Kg		109	50 - 130
Methylene Chloride	2500	2260		ug/Kg		90	75 - 118
o-Xylene	2500	2370		ug/Kg		95	80 - 124

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-468129/1-A
Matrix: Waste
Analysis Batch: 468062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468129

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Styrene	2500	2360		ug/Kg		94	80 - 120
Tetrachloroethene	2500	2400		ug/Kg		96	73 - 133
Toluene	2500	2420		ug/Kg		97	75 - 124
trans-1,2-Dichloroethene	2500	2210		ug/Kg		89	74 - 129
trans-1,3-Dichloropropene	2500	2300		ug/Kg		92	73 - 120
Trichloroethene	2500	2390		ug/Kg		96	75 - 131
Trichlorofluoromethane	2500	2870		ug/Kg		115	29 - 158
Vinyl chloride	2500	2080		ug/Kg		83	59 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		53 - 146
4-Bromofluorobenzene (Surr)	100		49 - 148
Toluene-d8 (Surr)	96		50 - 149
Dibromofluoromethane (Surr)	99		60 - 140

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-467891/1-A
Matrix: Water
Analysis Batch: 468400

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 467891

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10	0.82	ug/L		04/15/19 08:27	04/17/19 21:54	1
1,2-Dichlorobenzene	10	U	10	5.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
1,2-Diphenylhydrazine	10	U	10	0.78	ug/L		04/15/19 08:27	04/17/19 21:54	1
1,3-Dichlorobenzene	10	U	10	0.69	ug/L		04/15/19 08:27	04/17/19 21:54	1
1,4-Dichlorobenzene	10	U	10	5.6	ug/L		04/15/19 08:27	04/17/19 21:54	1
2,2'-oxybis[1-chloropropane]	5.0	U	5.0	0.84	ug/L		04/15/19 08:27	04/17/19 21:54	1
2,4,6-Trichlorophenol	5.0	U	5.0	1.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
2,4-Dichlorophenol	5.0	U	5.0	0.77	ug/L		04/15/19 08:27	04/17/19 21:54	1
2,4-Dimethylphenol	5.0	U	5.0	1.4	ug/L		04/15/19 08:27	04/17/19 21:54	1
2,4-Dinitrophenol	10	U	10	5.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
2,4-Dinitrotoluene	10	U	10	5.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
2,6-Dinitrotoluene	5.0	U	5.0	1.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
2-Chloronaphthalene	5.0	U	5.0	0.91	ug/L		04/15/19 08:27	04/17/19 21:54	1
2-Chlorophenol	5.0	U	5.0	0.66	ug/L		04/15/19 08:27	04/17/19 21:54	1
2-Nitrophenol	5.0	U	5.0	0.70	ug/L		04/15/19 08:27	04/17/19 21:54	1
3,3'-Dichlorobenzidine	5.0	U	5.0	0.82	ug/L		04/15/19 08:27	04/17/19 21:54	1
4,6-Dinitro-2-methylphenol	10	U	10	0.66	ug/L		04/15/19 08:27	04/17/19 21:54	1
4-Bromophenyl phenyl ether	5.0	U	5.0	1.4	ug/L		04/15/19 08:27	04/17/19 21:54	1
4-Chloro-3-methylphenol	5.0	U	5.0	1.1	ug/L		04/15/19 08:27	04/17/19 21:54	1
4-Chlorophenyl phenyl ether	5.0	U	5.0	1.3	ug/L		04/15/19 08:27	04/17/19 21:54	1
4-Nitrophenol	15	U	15	10	ug/L		04/15/19 08:27	04/17/19 21:54	1
Acenaphthene	5.0	U	5.0	0.81	ug/L		04/15/19 08:27	04/17/19 21:54	1
Acenaphthylene	5.0	U	5.0	0.87	ug/L		04/15/19 08:27	04/17/19 21:54	1
Anthracene	5.0	U	5.0	1.4	ug/L		04/15/19 08:27	04/17/19 21:54	1
Benzidine	80	U	80	35	ug/L		04/15/19 08:27	04/17/19 21:54	1
Benzo[a]anthracene	5.0	U	5.0	1.1	ug/L		04/15/19 08:27	04/17/19 21:54	1
Benzo[a]pyrene	5.0	U	5.0	1.3	ug/L		04/15/19 08:27	04/17/19 21:54	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-467891/1-A
Matrix: Water
Analysis Batch: 468400

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 467891

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzo[b]fluoranthene	5.0	U	5.0	1.2	ug/L		04/15/19 08:27	04/17/19 21:54	1
Benzo[g,h,i]perylene	5.0	U	5.0	1.5	ug/L		04/15/19 08:27	04/17/19 21:54	1
Benzo[k]fluoranthene	5.0	U	5.0	1.3	ug/L		04/15/19 08:27	04/17/19 21:54	1
Bis(2-chloroethoxy)methane	5.0	U	5.0	0.75	ug/L		04/15/19 08:27	04/17/19 21:54	1
Bis(2-chloroethyl)ether	5.0	U	5.0	0.93	ug/L		04/15/19 08:27	04/17/19 21:54	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.2	ug/L		04/15/19 08:27	04/17/19 21:54	1
Butyl benzyl phthalate	5.0	U	5.0	1.1	ug/L		04/15/19 08:27	04/17/19 21:54	1
Chrysene	5.0	U	5.0	1.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
Dibenz(a,h)anthracene	5.0	U	5.0	1.5	ug/L		04/15/19 08:27	04/17/19 21:54	1
Diethyl phthalate	5.0	U	5.0	1.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
Dimethyl phthalate	5.0	U	5.0	0.91	ug/L		04/15/19 08:27	04/17/19 21:54	1
Di-n-butyl phthalate	5.0	U	5.0	1.6	ug/L		04/15/19 08:27	04/17/19 21:54	1
Di-n-octyl phthalate	5.0	U	5.0	1.2	ug/L		04/15/19 08:27	04/17/19 21:54	1
Fluoranthene	5.0	U	5.0	1.6	ug/L		04/15/19 08:27	04/17/19 21:54	1
Fluorene	5.0	U	5.0	1.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
Hexachlorobenzene	5.0	U	5.0	1.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
Hexachlorobutadiene	5.0	U	5.0	1.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
Hexachlorocyclopentadiene	10	U	10	5.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
Hexachloroethane	5.0	U	5.0	0.60	ug/L		04/15/19 08:27	04/17/19 21:54	1
Indeno[1,2,3-cd]pyrene	5.0	U	5.0	1.5	ug/L		04/15/19 08:27	04/17/19 21:54	1
Isophorone	5.0	U	5.0	0.74	ug/L		04/15/19 08:27	04/17/19 21:54	1
Naphthalene	5.0	U	5.0	0.86	ug/L		04/15/19 08:27	04/17/19 21:54	1
Nitrobenzene	5.0	U	5.0	0.81	ug/L		04/15/19 08:27	04/17/19 21:54	1
N-Nitrosodimethylamine	10	U	10	5.0	ug/L		04/15/19 08:27	04/17/19 21:54	1
N-Nitrosodi-n-propylamine	5.0	U	5.0	0.89	ug/L		04/15/19 08:27	04/17/19 21:54	1
N-Nitrosodiphenylamine	5.0	U	5.0	0.40	ug/L		04/15/19 08:27	04/17/19 21:54	1
Pentachlorophenol	10	U	10	1.6	ug/L		04/15/19 08:27	04/17/19 21:54	1
Phenanthrene	5.0	U	5.0	1.2	ug/L		04/15/19 08:27	04/17/19 21:54	1
Phenol	5.0	U	5.0	0.35	ug/L		04/15/19 08:27	04/17/19 21:54	1
Pyrene	5.0	U	5.0	1.4	ug/L		04/15/19 08:27	04/17/19 21:54	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	95		52 - 151	04/15/19 08:27	04/17/19 21:54	1
2-Fluorobiphenyl	86		44 - 120	04/15/19 08:27	04/17/19 21:54	1
2-Fluorophenol	49		17 - 120	04/15/19 08:27	04/17/19 21:54	1
Nitrobenzene-d5	92		15 - 314	04/15/19 08:27	04/17/19 21:54	1
Phenol-d5	35		8 - 424	04/15/19 08:27	04/17/19 21:54	1
p-Terphenyl-d14 (Surr)	88		22 - 125	04/15/19 08:27	04/17/19 21:54	1

Lab Sample ID: LCS 480-467891/2-A
Matrix: Water
Analysis Batch: 468400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichlorobenzene	50.0	30.3		ug/L		61	32 - 129
1,2-Diphenylhydrazine	50.0	48.7		ug/L		97	47 - 146
1,3-Dichlorobenzene	50.0	27.2		ug/L		54	1 - 172

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-467891/2-A
Matrix: Water
Analysis Batch: 468400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	28.4		ug/L		57	20 - 124
2,2'-oxybis[1-chloropropane]	50.0	38.8		ug/L		78	36 - 166
2,4,6-Trichlorophenol	50.0	48.8		ug/L		98	37 - 144
2,4-Dichlorophenol	50.0	46.4		ug/L		93	39 - 135
2,4-Dimethylphenol	50.0	44.0		ug/L		88	32 - 120
2,4-Dinitrophenol	100	65.6		ug/L		66	1 - 191
2,4-Dinitrotoluene	50.0	52.6		ug/L		105	39 - 139
2,6-Dinitrotoluene	50.0	50.8		ug/L		102	50 - 158
2-Chloronaphthalene	50.0	41.3		ug/L		83	60 - 120
2-Chlorophenol	50.0	37.1		ug/L		74	23 - 134
2-Nitrophenol	50.0	44.3		ug/L		89	29 - 182
3,3'-Dichlorobenzidine	100	93.9		ug/L		94	1 - 262
4,6-Dinitro-2-methylphenol	100	95.9		ug/L		96	1 - 181
4-Bromophenyl phenyl ether	50.0	49.2		ug/L		98	53 - 127
4-Chloro-3-methylphenol	50.0	45.4		ug/L		91	22 - 147
4-Chlorophenyl phenyl ether	50.0	45.7		ug/L		91	25 - 158
4-Nitrophenol	100	52.2		ug/L		52	1 - 132
Acenaphthene	50.0	44.1		ug/L		88	47 - 145
Acenaphthylene	50.0	43.3		ug/L		87	33 - 145
Anthracene	50.0	43.1		ug/L		86	27 - 133
Benzidine	100	44.4	J	ug/L		44	1 - 120
Benzo[a]anthracene	50.0	45.5		ug/L		91	33 - 143
Benzo[a]pyrene	50.0	42.5		ug/L		85	17 - 163
Benzo[b]fluoranthene	50.0	52.5		ug/L		105	24 - 159
Benzo[g,h,i]perylene	50.0	51.5		ug/L		103	1 - 219
Benzo[k]fluoranthene	50.0	42.7		ug/L		85	11 - 162
Bis(2-chloroethoxy)methane	50.0	43.8		ug/L		88	33 - 184
Bis(2-chloroethyl)ether	50.0	39.5		ug/L		79	12 - 158
Bis(2-ethylhexyl) phthalate	50.0	41.1		ug/L		82	8 - 158
Butyl benzyl phthalate	50.0	48.0		ug/L		96	1 - 152
Chrysene	50.0	42.5		ug/L		85	17 - 168
Dibenz(a,h)anthracene	50.0	45.8		ug/L		92	1 - 227
Diethyl phthalate	50.0	49.2		ug/L		98	1 - 120
Dimethyl phthalate	50.0	47.4		ug/L		95	1 - 120
Di-n-butyl phthalate	50.0	41.5		ug/L		83	1 - 120
Di-n-octyl phthalate	50.0	39.1		ug/L		78	4 - 146
Fluoranthene	50.0	42.0		ug/L		84	26 - 137
Fluorene	50.0	46.0		ug/L		92	59 - 121
Hexachlorobenzene	50.0	50.9		ug/L		102	1 - 152
Hexachlorobutadiene	50.0	27.0		ug/L		54	24 - 120
Hexachlorocyclopentadiene	50.0	32.2		ug/L		64	5 - 120
Hexachloroethane	50.0	25.2		ug/L		50	40 - 120
Indeno[1,2,3-cd]pyrene	50.0	50.0		ug/L		100	1 - 171
Isophorone	50.0	46.3		ug/L		93	21 - 196
Naphthalene	50.0	35.2		ug/L		70	21 - 133
Nitrobenzene	50.0	42.5		ug/L		85	35 - 180
N-Nitrosodimethylamine	50.0	29.1		ug/L		58	19 - 120
N-Nitrosodi-n-propylamine	50.0	42.7		ug/L		85	1 - 230
N-Nitrosodiphenylamine	50.0	51.1		ug/L		102	54 - 125

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-467891/2-A
Matrix: Water
Analysis Batch: 468400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	100	82.2		ug/L		82	14 - 176
Phenanthrene	50.0	46.3		ug/L		93	54 - 120
Phenol	50.0	17.1		ug/L		34	5 - 120
Pyrene	50.0	45.1		ug/L		90	52 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	103		52 - 151
2-Fluorobiphenyl	82		44 - 120
2-Fluorophenol	47		17 - 120
Nitrobenzene-d5	86		15 - 314
Phenol-d5	32		8 - 424
p-Terphenyl-d14 (Surr)	86		22 - 125

Lab Sample ID: LCSD 480-467891/3-A
Matrix: Water
Analysis Batch: 468400

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 467891

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	50.0	33.2		ug/L		66	44 - 142	1	34
1,2-Dichlorobenzene	50.0	29.5		ug/L		59	32 - 129	3	38
1,2-Diphenylhydrazine	50.0	48.3		ug/L		97	47 - 146	1	20
1,3-Dichlorobenzene	50.0	27.2		ug/L		54	1 - 172	0	37
1,4-Dichlorobenzene	50.0	28.1		ug/L		56	20 - 124	1	40
2,2'-oxybis[1-chloropropane]	50.0	41.6		ug/L		83	36 - 166	7	36
2,4,6-Trichlorophenol	50.0	50.4		ug/L		101	37 - 144	3	20
2,4-Dichlorophenol	50.0	44.7		ug/L		89	39 - 135	4	23
2,4-Dimethylphenol	50.0	42.7		ug/L		85	32 - 120	3	18
2,4-Dinitrophenol	100	75.8		ug/L		76	1 - 191	14	29
2,4-Dinitrotoluene	50.0	49.6		ug/L		99	39 - 139	6	20
2,6-Dinitrotoluene	50.0	50.1		ug/L		100	50 - 158	1	17
2-Chloronaphthalene	50.0	41.1		ug/L		82	60 - 120	0	30
2-Chlorophenol	50.0	37.2		ug/L		74	23 - 134	0	26
2-Nitrophenol	50.0	43.4		ug/L		87	29 - 182	2	28
3,3'-Dichlorobenzidine	100	96.3		ug/L		96	1 - 262	3	31
4,6-Dinitro-2-methylphenol	100	96.4		ug/L		96	1 - 181	1	30
4-Bromophenyl phenyl ether	50.0	49.2		ug/L		98	53 - 127	0	16
4-Chloro-3-methylphenol	50.0	45.4		ug/L		91	22 - 147	0	16
4-Chlorophenyl phenyl ether	50.0	47.0		ug/L		94	25 - 158	3	15
4-Nitrophenol	100	52.9		ug/L		53	1 - 132	1	24
Acenaphthene	50.0	43.9		ug/L		88	47 - 145	1	25
Acenaphthylene	50.0	44.0		ug/L		88	33 - 145	2	22
Anthracene	50.0	43.8		ug/L		88	27 - 133	2	15
Benzidine	100	46.9	J	ug/L		47	1 - 120	5	50
Benzo[a]anthracene	50.0	48.4		ug/L		97	33 - 143	6	15
Benzo[a]pyrene	50.0	41.9		ug/L		84	17 - 163	1	15
Benzo[b]fluoranthene	50.0	53.8		ug/L		108	24 - 159	2	17
Benzo[g,h,i]perylene	50.0	52.8		ug/L		106	1 - 219	3	19
Benzo[k]fluoranthene	50.0	42.1		ug/L		84	11 - 162	1	19

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-467891/3-A
Matrix: Water
Analysis Batch: 468400

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 467891

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bis(2-chloroethoxy)methane	50.0	42.1		ug/L		84	33 - 184	4	23
Bis(2-chloroethyl)ether	50.0	41.1		ug/L		82	12 - 158	4	33
Bis(2-ethylhexyl) phthalate	50.0	42.8		ug/L		86	8 - 158	4	15
Butyl benzyl phthalate	50.0	50.0		ug/L		100	1 - 152	4	15
Chrysene	50.0	43.4		ug/L		87	17 - 168	2	15
Dibenz(a,h)anthracene	50.0	47.1		ug/L		94	1 - 227	3	18
Diethyl phthalate	50.0	48.8		ug/L		98	1 - 120	1	15
Dimethyl phthalate	50.0	47.3		ug/L		95	1 - 120	0	15
Di-n-butyl phthalate	50.0	41.9		ug/L		84	1 - 120	1	15
Di-n-octyl phthalate	50.0	42.2		ug/L		84	4 - 146	8	15
Fluoranthene	50.0	42.0		ug/L		84	26 - 137	0	15
Fluorene	50.0	45.3		ug/L		91	59 - 121	1	18
Hexachlorobenzene	50.0	51.9		ug/L		104	1 - 152	2	15
Hexachlorobutadiene	50.0	27.3		ug/L		55	24 - 120	1	50
Hexachlorocyclopentadiene	50.0	30.9		ug/L		62	5 - 120	4	50
Hexachloroethane	50.0	25.1		ug/L		50	40 - 120	0	43
Indeno[1,2,3-cd]pyrene	50.0	51.6		ug/L		103	1 - 171	3	17
Isophorone	50.0	45.7		ug/L		91	21 - 196	1	21
Naphthalene	50.0	35.0		ug/L		70	21 - 133	0	31
Nitrobenzene	50.0	41.1		ug/L		82	35 - 180	3	27
N-Nitrosodimethylamine	50.0	28.2		ug/L		56	19 - 120	3	22
N-Nitrosodi-n-propylamine	50.0	46.2		ug/L		92	1 - 230	8	23
N-Nitrosodiphenylamine	50.0	49.8		ug/L		100	54 - 125	3	15
Pentachlorophenol	100	83.9		ug/L		84	14 - 176	2	21
Phenanthrene	50.0	46.9		ug/L		94	54 - 120	1	16
Phenol	50.0	17.4		ug/L		35	5 - 120	2	36
Pyrene	50.0	47.5		ug/L		95	52 - 120	5	15

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2,4,6-Tribromophenol	95		52 - 151
2-Fluorobiphenyl	82		44 - 120
2-Fluorophenol	47		17 - 120
Nitrobenzene-d5	83		15 - 314
Phenol-d5	33		8 - 424
p-Terphenyl-d14 (Surr)	90		22 - 125

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-468844/1-A
Matrix: Waste
Analysis Batch: 469125

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468844

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	99000	U	99000	7800	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2,4-Dinitrotoluene	51000	U	51000	11000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2,4,5-Trichlorophenol	51000	U	51000	14000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2,4,6-Trichlorophenol	51000	U	51000	10000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2-Methylphenol	51000	U	51000	6000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
3-Methylphenol	99000	U	99000	7800	ug/Kg		04/19/19 12:31	04/22/19 22:19	1

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QC Sample Results

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-468844/1-A
Matrix: Waste
Analysis Batch: 469125

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468844

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
4-Methylphenol	99000	U	99000	6000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Hexachlorobenzene	51000	U	51000	6900	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Hexachlorobutadiene	51000	U	51000	7500	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Hexachloroethane	51000	U	51000	6600	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Nitrobenzene	51000	U	51000	5700	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Pentachlorophenol	99000	U	99000	51000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Pyridine	99000	U	99000	7200	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Dimethyl phthalate	51000	U	51000	6000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2,4-Dimethylphenol	51000	U	51000	12000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Isophorone	51000	U	51000	11000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Fluorene	51000	U	51000	6000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Dibenzofuran	51000	U	51000	6000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Bis(2-ethylhexyl) phthalate	51000	U	51000	17000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
N-Nitrosodi-n-propylamine	51000	U	51000	8700	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Acenaphthylene	51000	U	51000	6600	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2,4-Dichlorophenol	51000	U	51000	5400	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
4-Chlorophenyl phenyl ether	51000	U	51000	6300	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Benzo[g,h,i]perylene	51000	U	51000	5400	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
4-Chloro-3-methylphenol	51000	U	51000	13000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Di-n-octyl phthalate	51000	U	51000	6000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Phenanthrene	51000	U	51000	7500	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2-Nitrophenol	51000	U	51000	14000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Benzo[k]fluoranthene	51000	U	51000	6600	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Benzo[a]pyrene	51000	U	51000	7500	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2,4-Dinitrophenol	500000	U	500000	240000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Anthracene	51000	U	51000	13000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2-Methylnaphthalene	51000	U	51000	10000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Di-n-butyl phthalate	51000	U	51000	8700	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Pyrene	51000	U	51000	6000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Dibenz(a,h)anthracene	51000	U	51000	9000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
4-Nitroaniline	99000	U	99000	27000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Naphthalene	51000	U	51000	6600	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Fluoranthene	51000	U	51000	5400	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
3,3'-Dichlorobenzidine	99000	U	99000	60000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2-Nitroaniline	99000	U	99000	7500	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
4-Bromophenyl phenyl ether	51000	U	51000	7200	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Caprolactam	51000	U	51000	15000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Diethyl phthalate	51000	U	51000	6600	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Carbazole	51000	U	51000	6000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
4,6-Dinitro-2-methylphenol	99000	U	99000	51000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
bis (2-chloroisopropyl) ether	51000	U	51000	10000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
N-Nitrosodiphenylamine	51000	U	51000	41000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Acetophenone	51000	U	51000	6900	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Bis(2-chloroethyl)ether	51000	U	51000	6600	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Atrazine	51000	U	51000	18000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Benzo[a]anthracene	51000	U	51000	5100	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Indeno[1,2,3-cd]pyrene	51000	U	51000	6300	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Benzaldehyde	51000	U	51000	41000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Butyl benzyl phthalate	51000	U	51000	8400	ug/Kg		04/19/19 12:31	04/22/19 22:19	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-468844/1-A
Matrix: Waste
Analysis Batch: 469125

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468844

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Hexachlorocyclopentadiene	51000	U	51000	6900	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Chrysene	51000	U	51000	11000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Acenaphthene	51000	U	51000	7500	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Benzo[b]fluoranthene	51000	U	51000	8100	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
4-Nitrophenol	99000	U	99000	36000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
4-Chloroaniline	51000	U	51000	13000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2-Chlorophenol	51000	U	51000	9300	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
3-Nitroaniline	99000	U	99000	14000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2,6-Dinitrotoluene	51000	U	51000	6000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Biphenyl	51000	U	51000	7500	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Phenol	51000	U	51000	7800	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
Bis(2-chloroethoxy)methane	51000	U	51000	11000	ug/Kg		04/19/19 12:31	04/22/19 22:19	1
2-Chloronaphthalene	51000	U	51000	8400	ug/Kg		04/19/19 12:31	04/22/19 22:19	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol (Surr)	91		54 - 120	04/19/19 12:31	04/22/19 22:19	1
2-Fluorobiphenyl	93		60 - 120	04/19/19 12:31	04/22/19 22:19	1
2-Fluorophenol (Surr)	103		52 - 120	04/19/19 12:31	04/22/19 22:19	1
Nitrobenzene-d5 (Surr)	101		53 - 120	04/19/19 12:31	04/22/19 22:19	1
p-Terphenyl-d14 (Surr)	89		65 - 121	04/19/19 12:31	04/22/19 22:19	1
Phenol-d5 (Surr)	101		54 - 120	04/19/19 12:31	04/22/19 22:19	1

Lab Sample ID: LCS 480-468844/2-A
Matrix: Waste
Analysis Batch: 469125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468844

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,4-Dinitrotoluene	500000	547000		ug/Kg		109	63 - 120
2,4,5-Trichlorophenol	500000	567000		ug/Kg		113	59 - 126
2,4,6-Trichlorophenol	500000	546000		ug/Kg		109	59 - 123
2-Methylphenol	500000	522000		ug/Kg		104	54 - 120
3-Methylphenol	500000	523000		ug/Kg		105	55 - 120
4-Methylphenol	500000	523000		ug/Kg		105	55 - 120
Hexachlorobenzene	500000	543000		ug/Kg		109	60 - 120
Hexachlorobutadiene	500000	501000		ug/Kg		100	45 - 120
Hexachloroethane	500000	497000		ug/Kg		99	41 - 120
Nitrobenzene	500000	540000		ug/Kg		108	54 - 120
Pentachlorophenol	1000000	783000		ug/Kg		78	51 - 120
Pyridine	1000000	1190000		ug/Kg		119	23 - 120
Dimethyl phthalate	500000	526000		ug/Kg		105	65 - 124
2,4-Dimethylphenol	500000	544000		ug/Kg		109	59 - 120
Isophorone	500000	553000		ug/Kg		111	56 - 120
Fluorene	500000	528000		ug/Kg		106	63 - 120
Dibenzofuran	500000	484000		ug/Kg		97	63 - 120
Bis(2-ethylhexyl) phthalate	500000	513000		ug/Kg		103	61 - 133
N-Nitrosodi-n-propylamine	500000	550000		ug/Kg		110	52 - 120
Acenaphthylene	500000	506000		ug/Kg		101	58 - 121

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-468844/2-A
Matrix: Waste
Analysis Batch: 469125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468844

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dichlorophenol	500000	524000		ug/Kg		105	61 - 120
4-Chlorophenyl phenyl ether	500000	532000		ug/Kg		106	63 - 124
Benzo[g,h,i]perylene	500000	553000		ug/Kg		111	45 - 145
4-Chloro-3-methylphenol	500000	541000		ug/Kg		108	61 - 120
Di-n-octyl phthalate	500000	494000		ug/Kg		99	57 - 133
Phenanthrene	500000	508000		ug/Kg		102	60 - 120
2-Nitrophenol	500000	522000		ug/Kg		104	56 - 120
Benzo[k]fluoranthene	500000	473000		ug/Kg		95	65 - 120
Benzo[a]pyrene	500000	450000		ug/Kg		90	64 - 120
2,4-Dinitrophenol	1000000	1020000		ug/Kg		102	41 - 146
Anthracene	500000	481000		ug/Kg		96	62 - 120
2-Methylnaphthalene	500000	502000		ug/Kg		100	59 - 120
Di-n-butyl phthalate	500000	462000		ug/Kg		92	58 - 130
Pyrene	500000	521000		ug/Kg		104	61 - 133
Dibenz(a,h)anthracene	500000	485000		ug/Kg		97	54 - 132
4-Nitroaniline	500000	583000		ug/Kg		117	56 - 120
Naphthalene	500000	478000		ug/Kg		96	55 - 120
Fluoranthene	500000	454000		ug/Kg		91	62 - 120
3,3'-Dichlorobenzidine	1000000	1030000		ug/Kg		103	54 - 120
2-Nitroaniline	500000	586000		ug/Kg		117	61 - 120
4-Bromophenyl phenyl ether	500000	539000		ug/Kg		108	58 - 120
Caprolactam	1000000	1050000		ug/Kg		105	47 - 120
Diethyl phthalate	500000	543000		ug/Kg		109	66 - 120
Carbazole	500000	521000		ug/Kg		104	65 - 120
4,6-Dinitro-2-methylphenol	1000000	1170000		ug/Kg		117	49 - 122
bis (2-chloroisopropyl) ether	500000	580000		ug/Kg		116	44 - 120
N-Nitrosodiphenylamine	500000	564000		ug/Kg		113	51 - 128
Acetophenone	500000	509000		ug/Kg		102	54 - 120
Bis(2-chloroethyl)ether	500000	552000		ug/Kg		110	45 - 120
Atrazine	1000000	1140000		ug/Kg		114	60 - 127
Benzo[a]anthracene	500000	526000		ug/Kg		105	65 - 120
Indeno[1,2,3-cd]pyrene	500000	535000		ug/Kg		107	56 - 134
Benzaldehyde	1000000	1020000		ug/Kg		102	10 - 150
Butyl benzyl phthalate	500000	562000		ug/Kg		112	61 - 129
Hexachlorocyclopentadiene	500000	543000		ug/Kg		109	47 - 120
Chrysene	500000	484000		ug/Kg		97	64 - 120
Acenaphthene	500000	525000		ug/Kg		105	62 - 120
Benzo[b]fluoranthene	500000	554000		ug/Kg		111	64 - 120
4-Nitrophenol	1000000	1010000		ug/Kg		101	43 - 147
4-Chloroaniline	500000	480000		ug/Kg		96	38 - 120
2-Chlorophenol	500000	513000		ug/Kg		103	53 - 120
3-Nitroaniline	500000	506000		ug/Kg		101	48 - 120
2,6-Dinitrotoluene	500000	561000		ug/Kg		112	66 - 120
Biphenyl	500000	496000		ug/Kg		99	59 - 120
Phenol	500000	519000		ug/Kg		104	53 - 120
Bis(2-chloroethoxy)methane	500000	544000		ug/Kg		109	55 - 120
2-Chloronaphthalene	500000	515000		ug/Kg		103	57 - 120

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-468844/2-A
Matrix: Waste
Analysis Batch: 469125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468844

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol (Surr)	106		54 - 120
2-Fluorobiphenyl	98		60 - 120
2-Fluorophenol (Surr)	105		52 - 120
Nitrobenzene-d5 (Surr)	105		53 - 120
p-Terphenyl-d14 (Surr)	95		65 - 121
Phenol-d5 (Surr)	102		54 - 120

Lab Sample ID: LCSD 480-468844/3-A
Matrix: Waste
Analysis Batch: 469125

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 468844

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
1,4-Dichlorobenzene	500000	478000		ug/Kg		96	48 - 120	1	35	
2,4-Dinitrotoluene	500000	570000		ug/Kg		114	63 - 120	4	20	
2,4,5-Trichlorophenol	500000	569000		ug/Kg		114	59 - 126	0	18	
2,4,6-Trichlorophenol	500000	571000		ug/Kg		114	59 - 123	4	19	
2-Methylphenol	500000	551000		ug/Kg		110	54 - 120	5	27	
3-Methylphenol	500000	558000		ug/Kg		112	55 - 120	6	24	
4-Methylphenol	500000	558000		ug/Kg		112	55 - 120	6	24	
Hexachlorobenzene	500000	561000		ug/Kg		112	60 - 120	3	15	
Hexachlorobutadiene	500000	478000		ug/Kg		96	45 - 120	5	44	
Hexachloroethane	500000	506000		ug/Kg		101	41 - 120	2	46	
Nitrobenzene	500000	547000		ug/Kg		109	54 - 120	1	24	
Pentachlorophenol	1000000	862000		ug/Kg		86	51 - 120	10	35	
Pyridine	1000000	1180000		ug/Kg		118	23 - 120	1	49	
Dimethyl phthalate	500000	552000		ug/Kg		110	65 - 124	5	15	
2,4-Dimethylphenol	500000	566000		ug/Kg		113	59 - 120	4	42	
Isophorone	500000	574000		ug/Kg		115	56 - 120	4	17	
Fluorene	500000	545000		ug/Kg		109	63 - 120	3	15	
Dibenzofuran	500000	515000		ug/Kg		103	63 - 120	6	15	
Bis(2-ethylhexyl) phthalate	500000	521000		ug/Kg		104	61 - 133	2	15	
N-Nitrosodi-n-propylamine	500000	575000		ug/Kg		115	52 - 120	4	31	
Acenaphthylene	500000	524000		ug/Kg		105	58 - 121	3	18	
2,4-Dichlorophenol	500000	558000		ug/Kg		112	61 - 120	6	19	
4-Chlorophenyl phenyl ether	500000	531000		ug/Kg		106	63 - 124	0	16	
Benzo[g,h,i]perylene	500000	611000		ug/Kg		122	45 - 145	10	15	
4-Chloro-3-methylphenol	500000	550000		ug/Kg		110	61 - 120	2	27	
Di-n-octyl phthalate	500000	503000		ug/Kg		101	57 - 133	2	16	
Phenanthrene	500000	533000		ug/Kg		107	60 - 120	5	15	
2-Nitrophenol	500000	547000		ug/Kg		109	56 - 120	5	18	
Benzo[k]fluoranthene	500000	539000		ug/Kg		108	65 - 120	13	22	
Benzo[a]pyrene	500000	484000		ug/Kg		97	64 - 120	7	15	
2,4-Dinitrophenol	1000000	1040000		ug/Kg		104	41 - 146	2	22	
Anthracene	500000	504000		ug/Kg		101	62 - 120	5	15	
2-Methylnaphthalene	500000	508000		ug/Kg		102	59 - 120	1	21	
Di-n-butyl phthalate	500000	487000		ug/Kg		97	58 - 130	5	15	
Pyrene	500000	543000		ug/Kg		109	61 - 133	4	35	
Dibenz(a,h)anthracene	500000	518000		ug/Kg		104	54 - 132	6	15	

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-468844/3-A
Matrix: Waste
Analysis Batch: 469125

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 468844

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Nitroaniline	500000	584000		ug/Kg		117	56 - 120	0	24
Naphthalene	500000	477000		ug/Kg		95	55 - 120	0	29
Fluoranthene	500000	494000		ug/Kg		99	62 - 120	8	15
3,3'-Dichlorobenzidine	1000000	1050000		ug/Kg		105	54 - 120	1	25
2-Nitroaniline	500000	620000	*	ug/Kg		124	61 - 120	6	15
4-Bromophenyl phenyl ether	500000	531000		ug/Kg		106	58 - 120	2	15
Caprolactam	1000000	1100000		ug/Kg		110	47 - 120	5	20
Diethyl phthalate	500000	563000		ug/Kg		113	66 - 120	4	15
Carbazole	500000	559000		ug/Kg		112	65 - 120	7	20
4,6-Dinitro-2-methylphenol	1000000	1250000	*	ug/Kg		125	49 - 122	7	15
bis (2-chloroisopropyl) ether	500000	606000	*	ug/Kg		121	44 - 120	4	24
N-Nitrosodiphenylamine	500000	573000		ug/Kg		115	51 - 128	2	15
Acetophenone	500000	528000		ug/Kg		106	54 - 120	4	20
Bis(2-chloroethyl)ether	500000	564000		ug/Kg		113	45 - 120	2	21
Atrazine	1000000	1180000		ug/Kg		118	60 - 127	4	20
Benzo[a]anthracene	500000	536000		ug/Kg		107	65 - 120	2	15
Indeno[1,2,3-cd]pyrene	500000	579000		ug/Kg		116	56 - 134	8	15
Benzaldehyde	1000000	1090000		ug/Kg		109	10 - 150	7	20
Butyl benzyl phthalate	500000	588000		ug/Kg		118	61 - 129	5	16
Hexachlorocyclopentadiene	500000	537000		ug/Kg		107	47 - 120	1	49
Chrysene	500000	505000		ug/Kg		101	64 - 120	4	15
Acenaphthene	500000	542000		ug/Kg		108	62 - 120	3	35
Benzo[b]fluoranthene	500000	544000		ug/Kg		109	64 - 120	2	15
4-Nitrophenol	1000000	1040000		ug/Kg		104	43 - 147	2	25
4-Chloroaniline	500000	506000		ug/Kg		101	38 - 120	5	22
2-Chlorophenol	500000	534000		ug/Kg		107	53 - 120	4	25
3-Nitroaniline	500000	523000		ug/Kg		105	48 - 120	3	19
2,6-Dinitrotoluene	500000	598000		ug/Kg		120	66 - 120	6	15
Biphenyl	500000	509000		ug/Kg		102	59 - 120	3	20
Phenol	500000	524000		ug/Kg		105	53 - 120	1	35
Bis(2-chloroethoxy)methane	500000	560000		ug/Kg		112	55 - 120	3	17
2-Chloronaphthalene	500000	526000		ug/Kg		105	57 - 120	2	21

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2,4,6-Tribromophenol (Surr)	109		54 - 120
2-Fluorobiphenyl	97		60 - 120
2-Fluorophenol (Surr)	109		52 - 120
Nitrobenzene-d5 (Surr)	108		53 - 120
p-Terphenyl-d14 (Surr)	99		65 - 121
Phenol-d5 (Surr)	106		54 - 120

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 480-468299/1-A
Matrix: Water
Analysis Batch: 468765

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468299

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.060	U	0.060	0.038	ug/L		04/17/19 08:19	04/19/19 10:48	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Lab Sample ID: MB 480-468299/1-A
Matrix: Water
Analysis Batch: 468765

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468299

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-1221	0.060	U	0.060	0.038	ug/L		04/17/19 08:19	04/19/19 10:48	1
PCB-1232	0.060	U	0.060	0.038	ug/L		04/17/19 08:19	04/19/19 10:48	1
PCB-1242	0.060	U	0.060	0.038	ug/L		04/17/19 08:19	04/19/19 10:48	1
PCB-1248	0.060	U	0.060	0.038	ug/L		04/17/19 08:19	04/19/19 10:48	1
PCB-1254	0.060	U	0.060	0.031	ug/L		04/17/19 08:19	04/19/19 10:48	1
PCB-1260	0.060	U	0.060	0.031	ug/L		04/17/19 08:19	04/19/19 10:48	1
PCB-1262	0.060	U	0.060	0.031	ug/L		04/17/19 08:19	04/19/19 10:48	1
PCB-1268	0.060	U	0.060	0.031	ug/L		04/17/19 08:19	04/19/19 10:48	1
Polychlorinated biphenyls, Total	0.060	U	0.060	0.038	ug/L		04/17/19 08:19	04/19/19 10:48	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	39		36 - 121	04/17/19 08:19	04/19/19 10:48	1
Tetrachloro-m-xylene (Surr)	67		42 - 135	04/17/19 08:19	04/19/19 10:48	1

Lab Sample ID: LCS 480-468299/2-A
Matrix: Water
Analysis Batch: 468765

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468299

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
PCB-1016	1.00	0.947		ug/L		95	69 - 123
PCB-1260	1.00	0.741		ug/L		74	69 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	39		36 - 121
Tetrachloro-m-xylene (Surr)	78		42 - 135

Lab Sample ID: LCSD 480-468299/3-A
Matrix: Water
Analysis Batch: 468765

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 468299

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	Limits	RPD	Limit
		Result	Qualifier						
PCB-1016	1.00	0.971		ug/L		97	69 - 123	2	30
PCB-1260	1.00	0.768		ug/L		77	69 - 120	4	30

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	40		36 - 121
Tetrachloro-m-xylene (Surr)	76		42 - 135

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 480-468846/1-A
Matrix: Waste
Analysis Batch: 469266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468846

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlordane (technical)	5.0	U	5.0	2.0	mg/Kg		04/19/19 12:35	04/23/19 16:23	1
Endrin	0.50	U	0.50	0.16	mg/Kg		04/19/19 12:35	04/23/19 16:23	1
gamma-BHC (Lindane)	0.50	U	0.50	0.36	mg/Kg		04/19/19 12:35	04/23/19 16:23	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 480-468846/1-A
Matrix: Waste
Analysis Batch: 469266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468846

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Heptachlor	0.50	U	0.50	0.078	mg/Kg		04/19/19 12:35	04/23/19 16:23	1
Heptachlor epoxide	0.50	U	0.50	0.13	mg/Kg		04/19/19 12:35	04/23/19 16:23	1
Methoxychlor	0.50	U	0.50	0.13	mg/Kg		04/19/19 12:35	04/23/19 16:23	1
Toxaphene	5.0	U	5.0	2.9	mg/Kg		04/19/19 12:35	04/23/19 16:23	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	135	X	45 - 120	04/19/19 12:35	04/23/19 16:23	1
Tetrachloro-m-xylene	58		30 - 124	04/19/19 12:35	04/23/19 16:23	1

Lab Sample ID: LCS 480-468846/2-A
Matrix: Waste
Analysis Batch: 469266

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468846

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Endrin	5.00	3.97		mg/Kg		79	58 - 120
gamma-BHC (Lindane)	5.00	3.50		mg/Kg		70	50 - 120
Heptachlor	5.00	3.45		mg/Kg		69	50 - 120
Heptachlor epoxide	5.00	4.15		mg/Kg		83	50 - 120
Methoxychlor	5.00	3.38		mg/Kg		68	58 - 133

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	88		45 - 120
Tetrachloro-m-xylene	57		30 - 124

Lab Sample ID: LCSD 480-468846/3-A
Matrix: Waste
Analysis Batch: 469266

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 468846

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
		Result	Qualifier						
Endrin	5.00	3.70		mg/Kg		74	58 - 120	7	19
gamma-BHC (Lindane)	5.00	3.35		mg/Kg		67	50 - 120	4	20
Heptachlor	5.00	3.17		mg/Kg		63	50 - 120	8	16
Heptachlor epoxide	5.00	4.10		mg/Kg		82	50 - 120	1	17
Methoxychlor	5.00	3.06		mg/Kg		61	58 - 133	10	14

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	90		45 - 120
Tetrachloro-m-xylene	57		30 - 124

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 480-469296/1-A
Matrix: Waste
Analysis Batch: 469795

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469296

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-1016	4.2	U	4.2	0.82	mg/Kg		04/23/19 12:04	04/25/19 18:56	1
PCB-1221	4.2	U	4.2	0.82	mg/Kg		04/23/19 12:04	04/25/19 18:56	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 480-469296/1-A
Matrix: Waste
Analysis Batch: 469795

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469296

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-1232	4.2	U	4.2	0.82	mg/Kg		04/23/19 12:04	04/25/19 18:56	1
PCB-1242	4.2	U	4.2	0.82	mg/Kg		04/23/19 12:04	04/25/19 18:56	1
PCB-1248	4.2	U	4.2	0.82	mg/Kg		04/23/19 12:04	04/25/19 18:56	1
PCB-1254	4.2	U	4.2	0.20	mg/Kg		04/23/19 12:04	04/25/19 18:56	1
PCB-1260	4.2	U	4.2	0.20	mg/Kg		04/23/19 12:04	04/25/19 18:56	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	50	X	60 - 154	04/23/19 12:04	04/25/19 18:56	1
DCB Decachlorobiphenyl	78		65 - 174	04/23/19 12:04	04/25/19 18:56	1

Lab Sample ID: LCS 480-469296/2-A
Matrix: Waste
Analysis Batch: 469795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469296

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
PCB-1016	41.7	26.7		mg/Kg		64	51 - 185
PCB-1260	41.7	30.7		mg/Kg		74	61 - 184

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	65		60 - 154
DCB Decachlorobiphenyl	90		65 - 174

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 240-377980/6-A
Matrix: Waste
Analysis Batch: 378243

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 377980

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4-D	240	U	240	49	ug/Kg		04/24/19 08:33	04/25/19 16:21	1
2,4,5-T	60	U	60	13	ug/Kg		04/24/19 08:33	04/25/19 16:21	1
Silvex (2,4,5-TP)	60	U	60	14	ug/Kg		04/24/19 08:33	04/25/19 16:21	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4-Dichlorophenylacetic acid	72		15 - 120	04/24/19 08:33	04/25/19 16:21	1
2,4-Dichlorophenylacetic acid	65		15 - 120	04/24/19 08:33	04/25/19 16:21	1

Lab Sample ID: LCS 240-377980/7-A
Matrix: Waste
Analysis Batch: 378243

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 377980

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
2,4-D	1000	892		ug/Kg		89	31 - 149
2,4,5-T	250	227		ug/Kg		91	30 - 156
Silvex (2,4,5-TP)	250	233		ug/Kg		93	26 - 151

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4-Dichlorophenylacetic acid	84		15 - 120

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 240-377980/7-A
Matrix: Waste
Analysis Batch: 378243

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 377980

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4-Dichlorophenylacetic acid	82		15 - 120

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 480-468172/1-A
Matrix: Water
Analysis Batch: 468933

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468172

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	0.020	U	0.020	0.0068	mg/L		04/17/19 07:47	04/19/19 10:29	1
Arsenic	0.015	U	0.015	0.0056	mg/L		04/17/19 07:47	04/19/19 10:29	1
Beryllium	0.0020	U	0.0020	0.00030	mg/L		04/17/19 07:47	04/19/19 10:29	1
Cadmium	0.0020	U	0.0020	0.00050	mg/L		04/17/19 07:47	04/19/19 10:29	1
Chromium	0.0040	U	0.0040	0.0010	mg/L		04/17/19 07:47	04/19/19 10:29	1
Copper	0.010	U	0.010	0.0016	mg/L		04/17/19 07:47	04/19/19 10:29	1
Lead	0.010	U	0.010	0.0030	mg/L		04/17/19 07:47	04/19/19 10:29	1
Nickel	0.010	U	0.010	0.0013	mg/L		04/17/19 07:47	04/19/19 10:29	1
Selenium	0.025	U	0.025	0.0087	mg/L		04/17/19 07:47	04/19/19 10:29	1
Silver	0.0060	U	0.0060	0.0017	mg/L		04/17/19 07:47	04/19/19 10:29	1
Thallium	0.020	U	0.020	0.010	mg/L		04/17/19 07:47	04/19/19 10:29	1
Zinc	0.010	U	0.010	0.0015	mg/L		04/17/19 07:47	04/19/19 10:29	1

Lab Sample ID: LCS 480-468172/2-A
Matrix: Water
Analysis Batch: 468933

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468172

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Antimony	0.200	0.188		mg/L		94	85 - 115
Arsenic	0.200	0.191		mg/L		95	85 - 115
Beryllium	0.200	0.202		mg/L		101	85 - 115
Cadmium	0.200	0.188		mg/L		94	85 - 115
Chromium	0.200	0.192		mg/L		96	85 - 115
Copper	0.200	0.190		mg/L		95	85 - 115
Lead	0.200	0.186		mg/L		93	85 - 115
Nickel	0.200	0.188		mg/L		94	85 - 115
Selenium	0.200	0.192		mg/L		96	85 - 115
Silver	0.0500	0.0496		mg/L		99	85 - 115
Thallium	0.200	0.193		mg/L		96	85 - 115
Zinc	0.200	0.196		mg/L		98	85 - 115

Lab Sample ID: 480-151896-3 MS
Matrix: Water
Analysis Batch: 468933

Client Sample ID: TANK 2-04112019
Prep Type: Total/NA
Prep Batch: 468172

Analyte	Sample Sample		Spike Added	MS MS		Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
Antimony	0.020	U	0.200	0.190		mg/L		95	70 - 130
Arsenic	0.015	U	0.200	0.193		mg/L		97	70 - 130
Beryllium	0.0020	U	0.200	0.205		mg/L		102	70 - 130
Cadmium	0.0020	U	0.200	0.189		mg/L		95	70 - 130

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QC Sample Results

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 480-151896-3 MS
Matrix: Water
Analysis Batch: 468933

Client Sample ID: TANK 2-04112019
Prep Type: Total/NA
Prep Batch: 468172

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	
Chromium	0.0040	U	0.200	0.195		mg/L		98	70 - 130	
Copper	0.010	U	0.200	0.192		mg/L		96	70 - 130	
Lead	0.010	U	0.200	0.186		mg/L		93	70 - 130	
Nickel	0.0014	J	0.200	0.190		mg/L		94	70 - 130	
Selenium	0.025	U	0.200	0.195		mg/L		97	70 - 130	
Silver	0.0060	U	0.0500	0.0488		mg/L		98	70 - 130	
Thallium	0.020	U	0.200	0.195		mg/L		97	70 - 130	
Zinc	0.0024	J	0.200	0.200		mg/L		99	70 - 130	

Lab Sample ID: 480-151896-3 MSD
Matrix: Water
Analysis Batch: 468933

Client Sample ID: TANK 2-04112019
Prep Type: Total/NA
Prep Batch: 468172

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	
Antimony	0.020	U	0.200	0.191		mg/L		95	70 - 130	0	20	
Arsenic	0.015	U	0.200	0.194		mg/L		97	70 - 130	0	20	
Beryllium	0.0020	U	0.200	0.205		mg/L		102	70 - 130	0	20	
Cadmium	0.0020	U	0.200	0.190		mg/L		95	70 - 130	0	20	
Chromium	0.0040	U	0.200	0.195		mg/L		97	70 - 130	0	20	
Copper	0.010	U	0.200	0.192		mg/L		96	70 - 130	0	20	
Lead	0.010	U	0.200	0.187		mg/L		94	70 - 130	1	20	
Nickel	0.0014	J	0.200	0.191		mg/L		95	70 - 130	1	20	
Selenium	0.025	U	0.200	0.195		mg/L		97	70 - 130	0	20	
Silver	0.0060	U	0.0500	0.0480		mg/L		96	70 - 130	2	20	
Thallium	0.020	U	0.200	0.196		mg/L		98	70 - 130	1	20	
Zinc	0.0024	J	0.200	0.202		mg/L		100	70 - 130	1	20	

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 480-468360/1-A
Matrix: Water
Analysis Batch: 468456

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468360

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	0.00020	U	0.00020	0.00012	mg/L		04/17/19 11:42	04/17/19 14:12	1

Lab Sample ID: LCS 480-468360/2-A
Matrix: Water
Analysis Batch: 468456

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468360

Analyte	Spike	LCS		Unit	D	%Rec	%Rec.	
		Added	Result				Qualifier	Limits
Mercury	0.00667	0.00722		mg/L		108	85 - 115	

QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-469302/1-A
Matrix: Waste
Analysis Batch: 470005

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469302

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	2.0	U	2.0	0.40	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Cadmium	0.20	U	0.20	0.030	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Chromium	0.284	J	0.50	0.20	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Lead	0.99	U	0.99	0.24	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Selenium	4.0	U	4.0	0.40	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Silver	0.60	U	0.60	0.20	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Antimony	14.9	U	14.9	0.40	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Beryllium	0.20	U	0.20	0.028	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Thallium	6.0	U	6.0	0.30	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Calcium	6.28	J	49.6	3.3	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Iron	9.9	U	9.9	3.5	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Nickel	5.0	U	5.0	0.23	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Vanadium	0.50	U	0.50	0.11	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Magnesium	1.89	J	19.8	0.92	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Copper	0.99	U	0.99	0.21	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Aluminum	9.9	U	9.9	4.4	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Zinc	2.0	U	2.0	0.64	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Manganese	0.0903	J	0.20	0.032	mg/Kg		04/24/19 12:19	04/25/19 15:25	1
Cobalt	0.50	U	0.50	0.050	mg/Kg		04/24/19 12:19	04/25/19 15:25	1

Lab Sample ID: MB 480-469302/1-A
Matrix: Waste
Analysis Batch: 470203

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469302

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Barium	0.50	U	0.50	0.11	mg/Kg		04/24/19 12:19	04/26/19 11:15	1
Sodium	139	U	139	12.9	mg/Kg		04/24/19 12:19	04/26/19 11:15	1
Potassium	29.8	U	29.8	19.8	mg/Kg		04/24/19 12:19	04/26/19 11:15	1

Lab Sample ID: LCSSRM 480-469302/2-A
Matrix: Waste
Analysis Batch: 470005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469302

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Arsenic	221	157.6		mg/Kg		71.3	63.8 - 119.0	
Cadmium	153	107.9		mg/Kg		70.5	68.6 - 115.0	
Chromium	179	132.0		mg/Kg		73.8	65.4 - 121.2	
Lead	74.5	66.40		mg/Kg		89.1	67.8 - 130.3	
Selenium	54.4	38.64		mg/Kg		71.0	53.3 - 130.0	
Silver	75.5	54.42		mg/Kg		72.1	66.6 - 121.7	
Antimony	173	57.00		mg/Kg		32.9	10.0 - 134.1	
Potassium	2630	2083		mg/Kg		79.2	51.7 - 119.0	

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QC Sample Results

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSSRM 480-469302/2-A
Matrix: Waste
Analysis Batch: 470005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469302

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	102	74.00		mg/Kg		72.5	71.2 - 118.6
Thallium	64.7	52.66		mg/Kg		81.4	55.0 - 126.0
Calcium	5190	3617		mg/Kg		69.7	65.7 - 115.6
Iron	15000	11550		mg/Kg		77.0	35.7 - 160.7
Nickel	98.0	81.19		mg/Kg		82.8	63.8 - 118.4
Vanadium	62.7	49.54		mg/Kg		79.0	53.3 - 132.4
Magnesium	2570	1952		mg/Kg		76.0	55.6 - 124.1
Copper	113	83.68		mg/Kg		74.1	71.4 - 118.6
Aluminum	10100	7724		mg/Kg		76.5	41.6 - 123.8
Zinc	281	206.8		mg/Kg		73.6	65.8 - 122.4
Manganese	348	260.2		mg/Kg		74.8	71.3 - 118.4
Cobalt	182	155.5		mg/Kg		85.4	71.4 - 119.2

Lab Sample ID: LCSSRM 480-469302/2-A
Matrix: Waste
Analysis Batch: 470203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469302

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	288	214.2		mg/Kg		74.4	70.5 - 117.4
Sodium	226	177.0		mg/Kg		78.3	39.2 - 133.2

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 480-469543/1-A
Matrix: Waste
Analysis Batch: 469809

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469543

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.020	U	0.020	0.0080	mg/Kg		04/25/19 12:23	04/25/19 14:17	1

Lab Sample ID: LCSSRM 480-469543/2-A ^5
Matrix: Waste
Analysis Batch: 469809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469543

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	4.85	2.84		mg/Kg		58.6	46.0 - 107.0

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QC Sample Results

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 1010A - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 480-468720/1
Matrix: Waste
Analysis Batch: 468720

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	81.0	81.00		Degrees F		100	97.5 - 102.5

Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 480-469778/1-A
Matrix: Water
Analysis Batch: 469851

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469778

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		04/25/19 12:00	04/25/19 17:31	1

Lab Sample ID: LCS 480-469778/2-A
Matrix: Water
Analysis Batch: 469851

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469778

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.400	0.352	*	mg/L		88	90 - 110

Lab Sample ID: LCS 480-469778/3-A
Matrix: Water
Analysis Batch: 469851

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469778

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.250	0.205	*	mg/L		82	90 - 110

Lab Sample ID: MB 480-471271/1-A
Matrix: Water
Analysis Batch: 471399

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 471271

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		05/05/19 12:45	05/06/19 12:34	1

Lab Sample ID: LCS 480-471271/2-A
Matrix: Water
Analysis Batch: 471399

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 471271

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.250	0.261		mg/L		104	90 - 110

Method: 9012 - Cyanide, Reactive

Lab Sample ID: MB 480-469362/1-A
Matrix: Waste
Analysis Batch: 470169

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469362

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Reactive	10.0	U	10.0	10.0	mg/Kg		04/23/19 09:01	04/25/19 18:17	1

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QC Sample Results

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method: 9012 - Cyanide, Reactive (Continued)

Lab Sample ID: LCS 480-469362/2-A ^25
 Matrix: Waste
 Analysis Batch: 470169

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 469362
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cyanide, Reactive	1000	263.8		mg/Kg		26	10 - 100

Method: 9034 - Sulfide, Reactive

Lab Sample ID: MB 480-469365/1-A
 Matrix: Waste
 Analysis Batch: 469593

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 469365

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	10.0	U	10.0	10.0	mg/Kg		04/23/19 09:01	04/24/19 14:40	1

Lab Sample ID: LCS 480-469365/2-A
 Matrix: Waste
 Analysis Batch: 469593

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 469365
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Sulfide, Reactive	780	621.2		mg/Kg		80	10 - 100

Method: 9045D - pH

Lab Sample ID: LCS 480-468685/21
 Matrix: Waste
 Analysis Batch: 468685

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
pH	7.00	7.0		SU		101	99 - 101

Method: 9076 - Chlorine, Total

Lab Sample ID: MB 490-591631/2
 Matrix: Waste
 Analysis Batch: 591631

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Halogens	100	U	100	22.0	ug/g			04/30/19 14:29	1

Lab Sample ID: LCS 490-591631/4
 Matrix: Waste
 Analysis Batch: 591631

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Halogens	500	506.5		ug/g		101	85 - 115

Eurofins TestAmerica, Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

GC/MS VOA

Analysis Batch: 467877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	624.1	
MB 480-467877/7	Method Blank	Total/NA	Water	624.1	
LCS 480-467877/5	Lab Control Sample	Total/NA	Water	624.1	

Analysis Batch: 468062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-468129/2-A	Method Blank	Total/NA	Waste	8260C	468129
LCS 480-468129/1-A	Lab Control Sample	Total/NA	Waste	8260C	468129

Prep Batch: 468129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	5035A_H	
480-151896-5	TANK 3-04112019	Total/NA	Waste	5035A_H	
MB 480-468129/2-A	Method Blank	Total/NA	Waste	5035A_H	
LCS 480-468129/1-A	Lab Control Sample	Total/NA	Waste	5035A_H	

Analysis Batch: 468264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	8260C	468129
480-151896-5	TANK 3-04112019	Total/NA	Waste	8260C	468129

GC/MS Semi VOA

Prep Batch: 467891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	625	
MB 480-467891/1-A	Method Blank	Total/NA	Water	625	
LCS 480-467891/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 480-467891/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 468400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	625.1	467891
MB 480-467891/1-A	Method Blank	Total/NA	Water	625.1	467891
LCS 480-467891/2-A	Lab Control Sample	Total/NA	Water	625.1	467891
LCSD 480-467891/3-A	Lab Control Sample Dup	Total/NA	Water	625.1	467891

Prep Batch: 468844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	3580A	
480-151896-4 - DL	TANK 1-04112019	Total/NA	Waste	3580A	
480-151896-5	TANK 3-04112019	Total/NA	Waste	3580A	
MB 480-468844/1-A	Method Blank	Total/NA	Waste	3580A	
LCS 480-468844/2-A	Lab Control Sample	Total/NA	Waste	3580A	
LCSD 480-468844/3-A	Lab Control Sample Dup	Total/NA	Waste	3580A	

Analysis Batch: 469125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	8270D	468844
480-151896-5	TANK 3-04112019	Total/NA	Waste	8270D	468844
MB 480-468844/1-A	Method Blank	Total/NA	Waste	8270D	468844

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QC Association Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

GC/MS Semi VOA (Continued)

Analysis Batch: 469125 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-468844/2-A	Lab Control Sample	Total/NA	Waste	8270D	468844
LCSD 480-468844/3-A	Lab Control Sample Dup	Total/NA	Waste	8270D	468844

Analysis Batch: 469310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4 - DL	TANK 1-04112019	Total/NA	Waste	8270D	468844

GC Semi VOA

Prep Batch: 377980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	3546	
480-151896-5	TANK 3-04112019	Total/NA	Waste	3546	
MB 240-377980/6-A	Method Blank	Total/NA	Waste	3546	
LCS 240-377980/7-A	Lab Control Sample	Total/NA	Waste	3546	

Analysis Batch: 378243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	8151A	377980
480-151896-5	TANK 3-04112019	Total/NA	Waste	8151A	377980
MB 240-377980/6-A	Method Blank	Total/NA	Waste	8151A	377980
LCS 240-377980/7-A	Lab Control Sample	Total/NA	Waste	8151A	377980

Prep Batch: 468299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	3510C	
MB 480-468299/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-468299/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 480-468299/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 468765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	608.3	468299
MB 480-468299/1-A	Method Blank	Total/NA	Water	608.3	468299
LCS 480-468299/2-A	Lab Control Sample	Total/NA	Water	608.3	468299
LCSD 480-468299/3-A	Lab Control Sample Dup	Total/NA	Water	608.3	468299

Prep Batch: 468846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	3580A	
480-151896-5	TANK 3-04112019	Total/NA	Waste	3580A	
MB 480-468846/1-A	Method Blank	Total/NA	Waste	3580A	
LCS 480-468846/2-A	Lab Control Sample	Total/NA	Waste	3580A	
LCSD 480-468846/3-A	Lab Control Sample Dup	Total/NA	Waste	3580A	

Analysis Batch: 469266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	8081B	468846
480-151896-5	TANK 3-04112019	Total/NA	Waste	8081B	468846
MB 480-468846/1-A	Method Blank	Total/NA	Waste	8081B	468846
LCS 480-468846/2-A	Lab Control Sample	Total/NA	Waste	8081B	468846

Eurofins TestAmerica, Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

GC Semi VOA (Continued)

Analysis Batch: 469266 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 480-468846/3-A	Lab Control Sample Dup	Total/NA	Waste	8081B	468846

Prep Batch: 469296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	3580A	
480-151896-5	TANK 3-04112019	Total/NA	Waste	3580A	
MB 480-469296/1-A	Method Blank	Total/NA	Waste	3580A	
LCS 480-469296/2-A	Lab Control Sample	Total/NA	Waste	3580A	

Analysis Batch: 469795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	8082A	469296
480-151896-5	TANK 3-04112019	Total/NA	Waste	8082A	469296
MB 480-469296/1-A	Method Blank	Total/NA	Waste	8082A	469296
LCS 480-469296/2-A	Lab Control Sample	Total/NA	Waste	8082A	469296

Metals

Prep Batch: 468172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	200.7	
MB 480-468172/1-A	Method Blank	Total/NA	Water	200.7	
LCS 480-468172/2-A	Lab Control Sample	Total/NA	Water	200.7	
480-151896-3 MS	TANK 2-04112019	Total/NA	Water	200.7	
480-151896-3 MSD	TANK 2-04112019	Total/NA	Water	200.7	

Prep Batch: 468360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	245.1	
MB 480-468360/1-A	Method Blank	Total/NA	Water	245.1	
LCS 480-468360/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 468456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	245.1	468360
MB 480-468360/1-A	Method Blank	Total/NA	Water	245.1	468360
LCS 480-468360/2-A	Lab Control Sample	Total/NA	Water	245.1	468360

Analysis Batch: 468933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	200.7 Rev 4.4	468172
MB 480-468172/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	468172
LCS 480-468172/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	468172
480-151896-3 MS	TANK 2-04112019	Total/NA	Water	200.7 Rev 4.4	468172
480-151896-3 MSD	TANK 2-04112019	Total/NA	Water	200.7 Rev 4.4	468172

Prep Batch: 469302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	3050B	
480-151896-5	TANK 3-04112019	Total/NA	Waste	3050B	
MB 480-469302/1-A	Method Blank	Total/NA	Waste	3050B	

Eurofins TestAmerica, Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Metals (Continued)

Prep Batch: 469302 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSSRM 480-469302/2-A	Lab Control Sample	Total/NA	Waste	3050B	

Prep Batch: 469543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	7471B	
480-151896-5	TANK 3-04112019	Total/NA	Waste	7471B	
MB 480-469543/1-A	Method Blank	Total/NA	Waste	7471B	
LCSSRM 480-469543/2-A ^5	Lab Control Sample	Total/NA	Waste	7471B	

Analysis Batch: 469809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	7471B	469543
480-151896-5	TANK 3-04112019	Total/NA	Waste	7471B	469543
MB 480-469543/1-A	Method Blank	Total/NA	Waste	7471B	469543
LCSSRM 480-469543/2-A ^5	Lab Control Sample	Total/NA	Waste	7471B	469543

Analysis Batch: 470005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	6010C	469302
480-151896-5	TANK 3-04112019	Total/NA	Waste	6010C	469302
MB 480-469302/1-A	Method Blank	Total/NA	Waste	6010C	469302
LCSSRM 480-469302/2-A	Lab Control Sample	Total/NA	Waste	6010C	469302

Analysis Batch: 470203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	6010C	469302
MB 480-469302/1-A	Method Blank	Total/NA	Waste	6010C	469302
LCSSRM 480-469302/2-A	Lab Control Sample	Total/NA	Waste	6010C	469302

General Chemistry

Analysis Batch: 468685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	9045D	
480-151896-5	TANK 3-04112019	Total/NA	Waste	9045D	
LCS 480-468685/21	Lab Control Sample	Total/NA	Waste	9045D	

Analysis Batch: 468720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	1010A	
480-151896-5	TANK 3-04112019	Total/NA	Waste	1010A	
LCS 480-468720/1	Lab Control Sample	Total/NA	Waste	1010A	

Prep Batch: 469362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	7.3.3	
480-151896-5	TANK 3-04112019	Total/NA	Waste	7.3.3	
MB 480-469362/1-A	Method Blank	Total/NA	Waste	7.3.3	
LCS 480-469362/2-A ^25	Lab Control Sample	Total/NA	Waste	7.3.3	

QC Association Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

General Chemistry

Prep Batch: 469365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	7.3.4	
480-151896-5	TANK 3-04112019	Total/NA	Waste	7.3.4	
MB 480-469365/1-A	Method Blank	Total/NA	Waste	7.3.4	
LCS 480-469365/2-A	Lab Control Sample	Total/NA	Waste	7.3.4	

Analysis Batch: 469593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	9034	469365
480-151896-5	TANK 3-04112019	Total/NA	Waste	9034	469365
MB 480-469365/1-A	Method Blank	Total/NA	Waste	9034	469365
LCS 480-469365/2-A	Lab Control Sample	Total/NA	Waste	9034	469365

Prep Batch: 469778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	Distill/CN	
MB 480-469778/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 480-469778/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
LCS 480-469778/3-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 469851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	335.4	469778
MB 480-469778/1-A	Method Blank	Total/NA	Water	335.4	469778
LCS 480-469778/2-A	Lab Control Sample	Total/NA	Water	335.4	469778
LCS 480-469778/3-A	Lab Control Sample	Total/NA	Water	335.4	469778

Analysis Batch: 470169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	9012	469362
480-151896-5	TANK 3-04112019	Total/NA	Waste	9012	469362
MB 480-469362/1-A	Method Blank	Total/NA	Waste	9012	469362
LCS 480-469362/2-A ^25	Lab Control Sample	Total/NA	Waste	9012	469362

Prep Batch: 471271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	Distill/CN	
MB 480-471271/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 480-471271/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 471399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-3	TANK 2-04112019	Total/NA	Water	335.4	471271
MB 480-471271/1-A	Method Blank	Total/NA	Water	335.4	471271
LCS 480-471271/2-A	Lab Control Sample	Total/NA	Water	335.4	471271

Analysis Batch: 473268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	Moisture	
480-151896-5	TANK 3-04112019	Total/NA	Waste	Moisture	
480-151896-4 DU	TANK 1-04112019	Total/NA	Waste	Moisture	

Eurofins TestAmerica, Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

General Chemistry

Analysis Batch: 591631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-151896-4	TANK 1-04112019	Total/NA	Waste	9076	
480-151896-5	TANK 3-04112019	Total/NA	Waste	9076	
MB 490-591631/2	Method Blank	Total/NA	Waste	9076	
LCS 490-591631/4	Lab Control Sample	Total/NA	Waste	9076	

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Lab Chronicle

Client: Parsons Corporation
 Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 2-04112019

Lab Sample ID: 480-151896-3

Date Collected: 04/11/19 11:00

Matrix: Water

Date Received: 04/12/19 15:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	467877	04/15/19 15:26	S1V	TAL BUF
Total/NA	Prep	625			467891	04/15/19 08:27	JMP	TAL BUF
Total/NA	Analysis	625.1		1	468400	04/17/19 23:50	DMR	TAL BUF
Total/NA	Prep	3510C			468299	04/17/19 08:19	JMP	TAL BUF
Total/NA	Analysis	608.3		1	468765	04/19/19 12:07	DSC	TAL BUF
Total/NA	Prep	200.7			468172	04/17/19 07:47	KMP	TAL BUF
Total/NA	Analysis	200.7 Rev 4.4		1	468933	04/19/19 11:30	EMB	TAL BUF
Total/NA	Prep	245.1			468360	04/17/19 11:42	BMB	TAL BUF
Total/NA	Analysis	245.1		1	468456	04/17/19 14:49	BMB	TAL BUF
Total/NA	Prep	Distill/CN			469778	04/25/19 12:00	MDL	TAL BUF
Total/NA	Analysis	335.4		1	469851	04/25/19 17:37	MDL	TAL BUF
Total/NA	Prep	Distill/CN			471271	05/05/19 12:45	MDL	TAL BUF
Total/NA	Analysis	335.4		1	471399	05/06/19 12:47	MDL	TAL BUF

Client Sample ID: TANK 1-04112019

Lab Sample ID: 480-151896-4

Date Collected: 04/11/19 09:30

Matrix: Waste

Date Received: 04/12/19 15:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_H			468129	04/16/19 09:37	AMM	TAL BUF
Total/NA	Analysis	8260C		100	468264	04/17/19 16:53	AEM	TAL BUF
Total/NA	Prep	3580A			468844	04/19/19 12:31	SMP	TAL BUF
Total/NA	Analysis	8270D		10	469125	04/22/19 23:29	DMR	TAL BUF
Total/NA	Prep	3580A	DL		468844	04/19/19 12:31	SMP	TAL BUF
Total/NA	Analysis	8270D	DL	200	469310	04/23/19 15:07	DMR	TAL BUF
Total/NA	Prep	3580A			468846	04/19/19 12:35	SMP	TAL BUF
Total/NA	Analysis	8081B		20	469266	04/23/19 17:22	JLS	TAL BUF
Total/NA	Prep	3580A			469296	04/23/19 12:04	SMP	TAL BUF
Total/NA	Analysis	8082A		1	469795	04/25/19 21:04	W1T	TAL BUF
Total/NA	Prep	3546			377980	04/24/19 12:45	EMB	TAL CAN
Total/NA	Analysis	8151A		1	378243	04/25/19 15:41	OCR	TAL CAN
Total/NA	Prep	3050B			469302	04/24/19 12:19	JMP	TAL BUF
Total/NA	Analysis	6010C		1	470005	04/25/19 15:43	AMH	TAL BUF
Total/NA	Prep	3050B			469302	04/24/19 12:19	JMP	TAL BUF
Total/NA	Analysis	6010C		1	470203	04/26/19 11:33	AMH	TAL BUF
Total/NA	Prep	7471B			469543	04/25/19 12:23	BMB	TAL BUF
Total/NA	Analysis	7471B		1	469809	04/25/19 14:27	BMB	TAL BUF
Total/NA	Analysis	1010A		1	468720	04/19/19 07:10	MV	TAL BUF
Total/NA	Prep	7.3.3			469362	04/23/19 09:01	MJB	TAL BUF
Total/NA	Analysis	9012		1	470169	04/25/19 18:17	MDL	TAL BUF
Total/NA	Prep	7.3.4			469365	04/23/19 09:01	MJB	TAL BUF
Total/NA	Analysis	9034		1	469593	04/24/19 14:40	MJB	TAL BUF
Total/NA	Analysis	9045D		1	468685	04/18/19 13:00	KEB	TAL BUF
Total/NA	Analysis	9076		1	591631	05/01/19 07:07	CLJ	TAL NSH

Eurofins TestAmerica, Buffalo

Lab Chronicle

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Client Sample ID: TANK 1-04112019

Lab Sample ID: 480-151896-4

Date Collected: 04/11/19 09:30

Matrix: Waste

Date Received: 04/12/19 15:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	473268	05/16/19 16:33	KEK1	TAL BUF

Client Sample ID: TANK 3-04112019

Lab Sample ID: 480-151896-5

Date Collected: 04/11/19 10:30

Matrix: Waste

Date Received: 04/12/19 15:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_H			468129	04/16/19 09:37	AMM	TAL BUF
Total/NA	Analysis	8260C		50	468264	04/17/19 17:16	AEM	TAL BUF
Total/NA	Prep	3580A			468844	04/19/19 12:31	SMP	TAL BUF
Total/NA	Analysis	8270D		20	469125	04/22/19 23:53	DMR	TAL BUF
Total/NA	Prep	3580A			468846	04/19/19 12:35	SMP	TAL BUF
Total/NA	Analysis	8081B		50	469266	04/23/19 17:42	JLS	TAL BUF
Total/NA	Prep	3580A			469296	04/23/19 12:04	SMP	TAL BUF
Total/NA	Analysis	8082A		2	469795	04/25/19 21:20	W1T	TAL BUF
Total/NA	Prep	3546			377980	04/24/19 12:45	EMB	TAL CAN
Total/NA	Analysis	8151A		1	378243	04/25/19 16:01	OCR	TAL CAN
Total/NA	Prep	3050B			469302	04/24/19 12:19	JMP	TAL BUF
Total/NA	Analysis	6010C		1	470005	04/25/19 15:58	AMH	TAL BUF
Total/NA	Prep	7471B			469543	04/25/19 12:23	BMB	TAL BUF
Total/NA	Analysis	7471B		1	469809	04/25/19 14:29	BMB	TAL BUF
Total/NA	Analysis	1010A		1	468720	04/19/19 07:10	MV	TAL BUF
Total/NA	Prep	7.3.3			469362	04/23/19 09:01	MJB	TAL BUF
Total/NA	Analysis	9012		1	470169	04/25/19 18:17	MDL	TAL BUF
Total/NA	Prep	7.3.4			469365	04/23/19 09:01	MJB	TAL BUF
Total/NA	Analysis	9034		1	469593	04/24/19 14:40	MJB	TAL BUF
Total/NA	Analysis	9045D		1	468685	04/18/19 13:00	KEB	TAL BUF
Total/NA	Analysis	9076		1	591631	05/01/19 07:07	CLJ	TAL NSH
Total/NA	Analysis	Moisture		1	473268	05/16/19 16:33	KEK1	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600
 TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
 TAL NSH = Eurofins TestAmerica, Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Accreditation/Certification Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
335.4	Distill/CN	Water	Cyanide, Total
608.3	3510C	Water	PCB-1262
608.3	3510C	Water	PCB-1268
608.3	3510C	Water	Polychlorinated biphenyls, Total
624.1		Water	1,2-Dichloroethene, Total
625.1	625	Water	1,2-Dichlorobenzene
625.1	625	Water	1,3-Dichlorobenzene
625.1	625	Water	1,4-Dichlorobenzene
9012	7.3.3	Waste	Cyanide, Reactive
9034	7.3.4	Waste	Sulfide, Reactive
9045D		Waste	Temperature
Moisture		Waste	Percent Solids

Laboratory: Eurofins TestAmerica, Canton

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10975	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Laboratory: Eurofins TestAmerica, Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11342	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9076		Waste	Total Halogens

Method Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
625.1	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL BUF
608.3	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL BUF
8081B	Organochlorine Pesticides (GC)	SW846	TAL BUF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL BUF
8151A	Herbicides (GC)	SW846	TAL CAN
200.7 Rev 4.4	Metals (ICP)	EPA	TAL BUF
245.1	Mercury (CVAA)	EPA	TAL BUF
6010C	Metals (ICP)	SW846	TAL BUF
7471B	Mercury (CVAA)	SW846	TAL BUF
1010A	Ignitability, Pinsky-Martens Closed-Cup Method	SW846	TAL BUF
335.4	Cyanide, Total	MCAWW	TAL BUF
9012	Cyanide, Reactive	SW846	TAL BUF
9034	Sulfide, Reactive	SW846	TAL BUF
9045D	pH	SW846	TAL BUF
9076	Chlorine, Total	SW846	TAL NSH
Moisture	Percent Moisture	EPA	TAL BUF
200.7	Preparation, Total Metals	EPA	TAL BUF
245.1	Preparation, Mercury	EPA	TAL BUF
3050B	Preparation, Metals	SW846	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3546	Microwave Extraction	SW846	TAL CAN
3580A	Waste Dilution	SW846	TAL BUF
5035A_H	Closed System Purge and Trap	SW846	TAL BUF
625	Liquid-Liquid Extraction	40CFR136A	TAL BUF
7.3.3	Cyanide, Reactive	SW846	TAL BUF
7.3.4	Sulfide, Reactive	SW846	TAL BUF
7471B	Preparation, Mercury	SW846	TAL BUF
Distill/CN	Distillation, Cyanide	None	TAL BUF

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL NSH = Eurofins TestAmerica, Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Sample Summary

Client: Parsons Corporation
Project/Site: Honeywell - Tonawanda

Job ID: 480-151896-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-151896-3	TANK 2-04112019	Water	04/11/19 11:00	04/12/19 15:50	
480-151896-4	TANK 1-04112019	Waste	04/11/19 09:30	04/12/19 15:50	
480-151896-5	TANK 3-04112019	Waste	04/11/19 10:30	04/12/19 15:50	

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Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler: Schove, John R	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-49147.1
Shipping/Receiving		Phone:	E-Mail: john.schove@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-151896-1	
Address: 4101 Shuffel Street NW, North Canton, OH, 44720		Due Date Requested: 4/25/2019	Analysis Requested		
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:	TAT Requested (days):	M - Hexane N - None B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Z - other (specify)		
Email:	WO #:	Field Filtered Sample (Yes or No)	815/3580A TCLP Herbicides	Preservation Codes:	
Project Name: Honeywell - Tonawanda	Project #: 48014882	Perform MS/MSD (Yes or No)		A - HCL M - None P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 L - EDA	
Site:	SSOW#:	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=soil, BT=Tissue, A=Air)
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Preservation Code	Special Instructions/Note:
TANK 1-04112019 (480-151896-4)	4/11/19	09:30 Eastern	Waste		1 Labeled has sample 151896-1
TANK 3-04112019 (480-151896-5)	4/11/19	10:30 Eastern	Waste		1 Labeled has sample 151896-2
Total Number of containers					
Special Instructions/Note: C181					

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
 Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: *Cap Mc* Date/Time: 4-23-19 16:00 Company: *ADP*
 Relinquished by: _____ Date/Time: _____ Company: _____
 Relinquished by: _____ Date/Time: _____ Company: _____
 Custody Seals Intact: Yes No
 Cooler Temperature(s) °C and Other Remarks:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months
 Special Instructions/QC Requirements:

Received by: *[Signature]* Date/Time: 4/24/19 10:15 Company: *[Signature]*
 Received by: _____ Date/Time: _____ Company: _____
 Received by: _____ Date/Time: _____ Company: _____
 Cooler Temperature(s) °C and Other Remarks:



TestAmerica Canton Sample Receipt Form/Narrative


Login # : _____

Canton Facility

Client TA Buffalo Site Name _____ Cooler unpacked by: [Signature]
Cooler Received on 4/24/19 Opened on 4/24/19
FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN# IR-8 (CF -0.2 °C) Observed Cooler Temp. 0.8 °C Corrected Cooler Temp. 0.6 °C
IR GUN #36 (CF +0.7 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
-Were tamper/custody seals intact and uncompromised? Yes No NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes No
- 4. Did custody papers accompany the sample(s)? Yes No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes No
- 8. Could all bottle labels be reconciled with the COC? Yes No
- 9. Were correct bottle(s) used for the test(s) indicated? Yes No
- 10. Sufficient quantity received to perform indicated analyses? Yes No
- 11. Are these work share samples? Yes No
- If yes, Questions 12-16 have been checked at the originating laboratory.
- 12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC984738
- 13. Were VOAs on the COC? Yes No
- 14. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
- 15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
- 16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other
Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: _____

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____



COOLER RECEIPT FORM



480-151896 Chain of Custody

Cooler Received/Opened On 4/19/2019 @ 0935

Time Samples Removed From Cooler 11:55 Time Samples Placed In Storage 12:15 (2 Hour Window)

1. Tracking # 4807 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 17960358 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 0.5 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

If yes, how many and where: 1 (Front)

5. Were the seals intact, signed, and dated correctly? YES NO NA

6. Were custody papers inside cooler? YES NO NA

I certify that I opened the cooler and answered questions 1-6 (initial) J.J.

7. Were custody seals on containers: YES NO and Intact YES NO NA

Were these signed and dated correctly? YES NO NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA

12. Did all container labels and tags agree with custody papers? YES NO NA

13a. Were VOA vials received? YES NO NA

b. Was there any observable headspace present in any VOA vial? YES NO NA



14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (initial) J.J.

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA

b. Did the bottle labels indicate that the correct preservatives were used? YES NO NA

16. Was residual chlorine present? YES NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) J.J.

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA

18. Did you sign the custody papers in the appropriate place? YES NO NA

19. Were correct containers used for the analysis requested? YES NO NA

20. Was sufficient amount of sample sent in each container? YES NO NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) J.J.

I certify that I attached a label with the unique LIMS number to each container (initial) J.J.

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO # _____

Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 480-151896-1

Login Number: 151896

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Harper, Marcus D

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	PARSONS
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-145712-1
Laboratory Sample Delivery Group: 480-145712-1
Client Project/Site: Priority Pollutants
Revision: 1

For:
Parsons Corporation
40 LaRiviere Drive
Suite 350
Buffalo, New York 14202

Attn: Robert B Piurek



Authorized for release by:
6/19/2019 10:04:30 AM

John Schove, Project Manager II
(716)504-9838
john.schove@testamericainc.com

LINKS

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results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
b	Result Detected in the Unseeded Control blank (USB).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Job ID: 480-145712-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-145712-1

Revision

This report has been revised to include Xylenes.

Comments

No additional comments.

Receipt

The samples were received on 11/26/2018 5:45 PM and 11/28/2018 3:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 2.6° C, 2.8° C, 3.0° C and 3.2° C.

Receipt Exceptions

WESTBERM1_11262018 is listed on the chain of custody (COC) for all analysis however no volume was received for this sample set. No tests have been assigned to this sample.

Insufficient sample volume was provided for the following sample for all the analysis requested on the chain of custody (COC): EASTBERM2-11262018 (480-145712-2). Only those tests that we received volume for were assigned.

GC/MS VOA

Method(s) 624.1: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: WESTBERM2-11262018 (480-145712-4) and WESTBERM3-11262018 (480-145712-5). Elevated reporting limits (RLs) are provided.

Method(s) 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: EASTBERM1-11262018 (480-145712-1), WESTBERM2-11262018 (480-145712-4) and WESTBERM3-11262018 (480-145712-5). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method(s) 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: WESTBERM1-11262018 (480-145712-3). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method(s) 625.1: The following sample was diluted due to the nature of the sample matrix: WESTBERM3-11262018 (480-145712-5). Elevated reporting limits (RLs) are provided.

Method(s) 625.1: The following sample was diluted due to the nature of the sample matrix: WESTBERM3-11262018 (480-145712-5). As such, surrogate recoveries are below the calibration range or are not reported, and elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Method(s) SM 5210B: Analyst forgot to include a duplicate in the batch.

WESTBERM1_11282018 (480-145793-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Case Narrative

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Job ID: 480-145712-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

Method(s) 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 480-447670.

Method(s) 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 480-448157.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Detection Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: EASTBERM1-11262018

Lab Sample ID: 480-145712-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0053		0.0040	0.0010	mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.0033	J	0.010	0.0016	mg/L	1		200.7 Rev 4.4	Total/NA
Lead	0.0033	J	0.010	0.0030	mg/L	1		200.7 Rev 4.4	Total/NA
Nickel	0.0030	J	0.010	0.0013	mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.018	B	0.010	0.0015	mg/L	1		200.7 Rev 4.4	Total/NA
Oil & Grease	3.6	J	5.5	1.5	mg/L	1		1664B	Total/NA
Cyanide, Total	0.0064	J	0.010	0.0050	mg/L	1		335.4	Total/NA
Ammonia	0.090	B	0.020	0.0090	mg/L	1		350.1	Total/NA
Total Suspended Solids	18.0		4.0	4.0	mg/L	1		SM 2540D	Total/NA
Total Phosphorus	0.0055	J	0.010	0.0050	mg/L	1		SM 4500 P E	Total/NA
Biochemical Oxygen Demand	3.8		2.0	2.0	mg/L	1		SM 5210B	Total/NA

Client Sample ID: EASTBERM2-11262018

Lab Sample ID: 480-145712-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Oil & Grease	4.3	J B	5.6	1.6	mg/L	1		1664B	Total/NA
Total Suspended Solids	13.6		4.0	4.0	mg/L	1		SM 2540D	Total/NA

Client Sample ID: WESTBERM1-11262018

Lab Sample ID: 480-145712-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.8	J	5.0	0.60	ug/L	1		624.1	Total/NA
m-Xylene & p-Xylene	1.3	J	10	1.1	ug/L	1		624.1	Total/NA
o-Xylene	0.71	J	5.0	0.43	ug/L	1		624.1	Total/NA
Toluene	1.7	J	5.0	0.45	ug/L	1		624.1	Total/NA
2,4-Dimethylphenol	2.0	J	5.0	1.4	ug/L	1		625.1	Total/NA
Benzo[a]anthracene	1.1	J	5.0	1.1	ug/L	1		625.1	Total/NA
Benzo[b]fluoranthene	1.4	J	5.0	1.2	ug/L	1		625.1	Total/NA
Fluoranthene	4.6	J	5.0	1.6	ug/L	1		625.1	Total/NA
Pyrene	3.6	J	5.0	1.4	ug/L	1		625.1	Total/NA
Nickel	0.0016	J	0.010	0.0013	mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.013	B	0.010	0.0015	mg/L	1		200.7 Rev 4.4	Total/NA
Oil & Grease	8.7	B	5.0	1.4	mg/L	1		1664B	Total/NA
Ammonia	2.5		0.040	0.018	mg/L	2		350.1	Total/NA
Total Suspended Solids	6.8		4.0	4.0	mg/L	1		SM 2540D	Total/NA
Total Phosphorus	0.013		0.010	0.0050	mg/L	1		SM 4500 P E	Total/NA

Client Sample ID: WESTBERM2-11262018

Lab Sample ID: 480-145712-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	3.3	J	20	3.3	ug/L	4		624.1	Total/NA
Phenanthrene	1.5	J	5.0	1.2	ug/L	1		625.1	Total/NA
Copper	0.0023	J	0.010	0.0016	mg/L	1		200.7 Rev 4.4	Total/NA
Nickel	0.0018	J	0.010	0.0013	mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.015	B	0.010	0.0015	mg/L	1		200.7 Rev 4.4	Total/NA
Oil & Grease	2.4	J B	5.0	1.4	mg/L	1		1664B	Total/NA
Cyanide, Total	0.011		0.010	0.0050	mg/L	1		335.4	Total/NA
Ammonia	0.30	B	0.020	0.0090	mg/L	1		350.1	Total/NA
Total Suspended Solids	15.6		4.0	4.0	mg/L	1		SM 2540D	Total/NA
Biochemical Oxygen Demand	2.8		2.0	2.0	mg/L	1		SM 5210B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Detection Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM3-11262018

Lab Sample ID: 480-145712-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	3.9	J	20	3.3	ug/L	4		624.1	Total/NA
Benzo[a]anthracene	250	J	1000	220	ug/L	200		625.1	Total/NA
Chrysene	250	J	1000	200	ug/L	200		625.1	Total/NA
Fluoranthene	700	J	1000	320	ug/L	200		625.1	Total/NA
Fluorene	250	J	1000	200	ug/L	200		625.1	Total/NA
Naphthalene	960	J	1000	170	ug/L	200		625.1	Total/NA
Phenanthrene	1100		1000	240	ug/L	200		625.1	Total/NA
Pyrene	550	J	1000	280	ug/L	200		625.1	Total/NA
Chromium	0.0018	J	0.0040	0.0010	mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.0028	J	0.010	0.0016	mg/L	1		200.7 Rev 4.4	Total/NA
Nickel	0.0029	J	0.010	0.0013	mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.017	B	0.010	0.0015	mg/L	1		200.7 Rev 4.4	Total/NA
Oil & Grease	2.4	J B	4.9	1.4	mg/L	1		1664B	Total/NA
Cyanide, Total	0.011		0.010	0.0050	mg/L	1		335.4	Total/NA
Ammonia	0.37	B	0.020	0.0090	mg/L	1		350.1	Total/NA
Total Suspended Solids	16.4		4.0	4.0	mg/L	1		SM 2540D	Total/NA
Total Phosphorus	0.011		0.010	0.0050	mg/L	1		SM 4500 P E	Total/NA
Biochemical Oxygen Demand	2.6		2.0	2.0	mg/L	1		SM 5210B	Total/NA

Client Sample ID: WESTBERM1_11282018

Lab Sample ID: 480-145793-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Biochemical Oxygen Demand	3.6	b	2.0	2.0	mg/L	1		SM 5210B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: EASTBERM1-11262018

Lab Sample ID: 480-145712-1

Date Collected: 11/26/18 15:15

Matrix: Water

Date Received: 11/26/18 17:45

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.0	U	5.0	0.39	ug/L			11/27/18 15:31	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.26	ug/L			11/27/18 15:31	1
1,1,2-Trichloroethane	5.0	U	5.0	0.48	ug/L			11/27/18 15:31	1
1,1-Dichloroethane	5.0	U	5.0	0.59	ug/L			11/27/18 15:31	1
1,1-Dichloroethene	5.0	U	5.0	0.85	ug/L			11/27/18 15:31	1
1,2-Dichlorobenzene	5.0	U	5.0	0.44	ug/L			11/27/18 15:31	1
1,2-Dichloroethane	5.0	U	5.0	0.60	ug/L			11/27/18 15:31	1
1,2-Dichloroethene, Total	10	U	10	3.2	ug/L			11/27/18 15:31	1
1,2-Dichloropropane	5.0	U	5.0	0.61	ug/L			11/27/18 15:31	1
1,3-Dichlorobenzene	5.0	U	5.0	0.54	ug/L			11/27/18 15:31	1
1,4-Dichlorobenzene	5.0	U	5.0	0.51	ug/L			11/27/18 15:31	1
2-Chloroethyl vinyl ether	25	U	25	1.9	ug/L			11/27/18 15:31	1
Acrolein	100	U	100	17	ug/L			11/27/18 15:31	1
Acrylonitrile	50	U	50	1.9	ug/L			11/27/18 15:31	1
Benzene	5.0	U	5.0	0.60	ug/L			11/27/18 15:31	1
Bromoform	5.0	U	5.0	0.47	ug/L			11/27/18 15:31	1
Bromomethane	5.0	U	5.0	1.2	ug/L			11/27/18 15:31	1
Carbon tetrachloride	5.0	U	5.0	0.51	ug/L			11/27/18 15:31	1
Chlorobenzene	5.0	U	5.0	0.48	ug/L			11/27/18 15:31	1
Chlorodibromomethane	5.0	U	5.0	0.41	ug/L			11/27/18 15:31	1
Chloroethane	5.0	U	5.0	0.87	ug/L			11/27/18 15:31	1
Chloroform	5.0	U	5.0	0.54	ug/L			11/27/18 15:31	1
Chloromethane	5.0	U	5.0	0.64	ug/L			11/27/18 15:31	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.33	ug/L			11/27/18 15:31	1
Dichlorobromomethane	5.0	U	5.0	0.54	ug/L			11/27/18 15:31	1
Ethylbenzene	5.0	U	5.0	0.46	ug/L			11/27/18 15:31	1
Methylene Chloride	5.0	U	5.0	0.81	ug/L			11/27/18 15:31	1
m-Xylene & p-Xylene	10	U	10	1.1	ug/L			11/27/18 15:31	1
o-Xylene	5.0	U	5.0	0.43	ug/L			11/27/18 15:31	1
Tetrachloroethene	5.0	U	5.0	0.34	ug/L			11/27/18 15:31	1
Toluene	5.0	U	5.0	0.45	ug/L			11/27/18 15:31	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.59	ug/L			11/27/18 15:31	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.44	ug/L			11/27/18 15:31	1
Trichloroethene	5.0	U	5.0	0.60	ug/L			11/27/18 15:31	1
Vinyl chloride	5.0	U	5.0	0.75	ug/L			11/27/18 15:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		68 - 130		11/27/18 15:31	1
4-Bromofluorobenzene (Surr)	110		76 - 123		11/27/18 15:31	1
Dibromofluoromethane (Surr)	97		75 - 123		11/27/18 15:31	1
Toluene-d8 (Surr)	91		77 - 120		11/27/18 15:31	1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10	0.82	ug/L		11/27/18 14:11	12/04/18 19:40	1
1,2-Dichlorobenzene	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
1,2-Diphenylhydrazine	10	U	10	0.78	ug/L		11/27/18 14:11	12/04/18 19:40	1
1,3-Dichlorobenzene	10	U	10	0.69	ug/L		11/27/18 14:11	12/04/18 19:40	1
1,4-Dichlorobenzene	10	U	10	5.6	ug/L		11/27/18 14:11	12/04/18 19:40	1
2,2'-oxybis[1-chloropropane]	5.0	U	5.0	0.84	ug/L		11/27/18 14:11	12/04/18 19:40	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: EASTBERM1-11262018

Lab Sample ID: 480-145712-1

Date Collected: 11/26/18 15:15

Matrix: Water

Date Received: 11/26/18 17:45

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
2,4-Dichlorophenol	5.0	U	5.0	0.77	ug/L		11/27/18 14:11	12/04/18 19:40	1
2,4-Dimethylphenol	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 19:40	1
2,4-Dinitrophenol	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
2,4-Dinitrotoluene	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
2,6-Dinitrotoluene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
2-Chloronaphthalene	5.0	U	5.0	0.91	ug/L		11/27/18 14:11	12/04/18 19:40	1
2-Chlorophenol	5.0	U	5.0	0.66	ug/L		11/27/18 14:11	12/04/18 19:40	1
2-Nitrophenol	5.0	U	5.0	0.70	ug/L		11/27/18 14:11	12/04/18 19:40	1
3,3'-Dichlorobenzidine	5.0	U	5.0	0.82	ug/L		11/27/18 14:11	12/04/18 19:40	1
4,6-Dinitro-2-methylphenol	10	U	10	0.66	ug/L		11/27/18 14:11	12/04/18 19:40	1
4-Bromophenyl phenyl ether	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 19:40	1
4-Chloro-3-methylphenol	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/04/18 19:40	1
4-Chlorophenyl phenyl ether	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/04/18 19:40	1
4-Nitrophenol	15	U	15	10	ug/L		11/27/18 14:11	12/04/18 19:40	1
Acenaphthene	5.0	U	5.0	0.81	ug/L		11/27/18 14:11	12/04/18 19:40	1
Acenaphthylene	5.0	U	5.0	0.87	ug/L		11/27/18 14:11	12/04/18 19:40	1
Anthracene	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 19:40	1
Benzidine	80	U	80	35	ug/L		11/27/18 14:11	12/04/18 19:40	1
Benzo[a]anthracene	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/04/18 19:40	1
Benzo[a]pyrene	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/04/18 19:40	1
Benzo[b]fluoranthene	5.0	U	5.0	1.2	ug/L		11/27/18 14:11	12/04/18 19:40	1
Benzo[g,h,i]perylene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/04/18 19:40	1
Benzo[k]fluoranthene	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/04/18 19:40	1
Bis(2-chloroethoxy)methane	5.0	U	5.0	0.75	ug/L		11/27/18 14:11	12/04/18 19:40	1
Bis(2-chloroethyl)ether	5.0	U	5.0	0.93	ug/L		11/27/18 14:11	12/04/18 19:40	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.2	ug/L		11/27/18 14:11	12/04/18 19:40	1
Butyl benzyl phthalate	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/04/18 19:40	1
Chrysene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
Dibenz(a,h)anthracene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/04/18 19:40	1
Diethyl phthalate	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
Dimethyl phthalate	5.0	U	5.0	0.91	ug/L		11/27/18 14:11	12/04/18 19:40	1
Di-n-butyl phthalate	5.0	U	5.0	1.6	ug/L		11/27/18 14:11	12/04/18 19:40	1
Di-n-octyl phthalate	5.0	U	5.0	1.2	ug/L		11/27/18 14:11	12/04/18 19:40	1
Fluoranthene	5.0	U	5.0	1.6	ug/L		11/27/18 14:11	12/04/18 19:40	1
Fluorene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
Hexachlorobenzene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
Hexachlorobutadiene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
Hexachlorocyclopentadiene	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
Hexachloroethane	5.0	U	5.0	0.60	ug/L		11/27/18 14:11	12/04/18 19:40	1
Indeno[1,2,3-cd]pyrene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/04/18 19:40	1
Isophorone	5.0	U	5.0	0.74	ug/L		11/27/18 14:11	12/04/18 19:40	1
Naphthalene	5.0	U	5.0	0.86	ug/L		11/27/18 14:11	12/04/18 19:40	1
Nitrobenzene	5.0	U	5.0	0.81	ug/L		11/27/18 14:11	12/04/18 19:40	1
N-Nitrosodimethylamine	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 19:40	1
N-Nitrosodi-n-propylamine	5.0	U	5.0	0.89	ug/L		11/27/18 14:11	12/04/18 19:40	1
N-Nitrosodiphenylamine	5.0	U	5.0	0.40	ug/L		11/27/18 14:11	12/04/18 19:40	1
Pentachlorophenol	10	U	10	1.6	ug/L		11/27/18 14:11	12/04/18 19:40	1
Phenanthrene	5.0	U	5.0	1.2	ug/L		11/27/18 14:11	12/04/18 19:40	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: EASTBERM1-11262018

Lab Sample ID: 480-145712-1

Date Collected: 11/26/18 15:15

Matrix: Water

Date Received: 11/26/18 17:45

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	5.0	U	5.0	0.35	ug/L		11/27/18 14:11	12/04/18 19:40	1
Pyrene	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 19:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	87		52 - 151				11/27/18 14:11	12/04/18 19:40	1
2-Fluorobiphenyl	81		44 - 120				11/27/18 14:11	12/04/18 19:40	1
2-Fluorophenol	50		17 - 120				11/27/18 14:11	12/04/18 19:40	1
Nitrobenzene-d5	87		15 - 314				11/27/18 14:11	12/04/18 19:40	1
Phenol-d5	36		8 - 424				11/27/18 14:11	12/04/18 19:40	1
p-Terphenyl-d14 (Surr)	91		22 - 125				11/27/18 14:11	12/04/18 19:40	1

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.020	U	0.020	0.0068	mg/L		11/30/18 09:55	11/30/18 18:51	1
Arsenic	0.015	U	0.015	0.0056	mg/L		11/30/18 09:55	11/30/18 18:51	1
Beryllium	0.0020	U	0.0020	0.00030	mg/L		11/30/18 09:55	11/30/18 18:51	1
Cadmium	0.0020	U	0.0020	0.00050	mg/L		11/30/18 09:55	11/30/18 18:51	1
Chromium	0.0053		0.0040	0.0010	mg/L		11/30/18 09:55	11/30/18 18:51	1
Copper	0.0033	J	0.010	0.0016	mg/L		11/30/18 09:55	11/30/18 18:51	1
Lead	0.0033	J	0.010	0.0030	mg/L		11/30/18 09:55	11/30/18 18:51	1
Nickel	0.0030	J	0.010	0.0013	mg/L		11/30/18 09:55	11/30/18 18:51	1
Selenium	0.025	U	0.025	0.0087	mg/L		11/30/18 09:55	11/30/18 18:51	1
Silver	0.0060	U	0.0060	0.0017	mg/L		11/30/18 09:55	11/30/18 18:51	1
Thallium	0.020	U	0.020	0.010	mg/L		11/30/18 09:55	11/30/18 18:51	1
Zinc	0.018	B	0.010	0.0015	mg/L		11/30/18 09:55	11/30/18 18:51	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	0.00012	mg/L		11/29/18 12:00	11/29/18 14:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	3.6	J	5.5	1.5	mg/L		11/30/18 06:53	11/30/18 10:04	1
Cyanide, Total	0.0064	J	0.010	0.0050	mg/L		12/04/18 12:15	12/04/18 17:23	1
Ammonia	0.090	B	0.020	0.0090	mg/L			11/28/18 17:16	1
Total Phosphorus	0.0055	J	0.010	0.0050	mg/L			11/28/18 09:20	1
Biochemical Oxygen Demand	3.8		2.0	2.0	mg/L			11/27/18 21:06	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	18.0		4.0	4.0	mg/L			11/28/18 17:36	1

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: EASTBERM2-11262018

Lab Sample ID: 480-145712-2

Date Collected: 11/26/18 15:20

Matrix: Water

Date Received: 11/26/18 17:45

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10	0.82	ug/L		11/27/18 14:11	12/04/18 20:06	1
1,2-Dichlorobenzene	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
1,2-Diphenylhydrazine	10	U	10	0.78	ug/L		11/27/18 14:11	12/04/18 20:06	1
1,3-Dichlorobenzene	10	U	10	0.69	ug/L		11/27/18 14:11	12/04/18 20:06	1
1,4-Dichlorobenzene	10	U	10	5.6	ug/L		11/27/18 14:11	12/04/18 20:06	1
2,2'-oxybis[1-chloropropane]	5.0	U	5.0	0.84	ug/L		11/27/18 14:11	12/04/18 20:06	1
2,4,6-Trichlorophenol	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
2,4-Dichlorophenol	5.0	U	5.0	0.77	ug/L		11/27/18 14:11	12/04/18 20:06	1
2,4-Dimethylphenol	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 20:06	1
2,4-Dinitrophenol	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
2,4-Dinitrotoluene	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
2,6-Dinitrotoluene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
2-Chloronaphthalene	5.0	U	5.0	0.91	ug/L		11/27/18 14:11	12/04/18 20:06	1
2-Chlorophenol	5.0	U	5.0	0.66	ug/L		11/27/18 14:11	12/04/18 20:06	1
2-Nitrophenol	5.0	U	5.0	0.70	ug/L		11/27/18 14:11	12/04/18 20:06	1
3,3'-Dichlorobenzidine	5.0	U	5.0	0.82	ug/L		11/27/18 14:11	12/04/18 20:06	1
4,6-Dinitro-2-methylphenol	10	U	10	0.66	ug/L		11/27/18 14:11	12/04/18 20:06	1
4-Bromophenyl phenyl ether	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 20:06	1
4-Chloro-3-methylphenol	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/04/18 20:06	1
4-Chlorophenyl phenyl ether	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/04/18 20:06	1
4-Nitrophenol	15	U	15	10	ug/L		11/27/18 14:11	12/04/18 20:06	1
Acenaphthene	5.0	U	5.0	0.81	ug/L		11/27/18 14:11	12/04/18 20:06	1
Acenaphthylene	5.0	U	5.0	0.87	ug/L		11/27/18 14:11	12/04/18 20:06	1
Anthracene	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 20:06	1
Benzidine	80	U	80	35	ug/L		11/27/18 14:11	12/04/18 20:06	1
Benzo[a]anthracene	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/04/18 20:06	1
Benzo[a]pyrene	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/04/18 20:06	1
Benzo[b]fluoranthene	5.0	U	5.0	1.2	ug/L		11/27/18 14:11	12/04/18 20:06	1
Benzo[g,h,i]perylene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/04/18 20:06	1
Benzo[k]fluoranthene	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/04/18 20:06	1
Bis(2-chloroethoxy)methane	5.0	U	5.0	0.75	ug/L		11/27/18 14:11	12/04/18 20:06	1
Bis(2-chloroethyl)ether	5.0	U	5.0	0.93	ug/L		11/27/18 14:11	12/04/18 20:06	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.2	ug/L		11/27/18 14:11	12/04/18 20:06	1
Butyl benzyl phthalate	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/04/18 20:06	1
Chrysene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
Dibenz(a,h)anthracene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/04/18 20:06	1
Diethyl phthalate	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
Dimethyl phthalate	5.0	U	5.0	0.91	ug/L		11/27/18 14:11	12/04/18 20:06	1
Di-n-butyl phthalate	5.0	U	5.0	1.6	ug/L		11/27/18 14:11	12/04/18 20:06	1
Di-n-octyl phthalate	5.0	U	5.0	1.2	ug/L		11/27/18 14:11	12/04/18 20:06	1
Fluoranthene	5.0	U	5.0	1.6	ug/L		11/27/18 14:11	12/04/18 20:06	1
Fluorene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
Hexachlorobenzene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
Hexachlorobutadiene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
Hexachlorocyclopentadiene	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 20:06	1
Hexachloroethane	5.0	U	5.0	0.60	ug/L		11/27/18 14:11	12/04/18 20:06	1
Indeno[1,2,3-cd]pyrene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/04/18 20:06	1
Isophorone	5.0	U	5.0	0.74	ug/L		11/27/18 14:11	12/04/18 20:06	1
Naphthalene	5.0	U	5.0	0.86	ug/L		11/27/18 14:11	12/04/18 20:06	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: EASTBERM2-11262018

Lab Sample ID: 480-145712-2

Date Collected: 11/26/18 15:20

Matrix: Water

Date Received: 11/26/18 17:45

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	5.0	U	5.0	0.81	ug/L	-	11/27/18 14:11	12/04/18 20:06	1
N-Nitrosodimethylamine	10	U	10	5.0	ug/L	-	11/27/18 14:11	12/04/18 20:06	1
N-Nitrosodi-n-propylamine	5.0	U	5.0	0.89	ug/L	-	11/27/18 14:11	12/04/18 20:06	1
N-Nitrosodiphenylamine	5.0	U	5.0	0.40	ug/L	-	11/27/18 14:11	12/04/18 20:06	1
Pentachlorophenol	10	U	10	1.6	ug/L	-	11/27/18 14:11	12/04/18 20:06	1
Phenanthrene	5.0	U	5.0	1.2	ug/L	-	11/27/18 14:11	12/04/18 20:06	1
Phenol	5.0	U	5.0	0.35	ug/L	-	11/27/18 14:11	12/04/18 20:06	1
Pyrene	5.0	U	5.0	1.4	ug/L	-	11/27/18 14:11	12/04/18 20:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	88		52 - 151	11/27/18 14:11	12/04/18 20:06	1
2-Fluorobiphenyl	81		44 - 120	11/27/18 14:11	12/04/18 20:06	1
2-Fluorophenol	52		17 - 120	11/27/18 14:11	12/04/18 20:06	1
Nitrobenzene-d5	87		15 - 314	11/27/18 14:11	12/04/18 20:06	1
Phenol-d5	39		8 - 424	11/27/18 14:11	12/04/18 20:06	1
p-Terphenyl-d14 (Surr)	90		22 - 125	11/27/18 14:11	12/04/18 20:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	4.3	J B	5.6	1.6	mg/L	-	11/29/18 07:51	11/29/18 11:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	13.6		4.0	4.0	mg/L	-		11/28/18 17:36	1

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM1-11262018

Lab Sample ID: 480-145712-3

Date Collected: 11/26/18 15:30

Matrix: Water

Date Received: 11/26/18 17:45

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.0	U	5.0	0.39	ug/L			11/30/18 13:38	1
1,1,1,2-Tetrachloroethane	5.0	U	5.0	0.26	ug/L			11/30/18 13:38	1
1,1,2-Trichloroethane	5.0	U	5.0	0.48	ug/L			11/30/18 13:38	1
1,1-Dichloroethane	5.0	U	5.0	0.59	ug/L			11/30/18 13:38	1
1,1-Dichloroethene	5.0	U	5.0	0.85	ug/L			11/30/18 13:38	1
1,2-Dichlorobenzene	5.0	U	5.0	0.44	ug/L			11/30/18 13:38	1
1,2-Dichloroethane	5.0	U	5.0	0.60	ug/L			11/30/18 13:38	1
1,2-Dichloroethene, Total	10	U	10	3.2	ug/L			11/30/18 13:38	1
1,2-Dichloropropane	5.0	U	5.0	0.61	ug/L			11/30/18 13:38	1
1,3-Dichlorobenzene	5.0	U	5.0	0.54	ug/L			11/30/18 13:38	1
1,4-Dichlorobenzene	5.0	U	5.0	0.51	ug/L			11/30/18 13:38	1
2-Chloroethyl vinyl ether	25	U	25	1.9	ug/L			11/30/18 13:38	1
Acrolein	100	U	100	17	ug/L			11/30/18 13:38	1
Acrylonitrile	50	U	50	1.9	ug/L			11/30/18 13:38	1
Benzene	1.8	J	5.0	0.60	ug/L			11/30/18 13:38	1
Bromoform	5.0	U	5.0	0.47	ug/L			11/30/18 13:38	1
Bromomethane	5.0	U	5.0	1.2	ug/L			11/30/18 13:38	1
Carbon tetrachloride	5.0	U	5.0	0.51	ug/L			11/30/18 13:38	1
Chlorobenzene	5.0	U	5.0	0.48	ug/L			11/30/18 13:38	1
Chlorodibromomethane	5.0	U	5.0	0.41	ug/L			11/30/18 13:38	1
Chloroethane	5.0	U	5.0	0.87	ug/L			11/30/18 13:38	1
Chloroform	5.0	U	5.0	0.54	ug/L			11/30/18 13:38	1
Chloromethane	5.0	U	5.0	0.64	ug/L			11/30/18 13:38	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.33	ug/L			11/30/18 13:38	1
Dichlorobromomethane	5.0	U	5.0	0.54	ug/L			11/30/18 13:38	1
Ethylbenzene	5.0	U	5.0	0.46	ug/L			11/30/18 13:38	1
Methylene Chloride	5.0	U	5.0	0.81	ug/L			11/30/18 13:38	1
m-Xylene & p-Xylene	1.3	J	10	1.1	ug/L			11/30/18 13:38	1
o-Xylene	0.71	J	5.0	0.43	ug/L			11/30/18 13:38	1
Tetrachloroethene	5.0	U	5.0	0.34	ug/L			11/30/18 13:38	1
Toluene	1.7	J	5.0	0.45	ug/L			11/30/18 13:38	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.59	ug/L			11/30/18 13:38	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.44	ug/L			11/30/18 13:38	1
Trichloroethene	5.0	U	5.0	0.60	ug/L			11/30/18 13:38	1
Vinyl chloride	5.0	U	5.0	0.75	ug/L			11/30/18 13:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		68 - 130					11/30/18 13:38	1
4-Bromofluorobenzene (Surr)	112		76 - 123					11/30/18 13:38	1
Dibromofluoromethane (Surr)	96		75 - 123					11/30/18 13:38	1
Toluene-d8 (Surr)	94		77 - 120					11/30/18 13:38	1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10	0.82	ug/L		11/29/18 14:22	12/04/18 23:53	1
1,2-Dichlorobenzene	10	U	10	5.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
1,2-Diphenylhydrazine	10	U	10	0.78	ug/L		11/29/18 14:22	12/04/18 23:53	1
1,3-Dichlorobenzene	10	U	10	0.69	ug/L		11/29/18 14:22	12/04/18 23:53	1
1,4-Dichlorobenzene	10	U	10	5.6	ug/L		11/29/18 14:22	12/04/18 23:53	1
2,2'-oxybis[1-chloropropane]	5.0	U	5.0	0.84	ug/L		11/29/18 14:22	12/04/18 23:53	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM1-11262018

Lab Sample ID: 480-145712-3

Date Collected: 11/26/18 15:30

Matrix: Water

Date Received: 11/26/18 17:45

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
2,4-Dichlorophenol	5.0	U	5.0	0.77	ug/L		11/29/18 14:22	12/04/18 23:53	1
2,4-Dimethylphenol	2.0	J	5.0	1.4	ug/L		11/29/18 14:22	12/04/18 23:53	1
2,4-Dinitrophenol	10	U	10	5.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
2,4-Dinitrotoluene	10	U	10	5.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
2,6-Dinitrotoluene	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
2-Chloronaphthalene	5.0	U	5.0	0.91	ug/L		11/29/18 14:22	12/04/18 23:53	1
2-Chlorophenol	5.0	U	5.0	0.66	ug/L		11/29/18 14:22	12/04/18 23:53	1
2-Nitrophenol	5.0	U	5.0	0.70	ug/L		11/29/18 14:22	12/04/18 23:53	1
3,3'-Dichlorobenzidine	5.0	U	5.0	0.82	ug/L		11/29/18 14:22	12/04/18 23:53	1
4,6-Dinitro-2-methylphenol	10	U	10	0.66	ug/L		11/29/18 14:22	12/04/18 23:53	1
4-Bromophenyl phenyl ether	5.0	U	5.0	1.4	ug/L		11/29/18 14:22	12/04/18 23:53	1
4-Chloro-3-methylphenol	5.0	U	5.0	1.1	ug/L		11/29/18 14:22	12/04/18 23:53	1
4-Chlorophenyl phenyl ether	5.0	U	5.0	1.3	ug/L		11/29/18 14:22	12/04/18 23:53	1
4-Nitrophenol	15	U	15	10	ug/L		11/29/18 14:22	12/04/18 23:53	1
Acenaphthene	5.0	U	5.0	0.81	ug/L		11/29/18 14:22	12/04/18 23:53	1
Acenaphthylene	5.0	U	5.0	0.87	ug/L		11/29/18 14:22	12/04/18 23:53	1
Anthracene	5.0	U	5.0	1.4	ug/L		11/29/18 14:22	12/04/18 23:53	1
Benzidine	80	U	80	35	ug/L		11/29/18 14:22	12/04/18 23:53	1
Benzo[a]anthracene	1.1	J	5.0	1.1	ug/L		11/29/18 14:22	12/04/18 23:53	1
Benzo[a]pyrene	5.0	U	5.0	1.3	ug/L		11/29/18 14:22	12/04/18 23:53	1
Benzo[b]fluoranthene	1.4	J	5.0	1.2	ug/L		11/29/18 14:22	12/04/18 23:53	1
Benzo[g,h,i]perylene	5.0	U	5.0	1.5	ug/L		11/29/18 14:22	12/04/18 23:53	1
Benzo[k]fluoranthene	5.0	U	5.0	1.3	ug/L		11/29/18 14:22	12/04/18 23:53	1
Bis(2-chloroethoxy)methane	5.0	U	5.0	0.75	ug/L		11/29/18 14:22	12/04/18 23:53	1
Bis(2-chloroethyl)ether	5.0	U	5.0	0.93	ug/L		11/29/18 14:22	12/04/18 23:53	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.2	ug/L		11/29/18 14:22	12/04/18 23:53	1
Butyl benzyl phthalate	5.0	U	5.0	1.1	ug/L		11/29/18 14:22	12/04/18 23:53	1
Chrysene	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
Dibenz(a,h)anthracene	5.0	U	5.0	1.5	ug/L		11/29/18 14:22	12/04/18 23:53	1
Diethyl phthalate	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
Dimethyl phthalate	5.0	U	5.0	0.91	ug/L		11/29/18 14:22	12/04/18 23:53	1
Di-n-butyl phthalate	5.0	U	5.0	1.6	ug/L		11/29/18 14:22	12/04/18 23:53	1
Di-n-octyl phthalate	5.0	U	5.0	1.2	ug/L		11/29/18 14:22	12/04/18 23:53	1
Fluoranthene	4.6	J	5.0	1.6	ug/L		11/29/18 14:22	12/04/18 23:53	1
Fluorene	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
Hexachlorobenzene	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
Hexachlorobutadiene	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
Hexachlorocyclopentadiene	10	U	10	5.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
Hexachloroethane	5.0	U	5.0	0.60	ug/L		11/29/18 14:22	12/04/18 23:53	1
Indeno[1,2,3-cd]pyrene	5.0	U	5.0	1.5	ug/L		11/29/18 14:22	12/04/18 23:53	1
Isophorone	5.0	U	5.0	0.74	ug/L		11/29/18 14:22	12/04/18 23:53	1
Naphthalene	5.0	U	5.0	0.86	ug/L		11/29/18 14:22	12/04/18 23:53	1
Nitrobenzene	5.0	U	5.0	0.81	ug/L		11/29/18 14:22	12/04/18 23:53	1
N-Nitrosodimethylamine	10	U	10	5.0	ug/L		11/29/18 14:22	12/04/18 23:53	1
N-Nitrosodi-n-propylamine	5.0	U	5.0	0.89	ug/L		11/29/18 14:22	12/04/18 23:53	1
N-Nitrosodiphenylamine	5.0	U	5.0	0.40	ug/L		11/29/18 14:22	12/04/18 23:53	1
Pentachlorophenol	10	U	10	1.6	ug/L		11/29/18 14:22	12/04/18 23:53	1
Phenanthrene	5.0	U	5.0	1.2	ug/L		11/29/18 14:22	12/04/18 23:53	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM1-11262018

Lab Sample ID: 480-145712-3

Date Collected: 11/26/18 15:30

Matrix: Water

Date Received: 11/26/18 17:45

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	5.0	U	5.0	0.35	ug/L		11/29/18 14:22	12/04/18 23:53	1
Pyrene	3.6	J	5.0	1.4	ug/L		11/29/18 14:22	12/04/18 23:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	112		52 - 151				11/29/18 14:22	12/04/18 23:53	1
2-Fluorobiphenyl	100		44 - 120				11/29/18 14:22	12/04/18 23:53	1
2-Fluorophenol	57		17 - 120				11/29/18 14:22	12/04/18 23:53	1
Nitrobenzene-d5	105		15 - 314				11/29/18 14:22	12/04/18 23:53	1
Phenol-d5	41		8 - 424				11/29/18 14:22	12/04/18 23:53	1
p-Terphenyl-d14 (Surr)	89		22 - 125				11/29/18 14:22	12/04/18 23:53	1

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.020	U	0.020	0.0068	mg/L		11/30/18 09:55	11/30/18 18:55	1
Arsenic	0.015	U	0.015	0.0056	mg/L		11/30/18 09:55	11/30/18 18:55	1
Beryllium	0.0020	U	0.0020	0.00030	mg/L		11/30/18 09:55	11/30/18 18:55	1
Cadmium	0.0020	U	0.0020	0.00050	mg/L		11/30/18 09:55	11/30/18 18:55	1
Chromium	0.0040	U	0.0040	0.0010	mg/L		11/30/18 09:55	11/30/18 18:55	1
Copper	0.010	U	0.010	0.0016	mg/L		11/30/18 09:55	11/30/18 18:55	1
Lead	0.010	U	0.010	0.0030	mg/L		11/30/18 09:55	11/30/18 18:55	1
Nickel	0.0016	J	0.010	0.0013	mg/L		11/30/18 09:55	11/30/18 18:55	1
Selenium	0.025	U	0.025	0.0087	mg/L		11/30/18 09:55	11/30/18 18:55	1
Silver	0.0060	U	0.0060	0.0017	mg/L		11/30/18 09:55	11/30/18 18:55	1
Thallium	0.020	U	0.020	0.010	mg/L		11/30/18 09:55	11/30/18 18:55	1
Zinc	0.013	B	0.010	0.0015	mg/L		11/30/18 09:55	11/30/18 18:55	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	0.00012	mg/L		11/29/18 12:55	11/29/18 16:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	8.7	B	5.0	1.4	mg/L		11/29/18 07:51	11/29/18 11:00	1
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		12/04/18 12:15	12/04/18 17:24	1
Ammonia	2.5		0.040	0.018	mg/L			12/04/18 14:02	2
Total Phosphorus	0.013		0.010	0.0050	mg/L			11/29/18 16:40	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	6.8		4.0	4.0	mg/L			11/28/18 17:36	1

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM2-11262018

Lab Sample ID: 480-145712-4

Date Collected: 11/26/18 15:35

Matrix: Water

Date Received: 11/26/18 17:45

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	20	U	20	1.5	ug/L			11/27/18 15:55	4
1,1,2,2-Tetrachloroethane	20	U	20	1.0	ug/L			11/27/18 15:55	4
1,1,2-Trichloroethane	20	U	20	1.9	ug/L			11/27/18 15:55	4
1,1-Dichloroethane	20	U	20	2.4	ug/L			11/27/18 15:55	4
1,1-Dichloroethene	20	U	20	3.4	ug/L			11/27/18 15:55	4
1,2-Dichlorobenzene	20	U	20	1.8	ug/L			11/27/18 15:55	4
1,2-Dichloroethane	20	U	20	2.4	ug/L			11/27/18 15:55	4
1,2-Dichloroethene, Total	40	U	40	13	ug/L			11/27/18 15:55	4
1,2-Dichloropropane	20	U	20	2.4	ug/L			11/27/18 15:55	4
1,3-Dichlorobenzene	20	U	20	2.2	ug/L			11/27/18 15:55	4
1,4-Dichlorobenzene	20	U	20	2.0	ug/L			11/27/18 15:55	4
2-Chloroethyl vinyl ether	100	U	100	7.4	ug/L			11/27/18 15:55	4
Acrolein	400	U	400	70	ug/L			11/27/18 15:55	4
Acrylonitrile	200	U	200	7.6	ug/L			11/27/18 15:55	4
Benzene	20	U	20	2.4	ug/L			11/27/18 15:55	4
Bromoform	20	U	20	1.9	ug/L			11/27/18 15:55	4
Bromomethane	20	U	20	4.8	ug/L			11/27/18 15:55	4
Carbon tetrachloride	20	U	20	2.0	ug/L			11/27/18 15:55	4
Chlorobenzene	20	U	20	1.9	ug/L			11/27/18 15:55	4
Chlorodibromomethane	20	U	20	1.7	ug/L			11/27/18 15:55	4
Chloroethane	20	U	20	3.5	ug/L			11/27/18 15:55	4
Chloroform	20	U	20	2.2	ug/L			11/27/18 15:55	4
Chloromethane	20	U	20	2.5	ug/L			11/27/18 15:55	4
cis-1,3-Dichloropropene	20	U	20	1.3	ug/L			11/27/18 15:55	4
Dichlorobromomethane	20	U	20	2.1	ug/L			11/27/18 15:55	4
Ethylbenzene	20	U	20	1.9	ug/L			11/27/18 15:55	4
Methylene Chloride	3.3	J	20	3.3	ug/L			11/27/18 15:55	4
m-Xylene & p-Xylene	40	U	40	4.3	ug/L			11/27/18 15:55	4
o-Xylene	20	U	20	1.7	ug/L			11/27/18 15:55	4
Tetrachloroethene	20	U	20	1.4	ug/L			11/27/18 15:55	4
Toluene	20	U	20	1.8	ug/L			11/27/18 15:55	4
trans-1,2-Dichloroethene	20	U	20	2.4	ug/L			11/27/18 15:55	4
trans-1,3-Dichloropropene	20	U	20	1.8	ug/L			11/27/18 15:55	4
Trichloroethene	20	U	20	2.4	ug/L			11/27/18 15:55	4
Vinyl chloride	20	U	20	3.0	ug/L			11/27/18 15:55	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		68 - 130		11/27/18 15:55	4
4-Bromofluorobenzene (Surr)	111		76 - 123		11/27/18 15:55	4
Dibromofluoromethane (Surr)	99		75 - 123		11/27/18 15:55	4
Toluene-d8 (Surr)	96		77 - 120		11/27/18 15:55	4

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10	0.82	ug/L		11/27/18 14:11	12/04/18 20:31	1
1,2-Dichlorobenzene	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
1,2-Diphenylhydrazine	10	U	10	0.78	ug/L		11/27/18 14:11	12/04/18 20:31	1
1,3-Dichlorobenzene	10	U	10	0.69	ug/L		11/27/18 14:11	12/04/18 20:31	1
1,4-Dichlorobenzene	10	U	10	5.6	ug/L		11/27/18 14:11	12/04/18 20:31	1
2,2'-oxybis[1-chloropropane]	5.0	U	5.0	0.84	ug/L		11/27/18 14:11	12/04/18 20:31	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
 Project/Site: Priority Pollutants

Job ID: 480-145712-1
 SDG: 480-145712-1

Client Sample ID: WESTBERM2-11262018

Lab Sample ID: 480-145712-4

Date Collected: 11/26/18 15:35

Matrix: Water

Date Received: 11/26/18 17:45

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
2,4-Dichlorophenol	5.0	U	5.0	0.77	ug/L		11/27/18 14:11	12/04/18 20:31	1
2,4-Dimethylphenol	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 20:31	1
2,4-Dinitrophenol	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
2,4-Dinitrotoluene	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
2,6-Dinitrotoluene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
2-Chloronaphthalene	5.0	U	5.0	0.91	ug/L		11/27/18 14:11	12/04/18 20:31	1
2-Chlorophenol	5.0	U	5.0	0.66	ug/L		11/27/18 14:11	12/04/18 20:31	1
2-Nitrophenol	5.0	U	5.0	0.70	ug/L		11/27/18 14:11	12/04/18 20:31	1
3,3'-Dichlorobenzidine	5.0	U	5.0	0.82	ug/L		11/27/18 14:11	12/04/18 20:31	1
4,6-Dinitro-2-methylphenol	10	U	10	0.66	ug/L		11/27/18 14:11	12/04/18 20:31	1
4-Bromophenyl phenyl ether	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 20:31	1
4-Chloro-3-methylphenol	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/04/18 20:31	1
4-Chlorophenyl phenyl ether	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/04/18 20:31	1
4-Nitrophenol	15	U	15	10	ug/L		11/27/18 14:11	12/04/18 20:31	1
Acenaphthene	5.0	U	5.0	0.81	ug/L		11/27/18 14:11	12/04/18 20:31	1
Acenaphthylene	5.0	U	5.0	0.87	ug/L		11/27/18 14:11	12/04/18 20:31	1
Anthracene	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 20:31	1
Benzidine	80	U	80	35	ug/L		11/27/18 14:11	12/04/18 20:31	1
Benzo[a]anthracene	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/04/18 20:31	1
Benzo[a]pyrene	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/04/18 20:31	1
Benzo[b]fluoranthene	5.0	U	5.0	1.2	ug/L		11/27/18 14:11	12/04/18 20:31	1
Benzo[g,h,i]perylene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/04/18 20:31	1
Benzo[k]fluoranthene	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/04/18 20:31	1
Bis(2-chloroethoxy)methane	5.0	U	5.0	0.75	ug/L		11/27/18 14:11	12/04/18 20:31	1
Bis(2-chloroethyl)ether	5.0	U	5.0	0.93	ug/L		11/27/18 14:11	12/04/18 20:31	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.2	ug/L		11/27/18 14:11	12/04/18 20:31	1
Butyl benzyl phthalate	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/04/18 20:31	1
Chrysene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
Dibenz(a,h)anthracene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/04/18 20:31	1
Diethyl phthalate	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
Dimethyl phthalate	5.0	U	5.0	0.91	ug/L		11/27/18 14:11	12/04/18 20:31	1
Di-n-butyl phthalate	5.0	U	5.0	1.6	ug/L		11/27/18 14:11	12/04/18 20:31	1
Di-n-octyl phthalate	5.0	U	5.0	1.2	ug/L		11/27/18 14:11	12/04/18 20:31	1
Fluoranthene	5.0	U	5.0	1.6	ug/L		11/27/18 14:11	12/04/18 20:31	1
Fluorene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
Hexachlorobenzene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
Hexachlorobutadiene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
Hexachlorocyclopentadiene	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
Hexachloroethane	5.0	U	5.0	0.60	ug/L		11/27/18 14:11	12/04/18 20:31	1
Indeno[1,2,3-cd]pyrene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/04/18 20:31	1
Isophorone	5.0	U	5.0	0.74	ug/L		11/27/18 14:11	12/04/18 20:31	1
Naphthalene	5.0	U	5.0	0.86	ug/L		11/27/18 14:11	12/04/18 20:31	1
Nitrobenzene	5.0	U	5.0	0.81	ug/L		11/27/18 14:11	12/04/18 20:31	1
N-Nitrosodimethylamine	10	U	10	5.0	ug/L		11/27/18 14:11	12/04/18 20:31	1
N-Nitrosodi-n-propylamine	5.0	U	5.0	0.89	ug/L		11/27/18 14:11	12/04/18 20:31	1
N-Nitrosodiphenylamine	5.0	U	5.0	0.40	ug/L		11/27/18 14:11	12/04/18 20:31	1
Pentachlorophenol	10	U	10	1.6	ug/L		11/27/18 14:11	12/04/18 20:31	1
Phenanthrene	1.5	J	5.0	1.2	ug/L		11/27/18 14:11	12/04/18 20:31	1

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM2-11262018

Lab Sample ID: 480-145712-4

Date Collected: 11/26/18 15:35

Matrix: Water

Date Received: 11/26/18 17:45

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	5.0	U	5.0	0.35	ug/L		11/27/18 14:11	12/04/18 20:31	1
Pyrene	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/04/18 20:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	96		52 - 151				11/27/18 14:11	12/04/18 20:31	1
2-Fluorobiphenyl	79		44 - 120				11/27/18 14:11	12/04/18 20:31	1
2-Fluorophenol	45		17 - 120				11/27/18 14:11	12/04/18 20:31	1
Nitrobenzene-d5	87		15 - 314				11/27/18 14:11	12/04/18 20:31	1
Phenol-d5	30		8 - 424				11/27/18 14:11	12/04/18 20:31	1
p-Terphenyl-d14 (Surr)	70		22 - 125				11/27/18 14:11	12/04/18 20:31	1

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.020	U	0.020	0.0068	mg/L		11/30/18 09:55	11/30/18 19:09	1
Arsenic	0.015	U	0.015	0.0056	mg/L		11/30/18 09:55	11/30/18 19:09	1
Beryllium	0.0020	U	0.0020	0.00030	mg/L		11/30/18 09:55	11/30/18 19:09	1
Cadmium	0.0020	U	0.0020	0.00050	mg/L		11/30/18 09:55	11/30/18 19:09	1
Chromium	0.0040	U	0.0040	0.0010	mg/L		11/30/18 09:55	11/30/18 19:09	1
Copper	0.0023	J	0.010	0.0016	mg/L		11/30/18 09:55	11/30/18 19:09	1
Lead	0.010	U	0.010	0.0030	mg/L		11/30/18 09:55	11/30/18 19:09	1
Nickel	0.0018	J	0.010	0.0013	mg/L		11/30/18 09:55	11/30/18 19:09	1
Selenium	0.025	U	0.025	0.0087	mg/L		11/30/18 09:55	11/30/18 19:09	1
Silver	0.0060	U	0.0060	0.0017	mg/L		11/30/18 09:55	11/30/18 19:09	1
Thallium	0.020	U	0.020	0.010	mg/L		11/30/18 09:55	11/30/18 19:09	1
Zinc	0.015	B	0.010	0.0015	mg/L		11/30/18 09:55	11/30/18 19:09	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	0.00012	mg/L		11/29/18 12:00	11/29/18 14:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	2.4	J B	5.0	1.4	mg/L		11/29/18 07:51	11/29/18 11:00	1
Cyanide, Total	0.011		0.010	0.0050	mg/L		12/04/18 12:15	12/04/18 17:25	1
Ammonia	0.30	B	0.020	0.0090	mg/L			11/28/18 17:16	1
Total Phosphorus	0.010	U	0.010	0.0050	mg/L			11/28/18 09:20	1
Biochemical Oxygen Demand	2.8		2.0	2.0	mg/L			11/27/18 21:06	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	15.6		4.0	4.0	mg/L			11/28/18 17:36	1

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM3-11262018

Lab Sample ID: 480-145712-5

Date Collected: 11/26/18 15:40

Matrix: Water

Date Received: 11/26/18 17:45

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	20	U	20	1.5	ug/L			11/27/18 16:18	4
1,1,2,2-Tetrachloroethane	20	U	20	1.0	ug/L			11/27/18 16:18	4
1,1,2-Trichloroethane	20	U	20	1.9	ug/L			11/27/18 16:18	4
1,1-Dichloroethane	20	U	20	2.4	ug/L			11/27/18 16:18	4
1,1-Dichloroethene	20	U	20	3.4	ug/L			11/27/18 16:18	4
1,2-Dichlorobenzene	20	U	20	1.8	ug/L			11/27/18 16:18	4
1,2-Dichloroethane	20	U	20	2.4	ug/L			11/27/18 16:18	4
1,2-Dichloroethene, Total	40	U	40	13	ug/L			11/27/18 16:18	4
1,2-Dichloropropane	20	U	20	2.4	ug/L			11/27/18 16:18	4
1,3-Dichlorobenzene	20	U	20	2.2	ug/L			11/27/18 16:18	4
1,4-Dichlorobenzene	20	U	20	2.0	ug/L			11/27/18 16:18	4
2-Chloroethyl vinyl ether	100	U	100	7.4	ug/L			11/27/18 16:18	4
Acrolein	400	U	400	70	ug/L			11/27/18 16:18	4
Acrylonitrile	200	U	200	7.6	ug/L			11/27/18 16:18	4
Benzene	20	U	20	2.4	ug/L			11/27/18 16:18	4
Bromoform	20	U	20	1.9	ug/L			11/27/18 16:18	4
Bromomethane	20	U	20	4.8	ug/L			11/27/18 16:18	4
Carbon tetrachloride	20	U	20	2.0	ug/L			11/27/18 16:18	4
Chlorobenzene	20	U	20	1.9	ug/L			11/27/18 16:18	4
Chlorodibromomethane	20	U	20	1.7	ug/L			11/27/18 16:18	4
Chloroethane	20	U	20	3.5	ug/L			11/27/18 16:18	4
Chloroform	20	U	20	2.2	ug/L			11/27/18 16:18	4
Chloromethane	20	U	20	2.5	ug/L			11/27/18 16:18	4
cis-1,3-Dichloropropene	20	U	20	1.3	ug/L			11/27/18 16:18	4
Dichlorobromomethane	20	U	20	2.1	ug/L			11/27/18 16:18	4
Ethylbenzene	20	U	20	1.9	ug/L			11/27/18 16:18	4
Methylene Chloride	3.9	J	20	3.3	ug/L			11/27/18 16:18	4
m-Xylene & p-Xylene	40	U	40	4.3	ug/L			11/27/18 16:18	4
o-Xylene	20	U	20	1.7	ug/L			11/27/18 16:18	4
Tetrachloroethene	20	U	20	1.4	ug/L			11/27/18 16:18	4
Toluene	20	U	20	1.8	ug/L			11/27/18 16:18	4
trans-1,2-Dichloroethene	20	U	20	2.4	ug/L			11/27/18 16:18	4
trans-1,3-Dichloropropene	20	U	20	1.8	ug/L			11/27/18 16:18	4
Trichloroethene	20	U	20	2.4	ug/L			11/27/18 16:18	4
Vinyl chloride	20	U	20	3.0	ug/L			11/27/18 16:18	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		68 - 130		11/27/18 16:18	4
4-Bromofluorobenzene (Surr)	113		76 - 123		11/27/18 16:18	4
Dibromofluoromethane (Surr)	96		75 - 123		11/27/18 16:18	4
Toluene-d8 (Surr)	96		77 - 120		11/27/18 16:18	4

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	2000	U	2000	160	ug/L		11/27/18 14:11	12/03/18 21:39	200
1,2-Dichlorobenzene	2000	U	2000	1000	ug/L		11/27/18 14:11	12/03/18 21:39	200
1,2-Diphenylhydrazine	2000	U	2000	160	ug/L		11/27/18 14:11	12/03/18 21:39	200
1,3-Dichlorobenzene	2000	U	2000	140	ug/L		11/27/18 14:11	12/03/18 21:39	200
1,4-Dichlorobenzene	2000	U	2000	1100	ug/L		11/27/18 14:11	12/03/18 21:39	200
2,2'-oxybis[1-chloropropane]	1000	U	1000	170	ug/L		11/27/18 14:11	12/03/18 21:39	200

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM3-11262018

Lab Sample ID: 480-145712-5

Date Collected: 11/26/18 15:40

Matrix: Water

Date Received: 11/26/18 17:45

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	1000	U	1000	200	ug/L		11/27/18 14:11	12/03/18 21:39	200
2,4-Dichlorophenol	1000	U	1000	150	ug/L		11/27/18 14:11	12/03/18 21:39	200
2,4-Dimethylphenol	1000	U	1000	280	ug/L		11/27/18 14:11	12/03/18 21:39	200
2,4-Dinitrophenol	2000	U	2000	1000	ug/L		11/27/18 14:11	12/03/18 21:39	200
2,4-Dinitrotoluene	2000	U	2000	1000	ug/L		11/27/18 14:11	12/03/18 21:39	200
2,6-Dinitrotoluene	1000	U	1000	200	ug/L		11/27/18 14:11	12/03/18 21:39	200
2-Chloronaphthalene	1000	U	1000	180	ug/L		11/27/18 14:11	12/03/18 21:39	200
2-Chlorophenol	1000	U	1000	130	ug/L		11/27/18 14:11	12/03/18 21:39	200
2-Nitrophenol	1000	U	1000	140	ug/L		11/27/18 14:11	12/03/18 21:39	200
3,3'-Dichlorobenzidine	1000	U	1000	160	ug/L		11/27/18 14:11	12/03/18 21:39	200
4,6-Dinitro-2-methylphenol	2000	U	2000	130	ug/L		11/27/18 14:11	12/03/18 21:39	200
4-Bromophenyl phenyl ether	1000	U	1000	280	ug/L		11/27/18 14:11	12/03/18 21:39	200
4-Chloro-3-methylphenol	1000	U	1000	220	ug/L		11/27/18 14:11	12/03/18 21:39	200
4-Chlorophenyl phenyl ether	1000	U	1000	260	ug/L		11/27/18 14:11	12/03/18 21:39	200
4-Nitrophenol	3000	U	3000	2000	ug/L		11/27/18 14:11	12/03/18 21:39	200
Acenaphthene	1000	U	1000	160	ug/L		11/27/18 14:11	12/03/18 21:39	200
Acenaphthylene	1000	U	1000	170	ug/L		11/27/18 14:11	12/03/18 21:39	200
Anthracene	1000	U	1000	280	ug/L		11/27/18 14:11	12/03/18 21:39	200
Benzidine	16000	U	16000	7000	ug/L		11/27/18 14:11	12/03/18 21:39	200
Benzo[a]anthracene	250	J	1000	220	ug/L		11/27/18 14:11	12/03/18 21:39	200
Benzo[a]pyrene	1000	U	1000	260	ug/L		11/27/18 14:11	12/03/18 21:39	200
Benzo[b]fluoranthene	1000	U	1000	240	ug/L		11/27/18 14:11	12/03/18 21:39	200
Benzo[g,h,i]perylene	1000	U	1000	300	ug/L		11/27/18 14:11	12/03/18 21:39	200
Benzo[k]fluoranthene	1000	U	1000	260	ug/L		11/27/18 14:11	12/03/18 21:39	200
Bis(2-chloroethoxy)methane	1000	U	1000	150	ug/L		11/27/18 14:11	12/03/18 21:39	200
Bis(2-chloroethyl)ether	1000	U	1000	190	ug/L		11/27/18 14:11	12/03/18 21:39	200
Bis(2-ethylhexyl) phthalate	2000	U	2000	240	ug/L		11/27/18 14:11	12/03/18 21:39	200
Butyl benzyl phthalate	1000	U	1000	220	ug/L		11/27/18 14:11	12/03/18 21:39	200
Chrysene	250	J	1000	200	ug/L		11/27/18 14:11	12/03/18 21:39	200
Dibenz(a,h)anthracene	1000	U	1000	300	ug/L		11/27/18 14:11	12/03/18 21:39	200
Diethyl phthalate	1000	U	1000	200	ug/L		11/27/18 14:11	12/03/18 21:39	200
Dimethyl phthalate	1000	U	1000	180	ug/L		11/27/18 14:11	12/03/18 21:39	200
Di-n-butyl phthalate	1000	U	1000	320	ug/L		11/27/18 14:11	12/03/18 21:39	200
Di-n-octyl phthalate	1000	U	1000	240	ug/L		11/27/18 14:11	12/03/18 21:39	200
Fluoranthene	700	J	1000	320	ug/L		11/27/18 14:11	12/03/18 21:39	200
Fluorene	250	J	1000	200	ug/L		11/27/18 14:11	12/03/18 21:39	200
Hexachlorobenzene	1000	U	1000	200	ug/L		11/27/18 14:11	12/03/18 21:39	200
Hexachlorobutadiene	1000	U	1000	200	ug/L		11/27/18 14:11	12/03/18 21:39	200
Hexachlorocyclopentadiene	2000	U	2000	1000	ug/L		11/27/18 14:11	12/03/18 21:39	200
Hexachloroethane	1000	U	1000	120	ug/L		11/27/18 14:11	12/03/18 21:39	200
Indeno[1,2,3-cd]pyrene	1000	U	1000	300	ug/L		11/27/18 14:11	12/03/18 21:39	200
Isophorone	1000	U	1000	150	ug/L		11/27/18 14:11	12/03/18 21:39	200
Naphthalene	960	J	1000	170	ug/L		11/27/18 14:11	12/03/18 21:39	200
Nitrobenzene	1000	U	1000	160	ug/L		11/27/18 14:11	12/03/18 21:39	200
N-Nitrosodimethylamine	2000	U	2000	1000	ug/L		11/27/18 14:11	12/03/18 21:39	200
N-Nitrosodi-n-propylamine	1000	U	1000	180	ug/L		11/27/18 14:11	12/03/18 21:39	200
N-Nitrosodiphenylamine	1000	U	1000	79	ug/L		11/27/18 14:11	12/03/18 21:39	200
Pentachlorophenol	2000	U	2000	320	ug/L		11/27/18 14:11	12/03/18 21:39	200
Phenanthrene	1100		1000	240	ug/L		11/27/18 14:11	12/03/18 21:39	200

Eurofins TestAmerica, Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM3-11262018

Lab Sample ID: 480-145712-5

Date Collected: 11/26/18 15:40

Matrix: Water

Date Received: 11/26/18 17:45

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	1000	U	1000	70	ug/L		11/27/18 14:11	12/03/18 21:39	200
Pyrene	550	J	1000	280	ug/L		11/27/18 14:11	12/03/18 21:39	200
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	0	X	52 - 151				11/27/18 14:11	12/03/18 21:39	200
2-Fluorobiphenyl	0	X	44 - 120				11/27/18 14:11	12/03/18 21:39	200
2-Fluorophenol	0	X	17 - 120				11/27/18 14:11	12/03/18 21:39	200
Nitrobenzene-d5	0	X	15 - 314				11/27/18 14:11	12/03/18 21:39	200
Phenol-d5	0	X	8 - 424				11/27/18 14:11	12/03/18 21:39	200
p-Terphenyl-d14 (Surr)	0	X	22 - 125				11/27/18 14:11	12/03/18 21:39	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.020	U	0.020	0.0068	mg/L		11/30/18 09:55	11/30/18 19:13	1
Arsenic	0.015	U	0.015	0.0056	mg/L		11/30/18 09:55	11/30/18 19:13	1
Beryllium	0.0020	U	0.0020	0.00030	mg/L		11/30/18 09:55	11/30/18 19:13	1
Cadmium	0.0020	U	0.0020	0.00050	mg/L		11/30/18 09:55	11/30/18 19:13	1
Chromium	0.0018	J	0.0040	0.0010	mg/L		11/30/18 09:55	11/30/18 19:13	1
Copper	0.0028	J	0.010	0.0016	mg/L		11/30/18 09:55	11/30/18 19:13	1
Lead	0.010	U	0.010	0.0030	mg/L		11/30/18 09:55	11/30/18 19:13	1
Nickel	0.0029	J	0.010	0.0013	mg/L		11/30/18 09:55	11/30/18 19:13	1
Selenium	0.025	U	0.025	0.0087	mg/L		11/30/18 09:55	11/30/18 19:13	1
Silver	0.0060	U	0.0060	0.0017	mg/L		11/30/18 09:55	11/30/18 19:13	1
Thallium	0.020	U	0.020	0.010	mg/L		11/30/18 09:55	11/30/18 19:13	1
Zinc	0.017	B	0.010	0.0015	mg/L		11/30/18 09:55	11/30/18 19:13	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	0.00012	mg/L		11/29/18 12:00	11/29/18 14:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	2.4	J B	4.9	1.4	mg/L		11/29/18 07:51	11/29/18 11:00	1
Cyanide, Total	0.011		0.010	0.0050	mg/L		12/04/18 12:15	12/04/18 17:27	1
Ammonia	0.37	B	0.020	0.0090	mg/L			11/28/18 17:17	1
Total Phosphorus	0.011		0.010	0.0050	mg/L			11/28/18 09:20	1
Biochemical Oxygen Demand	2.6		2.0	2.0	mg/L			11/27/18 21:06	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	16.4		4.0	4.0	mg/L			11/28/18 17:36	1

Client Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM1_11282018

Lab Sample ID: 480-145793-1

Date Collected: 11/28/18 15:30

Matrix: Water

Date Received: 11/28/18 15:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	3.6	b	2.0	2.0	mg/L			11/30/18 09:00	1

1

2

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Surrogate Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (68-130)	BFB (76-123)	DBFM (75-123)	TOL (77-120)
480-145712-1	EASTBERM1-11262018	96	110	97	91
480-145712-3	WESTBERM1-11262018	96	112	96	94
480-145712-4	WESTBERM2-11262018	105	111	99	96
480-145712-5	WESTBERM3-11262018	107	113	96	96
LCS 480-447541/30	Lab Control Sample	99	109	98	96
LCS 480-448288/5	Lab Control Sample	93	112	93	95
MB 480-447541/32	Method Blank	109	120	107	101
MB 480-448288/7	Method Blank	103	113	96	94

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (52-151)	FBP (44-120)	2FP (17-120)	NBZ (15-314)	PHL (8-424)	TPHd14 (22-125)
480-145712-1	EASTBERM1-11262018	87	81	50	87	36	91
480-145712-2	EASTBERM2-11262018	88	81	52	87	39	90
480-145712-3	WESTBERM1-11262018	112	100	57	105	41	89
480-145712-4	WESTBERM2-11262018	96	79	45	87	30	70
480-145712-5	WESTBERM3-11262018	0 X	0 X	0 X	0 X	0 X	0 X
LCS 480-447670/2-A	Lab Control Sample	82	78	47	80	34	87
LCS 480-448157/2-A	Lab Control Sample	100	85	49	90	36	97
LCSD 480-447670/3-A	Lab Control Sample Dup	87	77	47	81	35	91
LCSD 480-448157/3-A	Lab Control Sample Dup	104	94	50	94	36	105
MB 480-447670/1-A	Method Blank	68	80	49	88	35	89
MB 480-448157/1-A	Method Blank	77	94	52	97	38	102

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL = Phenol-d5
TPHd14 = p-Terphenyl-d14 (Surr)

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-447541/32
Matrix: Water
Analysis Batch: 447541

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	5.0	U	5.0	0.39	ug/L			11/27/18 12:14	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.26	ug/L			11/27/18 12:14	1
1,1,2-Trichloroethane	5.0	U	5.0	0.48	ug/L			11/27/18 12:14	1
1,1-Dichloroethane	5.0	U	5.0	0.59	ug/L			11/27/18 12:14	1
1,1-Dichloroethene	5.0	U	5.0	0.85	ug/L			11/27/18 12:14	1
1,2-Dichlorobenzene	5.0	U	5.0	0.44	ug/L			11/27/18 12:14	1
1,2-Dichloroethane	5.0	U	5.0	0.60	ug/L			11/27/18 12:14	1
1,2-Dichloroethene, Total	10	U	10	3.2	ug/L			11/27/18 12:14	1
1,2-Dichloropropane	5.0	U	5.0	0.61	ug/L			11/27/18 12:14	1
1,3-Dichlorobenzene	5.0	U	5.0	0.54	ug/L			11/27/18 12:14	1
1,4-Dichlorobenzene	5.0	U	5.0	0.51	ug/L			11/27/18 12:14	1
2-Chloroethyl vinyl ether	25	U	25	1.9	ug/L			11/27/18 12:14	1
Acrolein	100	U	100	17	ug/L			11/27/18 12:14	1
Acrylonitrile	50	U	50	1.9	ug/L			11/27/18 12:14	1
Benzene	5.0	U	5.0	0.60	ug/L			11/27/18 12:14	1
Bromoform	5.0	U	5.0	0.47	ug/L			11/27/18 12:14	1
Bromomethane	5.0	U	5.0	1.2	ug/L			11/27/18 12:14	1
Carbon tetrachloride	5.0	U	5.0	0.51	ug/L			11/27/18 12:14	1
Chlorobenzene	2.50	J	5.0	0.48	ug/L			11/27/18 12:14	1
Chlorodibromomethane	5.0	U	5.0	0.41	ug/L			11/27/18 12:14	1
Chloroethane	5.0	U	5.0	0.87	ug/L			11/27/18 12:14	1
Chloroform	5.0	U	5.0	0.54	ug/L			11/27/18 12:14	1
Chloromethane	5.0	U	5.0	0.64	ug/L			11/27/18 12:14	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.33	ug/L			11/27/18 12:14	1
Dichlorobromomethane	5.0	U	5.0	0.54	ug/L			11/27/18 12:14	1
Ethylbenzene	5.0	U	5.0	0.46	ug/L			11/27/18 12:14	1
Methylene Chloride	5.0	U	5.0	0.81	ug/L			11/27/18 12:14	1
m-Xylene & p-Xylene	10	U	10	1.1	ug/L			11/27/18 12:14	1
o-Xylene	5.0	U	5.0	0.43	ug/L			11/27/18 12:14	1
Tetrachloroethene	5.0	U	5.0	0.34	ug/L			11/27/18 12:14	1
Toluene	5.0	U	5.0	0.45	ug/L			11/27/18 12:14	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.59	ug/L			11/27/18 12:14	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.44	ug/L			11/27/18 12:14	1
Trichloroethene	5.0	U	5.0	0.60	ug/L			11/27/18 12:14	1
Vinyl chloride	5.0	U	5.0	0.75	ug/L			11/27/18 12:14	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	109		68 - 130		11/27/18 12:14	1
4-Bromofluorobenzene (Surr)	120		76 - 123		11/27/18 12:14	1
Dibromofluoromethane (Surr)	107		75 - 123		11/27/18 12:14	1
Toluene-d8 (Surr)	101		77 - 120		11/27/18 12:14	1

Lab Sample ID: LCS 480-447541/30
Matrix: Water
Analysis Batch: 447541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-447541/30
Matrix: Water
Analysis Batch: 447541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	20.0	18.9		ug/L		94	46 - 157
1,1,2-Trichloroethane	20.0	19.5		ug/L		97	52 - 150
1,1-Dichloroethane	20.0	21.9		ug/L		109	59 - 155
1,1-Dichloroethene	20.0	21.9		ug/L		110	1 - 234
1,2-Dichlorobenzene	20.0	19.3		ug/L		97	18 - 190
1,2-Dichloroethane	20.0	21.8		ug/L		109	49 - 155
1,2-Dichloropropane	20.0	21.4		ug/L		107	1 - 210
1,3-Dichlorobenzene	20.0	19.1		ug/L		95	59 - 156
1,4-Dichlorobenzene	20.0	19.2		ug/L		96	18 - 190
2-Chloroethyl vinyl ether	20.0	20.7	J	ug/L		104	1 - 305
Benzene	20.0	21.5		ug/L		108	37 - 151
Bromoform	20.0	19.4		ug/L		97	45 - 169
Bromomethane	20.0	19.0		ug/L		95	1 - 242
Carbon tetrachloride	20.0	21.6		ug/L		108	70 - 140
Chlorobenzene	20.0	20.2		ug/L		101	37 - 160
Chlorodibromomethane	20.0	19.6		ug/L		98	53 - 149
Chloroethane	20.0	20.1		ug/L		100	14 - 230
Chloroform	20.0	21.2		ug/L		106	51 - 138
Chloromethane	20.0	22.5		ug/L		113	1 - 273
cis-1,3-Dichloropropene	20.0	21.0		ug/L		105	1 - 227
Dichlorobromomethane	20.0	21.2		ug/L		106	35 - 155
Ethylbenzene	20.0	20.6		ug/L		103	37 - 162
Methylene Chloride	20.0	20.3		ug/L		101	1 - 221
Tetrachloroethene	20.0	20.7		ug/L		103	64 - 148
Toluene	20.0	20.2		ug/L		101	47 - 150
trans-1,2-Dichloroethene	20.0	21.5		ug/L		108	54 - 156
trans-1,3-Dichloropropene	20.0	19.9		ug/L		100	17 - 183
Trichloroethene	20.0	21.2		ug/L		106	71 - 157
Vinyl chloride	20.0	18.4		ug/L		92	1 - 251

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		68 - 130
4-Bromofluorobenzene (Surr)	109		76 - 123
Dibromofluoromethane (Surr)	98		75 - 123
Toluene-d8 (Surr)	96		77 - 120

Lab Sample ID: MB 480-448288/7
Matrix: Water
Analysis Batch: 448288

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.0	U	5.0	0.39	ug/L			11/30/18 10:19	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	0.26	ug/L			11/30/18 10:19	1
1,1,2-Trichloroethane	5.0	U	5.0	0.48	ug/L			11/30/18 10:19	1
1,1-Dichloroethane	5.0	U	5.0	0.59	ug/L			11/30/18 10:19	1
1,1-Dichloroethene	5.0	U	5.0	0.85	ug/L			11/30/18 10:19	1
1,2-Dichlorobenzene	5.0	U	5.0	0.44	ug/L			11/30/18 10:19	1
1,2-Dichloroethane	5.0	U	5.0	0.60	ug/L			11/30/18 10:19	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-448288/7
Matrix: Water
Analysis Batch: 448288

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethene, Total	10	U	10	3.2	ug/L			11/30/18 10:19	1
1,2-Dichloropropane	5.0	U	5.0	0.61	ug/L			11/30/18 10:19	1
1,3-Dichlorobenzene	5.0	U	5.0	0.54	ug/L			11/30/18 10:19	1
1,4-Dichlorobenzene	5.0	U	5.0	0.51	ug/L			11/30/18 10:19	1
2-Chloroethyl vinyl ether	25	U	25	1.9	ug/L			11/30/18 10:19	1
Acrolein	100	U	100	17	ug/L			11/30/18 10:19	1
Acrylonitrile	50	U	50	1.9	ug/L			11/30/18 10:19	1
Benzene	5.0	U	5.0	0.60	ug/L			11/30/18 10:19	1
Bromoform	5.0	U	5.0	0.47	ug/L			11/30/18 10:19	1
Bromomethane	5.0	U	5.0	1.2	ug/L			11/30/18 10:19	1
Carbon tetrachloride	5.0	U	5.0	0.51	ug/L			11/30/18 10:19	1
Chlorobenzene	5.0	U	5.0	0.48	ug/L			11/30/18 10:19	1
Chlorodibromomethane	5.0	U	5.0	0.41	ug/L			11/30/18 10:19	1
Chloroethane	5.0	U	5.0	0.87	ug/L			11/30/18 10:19	1
Chloroform	5.0	U	5.0	0.54	ug/L			11/30/18 10:19	1
Chloromethane	5.0	U	5.0	0.64	ug/L			11/30/18 10:19	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.33	ug/L			11/30/18 10:19	1
Dichlorobromomethane	5.0	U	5.0	0.54	ug/L			11/30/18 10:19	1
Ethylbenzene	5.0	U	5.0	0.46	ug/L			11/30/18 10:19	1
Methylene Chloride	5.0	U	5.0	0.81	ug/L			11/30/18 10:19	1
m-Xylene & p-Xylene	10	U	10	1.1	ug/L			11/30/18 10:19	1
o-Xylene	5.0	U	5.0	0.43	ug/L			11/30/18 10:19	1
Tetrachloroethene	5.0	U	5.0	0.34	ug/L			11/30/18 10:19	1
Toluene	5.0	U	5.0	0.45	ug/L			11/30/18 10:19	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.59	ug/L			11/30/18 10:19	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.44	ug/L			11/30/18 10:19	1
Trichloroethene	5.0	U	5.0	0.60	ug/L			11/30/18 10:19	1
Vinyl chloride	5.0	U	5.0	0.75	ug/L			11/30/18 10:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		68 - 130		11/30/18 10:19	1
4-Bromofluorobenzene (Surr)	113		76 - 123		11/30/18 10:19	1
Dibromofluoromethane (Surr)	96		75 - 123		11/30/18 10:19	1
Toluene-d8 (Surr)	94		77 - 120		11/30/18 10:19	1

Lab Sample ID: LCS 480-448288/5
Matrix: Water
Analysis Batch: 448288

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	17.2		ug/L		86	52 - 162
1,1,1,2-Tetrachloroethane	20.0	19.1		ug/L		96	46 - 157
1,1,2-Trichloroethane	20.0	16.9		ug/L		84	52 - 150
1,1-Dichloroethane	20.0	17.2		ug/L		86	59 - 155
1,1-Dichloroethene	20.0	17.8		ug/L		89	1 - 234
1,2-Dichlorobenzene	20.0	17.5		ug/L		88	18 - 190
1,2-Dichloroethane	20.0	17.4		ug/L		87	49 - 155
1,2-Dichloropropane	20.0	16.9		ug/L		84	1 - 210

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-448288/5
Matrix: Water
Analysis Batch: 448288

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	20.0	17.5		ug/L		88	59 - 156
1,4-Dichlorobenzene	20.0	17.5		ug/L		87	18 - 190
2-Chloroethyl vinyl ether	20.0	17.4	J	ug/L		87	1 - 305
Benzene	20.0	16.9		ug/L		84	37 - 151
Bromoform	20.0	17.6		ug/L		88	45 - 169
Bromomethane	20.0	15.0		ug/L		75	1 - 242
Carbon tetrachloride	20.0	17.1		ug/L		85	70 - 140
Chlorobenzene	20.0	16.8		ug/L		84	37 - 160
Chlorodibromomethane	20.0	16.3		ug/L		81	53 - 149
Chloroethane	20.0	15.0		ug/L		75	14 - 230
Chloroform	20.0	17.0		ug/L		85	51 - 138
Chloromethane	20.0	15.9		ug/L		79	1 - 273
cis-1,3-Dichloropropene	20.0	16.8		ug/L		84	1 - 227
Dichlorobromomethane	20.0	17.1		ug/L		86	35 - 155
Ethylbenzene	20.0	17.1		ug/L		86	37 - 162
Methylene Chloride	20.0	15.9		ug/L		80	1 - 221
Tetrachloroethene	20.0	16.8		ug/L		84	64 - 148
Toluene	20.0	16.9		ug/L		85	47 - 150
trans-1,2-Dichloroethene	20.0	17.3		ug/L		87	54 - 156
trans-1,3-Dichloropropene	20.0	16.9		ug/L		85	17 - 183
Trichloroethene	20.0	17.4		ug/L		87	71 - 157
Vinyl chloride	20.0	13.8		ug/L		69	1 - 251

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		68 - 130
4-Bromofluorobenzene (Surr)	112		76 - 123
Dibromofluoromethane (Surr)	93		75 - 123
Toluene-d8 (Surr)	95		77 - 120

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-447670/1-A
Matrix: Water
Analysis Batch: 448743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 447670

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10	0.82	ug/L		11/27/18 14:11	12/03/18 17:03	1
1,2-Dichlorobenzene	10	U	10	5.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
1,2-Diphenylhydrazine	10	U	10	0.78	ug/L		11/27/18 14:11	12/03/18 17:03	1
1,3-Dichlorobenzene	10	U	10	0.69	ug/L		11/27/18 14:11	12/03/18 17:03	1
1,4-Dichlorobenzene	10	U	10	5.6	ug/L		11/27/18 14:11	12/03/18 17:03	1
2,2'-oxybis[1-chloropropane]	5.0	U	5.0	0.84	ug/L		11/27/18 14:11	12/03/18 17:03	1
2,4,6-Trichlorophenol	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
2,4-Dichlorophenol	5.0	U	5.0	0.77	ug/L		11/27/18 14:11	12/03/18 17:03	1
2,4-Dimethylphenol	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/03/18 17:03	1
2,4-Dinitrophenol	10	U	10	5.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
2,4-Dinitrotoluene	10	U	10	5.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
2,6-Dinitrotoluene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
2-Chloronaphthalene	5.0	U	5.0	0.91	ug/L		11/27/18 14:11	12/03/18 17:03	1

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QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-447670/1-A
Matrix: Water
Analysis Batch: 448743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 447670

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Chlorophenol	5.0	U	5.0	0.66	ug/L		11/27/18 14:11	12/03/18 17:03	1
2-Nitrophenol	5.0	U	5.0	0.70	ug/L		11/27/18 14:11	12/03/18 17:03	1
3,3'-Dichlorobenzidine	5.0	U	5.0	0.82	ug/L		11/27/18 14:11	12/03/18 17:03	1
4,6-Dinitro-2-methylphenol	10	U	10	0.66	ug/L		11/27/18 14:11	12/03/18 17:03	1
4-Bromophenyl phenyl ether	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/03/18 17:03	1
4-Chloro-3-methylphenol	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/03/18 17:03	1
4-Chlorophenyl phenyl ether	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/03/18 17:03	1
4-Nitrophenol	15	U	15	10	ug/L		11/27/18 14:11	12/03/18 17:03	1
Acenaphthene	5.0	U	5.0	0.81	ug/L		11/27/18 14:11	12/03/18 17:03	1
Acenaphthylene	5.0	U	5.0	0.87	ug/L		11/27/18 14:11	12/03/18 17:03	1
Anthracene	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/03/18 17:03	1
Benzidine	80	U	80	35	ug/L		11/27/18 14:11	12/03/18 17:03	1
Benzo[a]anthracene	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/03/18 17:03	1
Benzo[a]pyrene	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/03/18 17:03	1
Benzo[b]fluoranthene	5.0	U	5.0	1.2	ug/L		11/27/18 14:11	12/03/18 17:03	1
Benzo[g,h,i]perylene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/03/18 17:03	1
Benzo[k]fluoranthene	5.0	U	5.0	1.3	ug/L		11/27/18 14:11	12/03/18 17:03	1
Bis(2-chloroethoxy)methane	5.0	U	5.0	0.75	ug/L		11/27/18 14:11	12/03/18 17:03	1
Bis(2-chloroethyl)ether	5.0	U	5.0	0.93	ug/L		11/27/18 14:11	12/03/18 17:03	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.2	ug/L		11/27/18 14:11	12/03/18 17:03	1
Butyl benzyl phthalate	5.0	U	5.0	1.1	ug/L		11/27/18 14:11	12/03/18 17:03	1
Chrysene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
Dibenz(a,h)anthracene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/03/18 17:03	1
Diethyl phthalate	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
Dimethyl phthalate	5.0	U	5.0	0.91	ug/L		11/27/18 14:11	12/03/18 17:03	1
Di-n-butyl phthalate	5.0	U	5.0	1.6	ug/L		11/27/18 14:11	12/03/18 17:03	1
Di-n-octyl phthalate	5.0	U	5.0	1.2	ug/L		11/27/18 14:11	12/03/18 17:03	1
Fluoranthene	5.0	U	5.0	1.6	ug/L		11/27/18 14:11	12/03/18 17:03	1
Fluorene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
Hexachlorobenzene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
Hexachlorobutadiene	5.0	U	5.0	1.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
Hexachlorocyclopentadiene	10	U	10	5.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
Hexachloroethane	5.0	U	5.0	0.60	ug/L		11/27/18 14:11	12/03/18 17:03	1
Indeno[1,2,3-cd]pyrene	5.0	U	5.0	1.5	ug/L		11/27/18 14:11	12/03/18 17:03	1
Isophorone	5.0	U	5.0	0.74	ug/L		11/27/18 14:11	12/03/18 17:03	1
Naphthalene	5.0	U	5.0	0.86	ug/L		11/27/18 14:11	12/03/18 17:03	1
Nitrobenzene	5.0	U	5.0	0.81	ug/L		11/27/18 14:11	12/03/18 17:03	1
N-Nitrosodimethylamine	10	U	10	5.0	ug/L		11/27/18 14:11	12/03/18 17:03	1
N-Nitrosodi-n-propylamine	5.0	U	5.0	0.89	ug/L		11/27/18 14:11	12/03/18 17:03	1
N-Nitrosodiphenylamine	5.0	U	5.0	0.40	ug/L		11/27/18 14:11	12/03/18 17:03	1
Pentachlorophenol	10	U	10	1.6	ug/L		11/27/18 14:11	12/03/18 17:03	1
Phenanthrene	5.0	U	5.0	1.2	ug/L		11/27/18 14:11	12/03/18 17:03	1
Phenol	5.0	U	5.0	0.35	ug/L		11/27/18 14:11	12/03/18 17:03	1
Pyrene	5.0	U	5.0	1.4	ug/L		11/27/18 14:11	12/03/18 17:03	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	68		52 - 151	11/27/18 14:11	12/03/18 17:03	1
2-Fluorobiphenyl	80		44 - 120	11/27/18 14:11	12/03/18 17:03	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-447670/1-A
Matrix: Water
Analysis Batch: 448743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 447670

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorophenol	49		17 - 120	11/27/18 14:11	12/03/18 17:03	1
Nitrobenzene-d5	88		15 - 314	11/27/18 14:11	12/03/18 17:03	1
Phenol-d5	35		8 - 424	11/27/18 14:11	12/03/18 17:03	1
p-Terphenyl-d14 (Surr)	89		22 - 125	11/27/18 14:11	12/03/18 17:03	1

Lab Sample ID: LCS 480-447670/2-A
Matrix: Water
Analysis Batch: 448743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 447670

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2,4-Trichlorobenzene	50.0	30.6		ug/L		61	44 - 142
1,2-Dichlorobenzene	50.0	28.7		ug/L		57	32 - 129
1,2-Diphenylhydrazine	50.0	48.6		ug/L		97	47 - 146
1,3-Dichlorobenzene	50.0	26.0		ug/L		52	1 - 172
1,4-Dichlorobenzene	50.0	26.9		ug/L		54	20 - 124
2,2'-oxybis[1-chloropropane]	50.0	38.9		ug/L		78	36 - 166
2,4,6-Trichlorophenol	50.0	46.1		ug/L		92	37 - 144
2,4-Dichlorophenol	50.0	42.5		ug/L		85	39 - 135
2,4-Dimethylphenol	50.0	43.5		ug/L		87	32 - 120
2,4-Dinitrophenol	100	87.7		ug/L		88	1 - 191
2,4-Dinitrotoluene	50.0	47.6		ug/L		95	39 - 139
2,6-Dinitrotoluene	50.0	45.6		ug/L		91	50 - 158
2-Chloronaphthalene	50.0	39.0		ug/L		78	60 - 120
2-Chlorophenol	50.0	37.2		ug/L		74	23 - 134
2-Nitrophenol	50.0	41.7		ug/L		83	29 - 182
3,3'-Dichlorobenzidine	100	88.6		ug/L		89	1 - 262
4,6-Dinitro-2-methylphenol	100	90.8		ug/L		91	1 - 181
4-Bromophenyl phenyl ether	50.0	45.6		ug/L		91	53 - 127
4-Chloro-3-methylphenol	50.0	46.8		ug/L		94	22 - 147
4-Chlorophenyl phenyl ether	50.0	45.2		ug/L		90	25 - 158
4-Nitrophenol	100	54.5		ug/L		55	1 - 132
Acenaphthene	50.0	42.4		ug/L		85	47 - 145
Acenaphthylene	50.0	42.6		ug/L		85	33 - 145
Anthracene	50.0	47.7		ug/L		95	27 - 133
Benzidine	100	63.4	J	ug/L		63	1 - 120
Benzo[a]anthracene	50.0	46.3		ug/L		93	33 - 143
Benzo[a]pyrene	50.0	47.8		ug/L		96	17 - 163
Benzo[b]fluoranthene	50.0	45.5		ug/L		91	24 - 159
Benzo[g,h,i]perylene	50.0	46.8		ug/L		94	1 - 219
Benzo[k]fluoranthene	50.0	52.2		ug/L		104	11 - 162
Bis(2-chloroethoxy)methane	50.0	42.2		ug/L		84	33 - 184
Bis(2-chloroethyl)ether	50.0	37.2		ug/L		74	12 - 158
Bis(2-ethylhexyl) phthalate	50.0	49.6		ug/L		99	8 - 158
Butyl benzyl phthalate	50.0	48.5		ug/L		97	1 - 152
Chrysene	50.0	45.3		ug/L		91	17 - 168
Dibenz(a,h)anthracene	50.0	47.7		ug/L		95	1 - 227
Diethyl phthalate	50.0	51.4		ug/L		103	1 - 120
Dimethyl phthalate	50.0	47.3		ug/L		95	1 - 120

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-447670/2-A
Matrix: Water
Analysis Batch: 448743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 447670

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Di-n-butyl phthalate	50.0	51.5		ug/L		103	1 - 120
Di-n-octyl phthalate	50.0	49.1		ug/L		98	4 - 146
Fluoranthene	50.0	48.3		ug/L		97	26 - 137
Fluorene	50.0	45.8		ug/L		92	59 - 121
Hexachlorobenzene	50.0	45.3		ug/L		91	1 - 152
Hexachlorobutadiene	50.0	23.6		ug/L		47	24 - 120
Hexachlorocyclopentadiene	50.0	26.0		ug/L		52	5 - 120
Hexachloroethane	50.0	22.7		ug/L		45	40 - 120
Indeno[1,2,3-cd]pyrene	50.0	47.1		ug/L		94	1 - 171
Isophorone	50.0	45.0		ug/L		90	21 - 196
Naphthalene	50.0	36.1		ug/L		72	21 - 133
Nitrobenzene	50.0	43.0		ug/L		86	35 - 180
N-Nitrosodimethylamine	50.0	31.6		ug/L		63	19 - 120
N-Nitrosodi-n-propylamine	50.0	44.0		ug/L		88	1 - 230
N-Nitrosodiphenylamine	50.0	46.6		ug/L		93	54 - 125
Pentachlorophenol	100	84.3		ug/L		84	14 - 176
Phenanthrene	50.0	47.0		ug/L		94	54 - 120
Phenol	50.0	20.3		ug/L		41	5 - 120
Pyrene	50.0	47.7		ug/L		95	52 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	82		52 - 151
2-Fluorobiphenyl	78		44 - 120
2-Fluorophenol	47		17 - 120
Nitrobenzene-d5	80		15 - 314
Phenol-d5	34		8 - 424
p-Terphenyl-d14 (Surr)	87		22 - 125

Lab Sample ID: LCSD 480-447670/3-A
Matrix: Water
Analysis Batch: 448743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 447670

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	50.0	30.5		ug/L		61	44 - 142	0	34
1,2-Dichlorobenzene	50.0	29.6		ug/L		59	32 - 129	3	38
1,2-Diphenylhydrazine	50.0	48.2		ug/L		96	47 - 146	1	20
1,3-Dichlorobenzene	50.0	25.8		ug/L		52	1 - 172	1	37
1,4-Dichlorobenzene	50.0	27.7		ug/L		55	20 - 124	3	40
2,2'-oxybis[1-chloropropane]	50.0	40.0		ug/L		80	36 - 166	3	36
2,4,6-Trichlorophenol	50.0	45.3		ug/L		91	37 - 144	2	20
2,4-Dichlorophenol	50.0	44.9		ug/L		90	39 - 135	6	23
2,4-Dimethylphenol	50.0	44.6		ug/L		89	32 - 120	3	18
2,4-Dinitrophenol	100	91.7		ug/L		92	1 - 191	4	29
2,4-Dinitrotoluene	50.0	47.6		ug/L		95	39 - 139	0	20
2,6-Dinitrotoluene	50.0	46.9		ug/L		94	50 - 158	3	17
2-Chloronaphthalene	50.0	38.9		ug/L		78	60 - 120	0	30
2-Chlorophenol	50.0	39.4		ug/L		79	23 - 134	6	26
2-Nitrophenol	50.0	41.2		ug/L		82	29 - 182	1	28

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-447670/3-A

Matrix: Water

Analysis Batch: 448743

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 447670

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
3,3'-Dichlorobenzidine	100	91.6		ug/L		92	1 - 262	3	31
4,6-Dinitro-2-methylphenol	100	92.6		ug/L		93	1 - 181	2	30
4-Bromophenyl phenyl ether	50.0	47.8		ug/L		96	53 - 127	5	16
4-Chloro-3-methylphenol	50.0	47.8		ug/L		96	22 - 147	2	16
4-Chlorophenyl phenyl ether	50.0	45.4		ug/L		91	25 - 158	0	15
4-Nitrophenol	100	55.1		ug/L		55	1 - 132	1	24
Acenaphthene	50.0	42.8		ug/L		86	47 - 145	1	25
Acenaphthylene	50.0	41.8		ug/L		84	33 - 145	2	22
Anthracene	50.0	48.5		ug/L		97	27 - 133	2	15
Benzidine	100	50.4	J	ug/L		50	1 - 120	23	50
Benzo[a]anthracene	50.0	47.6		ug/L		95	33 - 143	3	15
Benzo[a]pyrene	50.0	48.3		ug/L		97	17 - 163	1	15
Benzo[b]fluoranthene	50.0	47.0		ug/L		94	24 - 159	3	17
Benzo[g,h,i]perylene	50.0	46.7		ug/L		93	1 - 219	0	19
Benzo[k]fluoranthene	50.0	52.2		ug/L		104	11 - 162	0	19
Bis(2-chloroethoxy)methane	50.0	43.3		ug/L		87	33 - 184	3	23
Bis(2-chloroethyl)ether	50.0	38.8		ug/L		78	12 - 158	4	33
Bis(2-ethylhexyl) phthalate	50.0	50.3		ug/L		101	8 - 158	1	15
Butyl benzyl phthalate	50.0	49.9		ug/L		100	1 - 152	3	15
Chrysene	50.0	46.8		ug/L		94	17 - 168	3	15
Dibenz(a,h)anthracene	50.0	47.9		ug/L		96	1 - 227	0	18
Diethyl phthalate	50.0	50.9		ug/L		102	1 - 120	1	15
Dimethyl phthalate	50.0	47.8		ug/L		96	1 - 120	1	15
Di-n-butyl phthalate	50.0	52.4		ug/L		105	1 - 120	2	15
Di-n-octyl phthalate	50.0	49.5		ug/L		99	4 - 146	1	15
Fluoranthene	50.0	49.6		ug/L		99	26 - 137	3	15
Fluorene	50.0	45.1		ug/L		90	59 - 121	1	18
Hexachlorobenzene	50.0	46.4		ug/L		93	1 - 152	2	15
Hexachlorobutadiene	50.0	24.4		ug/L		49	24 - 120	3	50
Hexachlorocyclopentadiene	50.0	26.4		ug/L		53	5 - 120	1	50
Hexachloroethane	50.0	23.5		ug/L		47	40 - 120	3	43
Indeno[1,2,3-cd]pyrene	50.0	47.3		ug/L		95	1 - 171	0	17
Isophorone	50.0	45.5		ug/L		91	21 - 196	1	21
Naphthalene	50.0	37.1		ug/L		74	21 - 133	3	31
Nitrobenzene	50.0	43.1		ug/L		86	35 - 180	0	27
N-Nitrosodimethylamine	50.0	33.5		ug/L		67	19 - 120	6	22
N-Nitrosodi-n-propylamine	50.0	46.2		ug/L		92	1 - 230	5	23
N-Nitrosodiphenylamine	50.0	47.3		ug/L		95	54 - 125	2	15
Pentachlorophenol	100	86.8		ug/L		87	14 - 176	3	21
Phenanthrene	50.0	47.7		ug/L		95	54 - 120	2	16
Phenol	50.0	21.3		ug/L		43	5 - 120	5	36
Pyrene	50.0	48.2		ug/L		96	52 - 120	1	15

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2,4,6-Tribromophenol	87		52 - 151
2-Fluorobiphenyl	77		44 - 120
2-Fluorophenol	47		17 - 120
Nitrobenzene-d5	81		15 - 314

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-447670/3-A
Matrix: Water
Analysis Batch: 448743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 447670

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
Phenol-d5	35		8 - 424
p-Terphenyl-d14 (Surr)	91		22 - 125

Lab Sample ID: MB 480-448157/1-A
Matrix: Water
Analysis Batch: 448904

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 448157

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trichlorobenzene	10	U	10	0.82	ug/L		11/29/18 14:22	12/04/18 22:38	1
1,2-Dichlorobenzene	10	U	10	5.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
1,2-Diphenylhydrazine	10	U	10	0.78	ug/L		11/29/18 14:22	12/04/18 22:38	1
1,3-Dichlorobenzene	10	U	10	0.69	ug/L		11/29/18 14:22	12/04/18 22:38	1
1,4-Dichlorobenzene	10	U	10	5.6	ug/L		11/29/18 14:22	12/04/18 22:38	1
2,2'-oxybis[1-chloropropane]	5.0	U	5.0	0.84	ug/L		11/29/18 14:22	12/04/18 22:38	1
2,4,6-Trichlorophenol	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
2,4-Dichlorophenol	5.0	U	5.0	0.77	ug/L		11/29/18 14:22	12/04/18 22:38	1
2,4-Dimethylphenol	5.0	U	5.0	1.4	ug/L		11/29/18 14:22	12/04/18 22:38	1
2,4-Dinitrophenol	10	U	10	5.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
2,4-Dinitrotoluene	10	U	10	5.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
2,6-Dinitrotoluene	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
2-Chloronaphthalene	5.0	U	5.0	0.91	ug/L		11/29/18 14:22	12/04/18 22:38	1
2-Chlorophenol	5.0	U	5.0	0.66	ug/L		11/29/18 14:22	12/04/18 22:38	1
2-Nitrophenol	5.0	U	5.0	0.70	ug/L		11/29/18 14:22	12/04/18 22:38	1
3,3'-Dichlorobenzidine	5.0	U	5.0	0.82	ug/L		11/29/18 14:22	12/04/18 22:38	1
4,6-Dinitro-2-methylphenol	10	U	10	0.66	ug/L		11/29/18 14:22	12/04/18 22:38	1
4-Bromophenyl phenyl ether	5.0	U	5.0	1.4	ug/L		11/29/18 14:22	12/04/18 22:38	1
4-Chloro-3-methylphenol	5.0	U	5.0	1.1	ug/L		11/29/18 14:22	12/04/18 22:38	1
4-Chlorophenyl phenyl ether	5.0	U	5.0	1.3	ug/L		11/29/18 14:22	12/04/18 22:38	1
4-Nitrophenol	15	U	15	10	ug/L		11/29/18 14:22	12/04/18 22:38	1
Acenaphthene	5.0	U	5.0	0.81	ug/L		11/29/18 14:22	12/04/18 22:38	1
Acenaphthylene	5.0	U	5.0	0.87	ug/L		11/29/18 14:22	12/04/18 22:38	1
Anthracene	5.0	U	5.0	1.4	ug/L		11/29/18 14:22	12/04/18 22:38	1
Benzidine	80	U	80	35	ug/L		11/29/18 14:22	12/04/18 22:38	1
Benzo[a]anthracene	5.0	U	5.0	1.1	ug/L		11/29/18 14:22	12/04/18 22:38	1
Benzo[a]pyrene	5.0	U	5.0	1.3	ug/L		11/29/18 14:22	12/04/18 22:38	1
Benzo[b]fluoranthene	5.0	U	5.0	1.2	ug/L		11/29/18 14:22	12/04/18 22:38	1
Benzo[g,h,i]perylene	5.0	U	5.0	1.5	ug/L		11/29/18 14:22	12/04/18 22:38	1
Benzo[k]fluoranthene	5.0	U	5.0	1.3	ug/L		11/29/18 14:22	12/04/18 22:38	1
Bis(2-chloroethoxy)methane	5.0	U	5.0	0.75	ug/L		11/29/18 14:22	12/04/18 22:38	1
Bis(2-chloroethyl)ether	5.0	U	5.0	0.93	ug/L		11/29/18 14:22	12/04/18 22:38	1
Bis(2-ethylhexyl) phthalate	10	U	10	1.2	ug/L		11/29/18 14:22	12/04/18 22:38	1
Butyl benzyl phthalate	5.0	U	5.0	1.1	ug/L		11/29/18 14:22	12/04/18 22:38	1
Chrysene	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
Dibenz(a,h)anthracene	5.0	U	5.0	1.5	ug/L		11/29/18 14:22	12/04/18 22:38	1
Diethyl phthalate	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
Dimethyl phthalate	5.0	U	5.0	0.91	ug/L		11/29/18 14:22	12/04/18 22:38	1
Di-n-butyl phthalate	5.0	U	5.0	1.6	ug/L		11/29/18 14:22	12/04/18 22:38	1
Di-n-octyl phthalate	5.0	U	5.0	1.2	ug/L		11/29/18 14:22	12/04/18 22:38	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-448157/1-A
Matrix: Water
Analysis Batch: 448904

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 448157

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Fluoranthene	5.0	U	5.0	1.6	ug/L		11/29/18 14:22	12/04/18 22:38	1
Fluorene	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
Hexachlorobenzene	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
Hexachlorobutadiene	5.0	U	5.0	1.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
Hexachlorocyclopentadiene	10	U	10	5.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
Hexachloroethane	5.0	U	5.0	0.60	ug/L		11/29/18 14:22	12/04/18 22:38	1
Indeno[1,2,3-cd]pyrene	5.0	U	5.0	1.5	ug/L		11/29/18 14:22	12/04/18 22:38	1
Isophorone	5.0	U	5.0	0.74	ug/L		11/29/18 14:22	12/04/18 22:38	1
Naphthalene	5.0	U	5.0	0.86	ug/L		11/29/18 14:22	12/04/18 22:38	1
Nitrobenzene	5.0	U	5.0	0.81	ug/L		11/29/18 14:22	12/04/18 22:38	1
N-Nitrosodimethylamine	10	U	10	5.0	ug/L		11/29/18 14:22	12/04/18 22:38	1
N-Nitrosodi-n-propylamine	5.0	U	5.0	0.89	ug/L		11/29/18 14:22	12/04/18 22:38	1
N-Nitrosodiphenylamine	5.0	U	5.0	0.40	ug/L		11/29/18 14:22	12/04/18 22:38	1
Pentachlorophenol	10	U	10	1.6	ug/L		11/29/18 14:22	12/04/18 22:38	1
Phenanthrene	5.0	U	5.0	1.2	ug/L		11/29/18 14:22	12/04/18 22:38	1
Phenol	5.0	U	5.0	0.35	ug/L		11/29/18 14:22	12/04/18 22:38	1
Pyrene	5.0	U	5.0	1.4	ug/L		11/29/18 14:22	12/04/18 22:38	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	77		52 - 151	11/29/18 14:22	12/04/18 22:38	1
2-Fluorobiphenyl	94		44 - 120	11/29/18 14:22	12/04/18 22:38	1
2-Fluorophenol	52		17 - 120	11/29/18 14:22	12/04/18 22:38	1
Nitrobenzene-d5	97		15 - 314	11/29/18 14:22	12/04/18 22:38	1
Phenol-d5	38		8 - 424	11/29/18 14:22	12/04/18 22:38	1
p-Terphenyl-d14 (Surr)	102		22 - 125	11/29/18 14:22	12/04/18 22:38	1

Lab Sample ID: LCS 480-448157/2-A
Matrix: Water
Analysis Batch: 448904

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 448157

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2-Dichlorobenzene	50.0	33.2		ug/L		66	32 - 129
1,2-Diphenylhydrazine	50.0	51.0		ug/L		102	47 - 146
1,3-Dichlorobenzene	50.0	32.6		ug/L		65	1 - 172
1,4-Dichlorobenzene	50.0	33.2		ug/L		66	20 - 124
2,2'-oxybis[1-chloropropane]	50.0	39.1		ug/L		78	36 - 166
2,4,6-Trichlorophenol	50.0	47.9		ug/L		96	37 - 144
2,4-Dichlorophenol	50.0	45.3		ug/L		91	39 - 135
2,4-Dimethylphenol	50.0	45.5		ug/L		91	32 - 120
2,4-Dinitrophenol	100	92.7		ug/L		93	1 - 191
2,4-Dinitrotoluene	50.0	50.3		ug/L		101	39 - 139
2,6-Dinitrotoluene	50.0	47.5		ug/L		95	50 - 158
2-Chloronaphthalene	50.0	42.0		ug/L		84	60 - 120
2-Chlorophenol	50.0	37.7		ug/L		75	23 - 134
2-Nitrophenol	50.0	40.3		ug/L		81	29 - 182
3,3'-Dichlorobenzidine	100	94.5		ug/L		94	1 - 262
4,6-Dinitro-2-methylphenol	100	96.6		ug/L		97	1 - 181

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-448157/2-A
Matrix: Water
Analysis Batch: 448904

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 448157

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
4-Bromophenyl phenyl ether	50.0	48.6		ug/L		97	53 - 127
4-Chloro-3-methylphenol	50.0	52.7		ug/L		105	22 - 147
4-Chlorophenyl phenyl ether	50.0	48.2		ug/L		96	25 - 158
4-Nitrophenol	100	63.4		ug/L		63	1 - 132
Acenaphthene	50.0	43.5		ug/L		87	47 - 145
Acenaphthylene	50.0	44.6		ug/L		89	33 - 145
Anthracene	50.0	49.4		ug/L		99	27 - 133
Benzidine	100	57.5	J	ug/L		57	1 - 120
Benzo[a]anthracene	50.0	48.4		ug/L		97	33 - 143
Benzo[a]pyrene	50.0	49.1		ug/L		98	17 - 163
Benzo[b]fluoranthene	50.0	47.2		ug/L		94	24 - 159
Benzo[g,h,i]perylene	50.0	49.2		ug/L		98	1 - 219
Benzo[k]fluoranthene	50.0	50.7		ug/L		101	11 - 162
Bis(2-chloroethoxy)methane	50.0	44.6		ug/L		89	33 - 184
Bis(2-chloroethyl)ether	50.0	38.6		ug/L		77	12 - 158
Bis(2-ethylhexyl) phthalate	50.0	50.0		ug/L		100	8 - 158
Butyl benzyl phthalate	50.0	50.0		ug/L		100	1 - 152
Chrysene	50.0	48.0		ug/L		96	17 - 168
Dibenz(a,h)anthracene	50.0	48.3		ug/L		97	1 - 227
Diethyl phthalate	50.0	53.4		ug/L		107	1 - 120
Dimethyl phthalate	50.0	51.0		ug/L		102	1 - 120
Di-n-butyl phthalate	50.0	53.7		ug/L		107	1 - 120
Di-n-octyl phthalate	50.0	49.5		ug/L		99	4 - 146
Fluoranthene	50.0	50.8		ug/L		102	26 - 137
Fluorene	50.0	47.3		ug/L		95	59 - 121
Hexachlorobenzene	50.0	48.0		ug/L		96	1 - 152
Hexachlorobutadiene	50.0	35.9		ug/L		72	24 - 120
Hexachlorocyclopentadiene	50.0	38.5		ug/L		77	5 - 120
Hexachloroethane	50.0	32.5		ug/L		65	40 - 120
Indeno[1,2,3-cd]pyrene	50.0	49.6		ug/L		99	1 - 171
Isophorone	50.0	48.5		ug/L		97	21 - 196
Naphthalene	50.0	38.9		ug/L		78	21 - 133
Nitrobenzene	50.0	45.6		ug/L		91	35 - 180
N-Nitrosodimethylamine	50.0	40.6		ug/L		81	19 - 120
N-Nitrosodi-n-propylamine	50.0	45.8		ug/L		92	1 - 230
N-Nitrosodiphenylamine	50.0	49.6		ug/L		99	54 - 125
Pentachlorophenol	100	93.4		ug/L		93	14 - 176
Phenanthrene	50.0	48.2		ug/L		96	54 - 120
Phenol	50.0	20.0		ug/L		40	5 - 120
Pyrene	50.0	48.9		ug/L		98	52 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	100		52 - 151
2-Fluorobiphenyl	85		44 - 120
2-Fluorophenol	49		17 - 120
Nitrobenzene-d5	90		15 - 314
Phenol-d5	36		8 - 424
p-Terphenyl-d14 (Surr)	97		22 - 125

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-448157/3-A

Matrix: Water

Analysis Batch: 448904

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 448157

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD	
									%Rec.	Limit
1,2,4-Trichlorobenzene	50.0	42.3		ug/L		85	44 - 142	13		34
1,2-Dichlorobenzene	50.0	36.7		ug/L		73	32 - 129	10		38
1,2-Diphenylhydrazine	50.0	56.7		ug/L		113	47 - 146	11		20
1,3-Dichlorobenzene	50.0	35.0		ug/L		70	1 - 172	7		37
1,4-Dichlorobenzene	50.0	34.9		ug/L		70	20 - 124	5		40
2,2'-oxybis[1-chloropropane]	50.0	41.4		ug/L		83	36 - 166	6		36
2,4,6-Trichlorophenol	50.0	51.7		ug/L		103	37 - 144	8		20
2,4-Dichlorophenol	50.0	47.3		ug/L		95	39 - 135	4		23
2,4-Dimethylphenol	50.0	47.2		ug/L		94	32 - 120	4		18
2,4-Dinitrophenol	100	101		ug/L		101	1 - 191	8		29
2,4-Dinitrotoluene	50.0	52.5		ug/L		105	39 - 139	4		20
2,6-Dinitrotoluene	50.0	51.2		ug/L		102	50 - 158	7		17
2-Chloronaphthalene	50.0	48.0		ug/L		96	60 - 120	13		30
2-Chlorophenol	50.0	39.8		ug/L		80	23 - 134	6		26
2-Nitrophenol	50.0	44.8		ug/L		90	29 - 182	11		28
3,3'-Dichlorobenzidine	100	101		ug/L		101	1 - 262	7		31
4,6-Dinitro-2-methylphenol	100	103		ug/L		103	1 - 181	6		30
4-Bromophenyl phenyl ether	50.0	55.1		ug/L		110	53 - 127	12		16
4-Chloro-3-methylphenol	50.0	49.8		ug/L		100	22 - 147	6		16
4-Chlorophenyl phenyl ether	50.0	51.7		ug/L		103	25 - 158	7		15
4-Nitrophenol	100	63.7		ug/L		64	1 - 132	0		24
Acenaphthene	50.0	48.1		ug/L		96	47 - 145	10		25
Acenaphthylene	50.0	49.0		ug/L		98	33 - 145	9		22
Anthracene	50.0	54.2		ug/L		108	27 - 133	9		15
Benzidine	100	64.7	J	ug/L		65	1 - 120	12		50
Benzo[a]anthracene	50.0	53.4		ug/L		107	33 - 143	10		15
Benzo[a]pyrene	50.0	53.4		ug/L		107	17 - 163	8		15
Benzo[b]fluoranthene	50.0	50.6		ug/L		101	24 - 159	7		17
Benzo[g,h,i]perylene	50.0	56.8		ug/L		114	1 - 219	14		19
Benzo[k]fluoranthene	50.0	56.7		ug/L		113	11 - 162	11		19
Bis(2-chloroethoxy)methane	50.0	47.3		ug/L		95	33 - 184	6		23
Bis(2-chloroethyl)ether	50.0	41.7		ug/L		83	12 - 158	8		33
Bis(2-ethylhexyl) phthalate	50.0	56.2		ug/L		112	8 - 158	12		15
Butyl benzyl phthalate	50.0	54.4		ug/L		109	1 - 152	9		15
Chrysene	50.0	52.8		ug/L		106	17 - 168	10		15
Dibenz(a,h)anthracene	50.0	56.9		ug/L		114	1 - 227	16		18
Diethyl phthalate	50.0	56.9		ug/L		114	1 - 120	6		15
Dimethyl phthalate	50.0	53.7		ug/L		107	1 - 120	5		15
Di-n-butyl phthalate	50.0	57.6		ug/L		115	1 - 120	7		15
Di-n-octyl phthalate	50.0	53.5		ug/L		107	4 - 146	8		15
Fluoranthene	50.0	55.2		ug/L		110	26 - 137	8		15
Fluorene	50.0	51.0		ug/L		102	59 - 121	8		18
Hexachlorobenzene	50.0	52.7		ug/L		105	1 - 152	9		15
Hexachlorobutadiene	50.0	41.2		ug/L		82	24 - 120	14		50
Hexachlorocyclopentadiene	50.0	45.3		ug/L		91	5 - 120	16		50
Hexachloroethane	50.0	36.3		ug/L		73	40 - 120	11		43
Indeno[1,2,3-cd]pyrene	50.0	56.7		ug/L		113	1 - 171	13		17
Isophorone	50.0	50.0		ug/L		100	21 - 196	3		21

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-448157/3-A
Matrix: Water
Analysis Batch: 448904

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 448157

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	50.0	42.4		ug/L		85	21 - 133	9	31
Nitrobenzene	50.0	49.1		ug/L		98	35 - 180	7	27
N-Nitrosodimethylamine	50.0	37.5		ug/L		75	19 - 120	8	22
N-Nitrosodi-n-propylamine	50.0	48.3		ug/L		97	1 - 230	5	23
N-Nitrosodiphenylamine	50.0	54.3		ug/L		109	54 - 125	9	15
Pentachlorophenol	100	103		ug/L		103	14 - 176	9	21
Phenanthrene	50.0	54.1		ug/L		108	54 - 120	12	16
Phenol	50.0	21.3		ug/L		43	5 - 120	6	36
Pyrene	50.0	56.2		ug/L		112	52 - 120	14	15

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2,4,6-Tribromophenol	104		52 - 151
2-Fluorobiphenyl	94		44 - 120
2-Fluorophenol	50		17 - 120
Nitrobenzene-d5	94		15 - 314
Phenol-d5	36		8 - 424
p-Terphenyl-d14 (Surr)	105		22 - 125

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 480-448190/1-A
Matrix: Water
Analysis Batch: 448561

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 448190

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.020	U	0.020	0.0068	mg/L		11/30/18 09:55	11/30/18 18:04	1
Arsenic	0.015	U	0.015	0.0056	mg/L		11/30/18 09:55	11/30/18 18:04	1
Beryllium	0.0020	U	0.0020	0.00030	mg/L		11/30/18 09:55	11/30/18 18:04	1
Cadmium	0.0020	U	0.0020	0.00050	mg/L		11/30/18 09:55	11/30/18 18:04	1
Chromium	0.0040	U	0.0040	0.0010	mg/L		11/30/18 09:55	11/30/18 18:04	1
Copper	0.010	U	0.010	0.0016	mg/L		11/30/18 09:55	11/30/18 18:04	1
Lead	0.010	U	0.010	0.0030	mg/L		11/30/18 09:55	11/30/18 18:04	1
Nickel	0.010	U	0.010	0.0013	mg/L		11/30/18 09:55	11/30/18 18:04	1
Selenium	0.025	U	0.025	0.0087	mg/L		11/30/18 09:55	11/30/18 18:04	1
Silver	0.0060	U	0.0060	0.0017	mg/L		11/30/18 09:55	11/30/18 18:04	1
Thallium	0.020	U	0.020	0.010	mg/L		11/30/18 09:55	11/30/18 18:04	1
Zinc	0.00189	J	0.010	0.0015	mg/L		11/30/18 09:55	11/30/18 18:04	1

Lab Sample ID: LCS 480-448190/2-A
Matrix: Water
Analysis Batch: 448561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 448190

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.200	0.195		mg/L		97	85 - 115
Arsenic	0.200	0.205		mg/L		102	85 - 115
Beryllium	0.200	0.198		mg/L		99	85 - 115
Cadmium	0.200	0.204		mg/L		102	85 - 115
Chromium	0.200	0.200		mg/L		100	85 - 115
Copper	0.200	0.205		mg/L		103	85 - 115

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-448190/2-A
Matrix: Water
Analysis Batch: 448561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 448190

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.200	0.201		mg/L		101	85 - 115
Nickel	0.200	0.207		mg/L		104	85 - 115
Selenium	0.200	0.212		mg/L		106	85 - 115
Silver	0.0500	0.0517		mg/L		103	85 - 115
Thallium	0.200	0.210		mg/L		105	85 - 115
Zinc	0.200	0.226		mg/L		113	85 - 115

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 480-447912/1-A
Matrix: Water
Analysis Batch: 448191

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 447912

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	0.00012	mg/L		11/29/18 12:00	11/29/18 14:19	1

Lab Sample ID: LCS 480-447912/2-A
Matrix: Water
Analysis Batch: 448191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 447912

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00667	0.00740		mg/L		111	85 - 115

Lab Sample ID: MB 480-448084/1-A
Matrix: Water
Analysis Batch: 448224

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 448084

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	0.00012	mg/L		11/29/18 12:55	11/29/18 15:43	1

Lab Sample ID: LCS 480-448084/2-A
Matrix: Water
Analysis Batch: 448224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 448084

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00667	0.00678		mg/L		102	85 - 115

Method: 1664B - HEM and SGT-HEM

Lab Sample ID: MB 480-448043/1-A
Matrix: Water
Analysis Batch: 448097

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 448043

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	1.68	J	5.3	1.5	mg/L		11/29/18 07:51	11/29/18 11:00	1

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 1664B - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 480-448043/2-A
Matrix: Water
Analysis Batch: 448097

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 448043
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Oil & Grease	41.5	35.75		mg/L		86	78 - 114

Lab Sample ID: MB 480-448174/1-A
Matrix: Water
Analysis Batch: 448352

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 448174

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease	5.3	U	5.3	1.5	mg/L		11/30/18 06:53	11/30/18 10:04	1

Lab Sample ID: LCS 480-448174/2-A
Matrix: Water
Analysis Batch: 448352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 448174
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Oil & Grease	42.3	40.49		mg/L		96	78 - 114

Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 480-449007/1-A
Matrix: Water
Analysis Batch: 449035

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 449007

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		12/04/18 12:15	12/04/18 16:59	1

Lab Sample ID: LCS 480-449007/2-A
Matrix: Water
Analysis Batch: 449035

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449007
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.400	0.407		mg/L		102	90 - 110

Lab Sample ID: LCS 480-449007/3-A
Matrix: Water
Analysis Batch: 449035

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 449007
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.250	0.266		mg/L		106	90 - 110

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 480-447991/27
Matrix: Water
Analysis Batch: 447991

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0107	J	0.020	0.0090	mg/L			11/28/18 17:22	1

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: MB 480-447991/3
Matrix: Water
Analysis Batch: 447991

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0151	J	0.020	0.0090	mg/L	-		11/28/18 17:01	1

Lab Sample ID: LCS 480-447991/28
Matrix: Water
Analysis Batch: 447991

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.08		mg/L	-	108	90 - 110

Lab Sample ID: LCS 480-447991/4
Matrix: Water
Analysis Batch: 447991

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.09		mg/L	-	109	90 - 110

Lab Sample ID: MB 480-448989/123
Matrix: Water
Analysis Batch: 448989

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.020	U	0.020	0.0090	mg/L	-		12/04/18 14:18	1

Lab Sample ID: MB 480-448989/3
Matrix: Water
Analysis Batch: 448989

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.020	U	0.020	0.0090	mg/L	-		12/04/18 12:35	1

Lab Sample ID: MB 480-448989/99
Matrix: Water
Analysis Batch: 448989

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.020	U	0.020	0.0090	mg/L	-		12/04/18 13:57	1

Lab Sample ID: LCS 480-448989/100
Matrix: Water
Analysis Batch: 448989

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.991		mg/L	-	99	90 - 110

Lab Sample ID: LCS 480-448989/124
Matrix: Water
Analysis Batch: 448989

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.00		mg/L	-	100	90 - 110

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: LCS 480-448989/4
Matrix: Water
Analysis Batch: 448989

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.993		mg/L		99	90 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 480-447970/1
Matrix: Water
Analysis Batch: 447970

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.0	U	1.0	1.0	mg/L			11/28/18 17:36	1

Lab Sample ID: LCS 480-447970/2
Matrix: Water
Analysis Batch: 447970

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	250	220.8		mg/L		88	88 - 110

Method: SM 4500 P E - Phosphorus

Lab Sample ID: MB 480-447814/3
Matrix: Water
Analysis Batch: 447814

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus	0.010	U	0.010	0.0050	mg/L			11/28/18 09:20	1

Lab Sample ID: LCS 480-447814/4
Matrix: Water
Analysis Batch: 447814

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Phosphorus	0.200	0.212		mg/L		106	90 - 110

Lab Sample ID: 480-145712-1 MS
Matrix: Water
Analysis Batch: 447814

Client Sample ID: EASTBERM1-11262018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Phosphorus	0.0055	J	0.500	0.578		mg/L		115	52 - 148

Lab Sample ID: 480-145712-1 MSD
Matrix: Water
Analysis Batch: 447814

Client Sample ID: EASTBERM1-11262018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Phosphorus	0.0055	J	0.500	0.563		mg/L		112	52 - 148	3	20

Eurofins TestAmerica, Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method: SM 4500 P E - Phosphorus (Continued)

Lab Sample ID: MB 480-448242/3
Matrix: Water
Analysis Batch: 448242

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus	0.010	U	0.010	0.0050	mg/L			11/29/18 16:40	1

Lab Sample ID: LCS 480-448242/4
Matrix: Water
Analysis Batch: 448242

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Phosphorus	0.200	0.190		mg/L		95	90 - 110

Lab Sample ID: 480-145712-3 MS
Matrix: Water
Analysis Batch: 448242

Client Sample ID: WESTBERM1-11262018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Phosphorus	0.013		0.500	0.526		mg/L		103	52 - 148

Lab Sample ID: 480-145712-3 MSD
Matrix: Water
Analysis Batch: 448242

Client Sample ID: WESTBERM1-11262018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Phosphorus	0.013		0.500	0.545		mg/L		106	52 - 148	3	20

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 480-447754/1
Matrix: Water
Analysis Batch: 447754

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	2.0	U	2.0	2.0	mg/L			11/27/18 21:06	1

Lab Sample ID: LCS 480-447754/2
Matrix: Water
Analysis Batch: 447754

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	198	188.8		mg/L		95	85 - 115

Lab Sample ID: USB 480-448384/1
Matrix: Water
Analysis Batch: 448384

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	2.0	U	2.0	2.0	mg/L			11/30/18 09:00	1

QC Sample Results

Client: Parsons Corporation
 Project/Site: Priority Pollutants

Job ID: 480-145712-1
 SDG: 480-145712-1

Method: SM 5210B - BOD, 5-Day (Continued)

Lab Sample ID: LCS 480-448384/2
Matrix: Water
Analysis Batch: 448384

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	198	186.0		mg/L		94	85 - 115

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

QC Association Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

GC/MS VOA

Analysis Batch: 447541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	624.1	
480-145712-4	WESTBERM2-11262018	Total/NA	Water	624.1	
480-145712-5	WESTBERM3-11262018	Total/NA	Water	624.1	
MB 480-447541/32	Method Blank	Total/NA	Water	624.1	
LCS 480-447541/30	Lab Control Sample	Total/NA	Water	624.1	

Analysis Batch: 448288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-3	WESTBERM1-11262018	Total/NA	Water	624.1	
MB 480-448288/7	Method Blank	Total/NA	Water	624.1	
LCS 480-448288/5	Lab Control Sample	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 447670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	625	
480-145712-2	EASTBERM2-11262018	Total/NA	Water	625	
480-145712-4	WESTBERM2-11262018	Total/NA	Water	625	
480-145712-5	WESTBERM3-11262018	Total/NA	Water	625	
MB 480-447670/1-A	Method Blank	Total/NA	Water	625	
LCS 480-447670/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 480-447670/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Prep Batch: 448157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-3	WESTBERM1-11262018	Total/NA	Water	625	
MB 480-448157/1-A	Method Blank	Total/NA	Water	625	
LCS 480-448157/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 480-448157/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 448743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-5	WESTBERM3-11262018	Total/NA	Water	625.1	447670
MB 480-447670/1-A	Method Blank	Total/NA	Water	625.1	447670
LCS 480-447670/2-A	Lab Control Sample	Total/NA	Water	625.1	447670
LCSD 480-447670/3-A	Lab Control Sample Dup	Total/NA	Water	625.1	447670

Analysis Batch: 448904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	625.1	447670
480-145712-2	EASTBERM2-11262018	Total/NA	Water	625.1	447670
480-145712-3	WESTBERM1-11262018	Total/NA	Water	625.1	448157
480-145712-4	WESTBERM2-11262018	Total/NA	Water	625.1	447670
MB 480-448157/1-A	Method Blank	Total/NA	Water	625.1	448157
LCS 480-448157/2-A	Lab Control Sample	Total/NA	Water	625.1	448157
LCSD 480-448157/3-A	Lab Control Sample Dup	Total/NA	Water	625.1	448157

QC Association Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Metals

Prep Batch: 447912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	245.1	
480-145712-4	WESTBERM2-11262018	Total/NA	Water	245.1	
480-145712-5	WESTBERM3-11262018	Total/NA	Water	245.1	
MB 480-447912/1-A	Method Blank	Total/NA	Water	245.1	
LCS 480-447912/2-A	Lab Control Sample	Total/NA	Water	245.1	

Prep Batch: 448084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-3	WESTBERM1-11262018	Total/NA	Water	245.1	
MB 480-448084/1-A	Method Blank	Total/NA	Water	245.1	
LCS 480-448084/2-A	Lab Control Sample	Total/NA	Water	245.1	

Prep Batch: 448190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	200.7	
480-145712-3	WESTBERM1-11262018	Total/NA	Water	200.7	
480-145712-4	WESTBERM2-11262018	Total/NA	Water	200.7	
480-145712-5	WESTBERM3-11262018	Total/NA	Water	200.7	
MB 480-448190/1-A	Method Blank	Total/NA	Water	200.7	
LCS 480-448190/2-A	Lab Control Sample	Total/NA	Water	200.7	

Analysis Batch: 448191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	245.1	447912
480-145712-4	WESTBERM2-11262018	Total/NA	Water	245.1	447912
480-145712-5	WESTBERM3-11262018	Total/NA	Water	245.1	447912
MB 480-447912/1-A	Method Blank	Total/NA	Water	245.1	447912
LCS 480-447912/2-A	Lab Control Sample	Total/NA	Water	245.1	447912

Analysis Batch: 448224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-3	WESTBERM1-11262018	Total/NA	Water	245.1	448084
MB 480-448084/1-A	Method Blank	Total/NA	Water	245.1	448084
LCS 480-448084/2-A	Lab Control Sample	Total/NA	Water	245.1	448084

Analysis Batch: 448561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	200.7 Rev 4.4	448190
480-145712-3	WESTBERM1-11262018	Total/NA	Water	200.7 Rev 4.4	448190
480-145712-4	WESTBERM2-11262018	Total/NA	Water	200.7 Rev 4.4	448190
480-145712-5	WESTBERM3-11262018	Total/NA	Water	200.7 Rev 4.4	448190
MB 480-448190/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	448190
LCS 480-448190/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	448190

General Chemistry

Analysis Batch: 447754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	SM 5210B	
480-145712-4	WESTBERM2-11262018	Total/NA	Water	SM 5210B	
480-145712-5	WESTBERM3-11262018	Total/NA	Water	SM 5210B	

Eurofins TestAmerica, Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

General Chemistry (Continued)

Analysis Batch: 447754 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
USB 480-447754/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 480-447754/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Analysis Batch: 447814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	SM 4500 P E	
480-145712-4	WESTBERM2-11262018	Total/NA	Water	SM 4500 P E	
480-145712-5	WESTBERM3-11262018	Total/NA	Water	SM 4500 P E	
MB 480-447814/3	Method Blank	Total/NA	Water	SM 4500 P E	
LCS 480-447814/4	Lab Control Sample	Total/NA	Water	SM 4500 P E	
480-145712-1 MS	EASTBERM1-11262018	Total/NA	Water	SM 4500 P E	
480-145712-1 MSD	EASTBERM1-11262018	Total/NA	Water	SM 4500 P E	

Analysis Batch: 447970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	SM 2540D	
480-145712-2	EASTBERM2-11262018	Total/NA	Water	SM 2540D	
480-145712-3	WESTBERM1-11262018	Total/NA	Water	SM 2540D	
480-145712-4	WESTBERM2-11262018	Total/NA	Water	SM 2540D	
480-145712-5	WESTBERM3-11262018	Total/NA	Water	SM 2540D	
MB 480-447970/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 480-447970/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 447991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	350.1	
480-145712-4	WESTBERM2-11262018	Total/NA	Water	350.1	
480-145712-5	WESTBERM3-11262018	Total/NA	Water	350.1	
MB 480-447991/27	Method Blank	Total/NA	Water	350.1	
MB 480-447991/3	Method Blank	Total/NA	Water	350.1	
LCS 480-447991/28	Lab Control Sample	Total/NA	Water	350.1	
LCS 480-447991/4	Lab Control Sample	Total/NA	Water	350.1	

Prep Batch: 448043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-2	EASTBERM2-11262018	Total/NA	Water	1664B	
480-145712-3	WESTBERM1-11262018	Total/NA	Water	1664B	
480-145712-4	WESTBERM2-11262018	Total/NA	Water	1664B	
480-145712-5	WESTBERM3-11262018	Total/NA	Water	1664B	
MB 480-448043/1-A	Method Blank	Total/NA	Water	1664B	
LCS 480-448043/2-A	Lab Control Sample	Total/NA	Water	1664B	

Analysis Batch: 448097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-2	EASTBERM2-11262018	Total/NA	Water	1664B	448043
480-145712-3	WESTBERM1-11262018	Total/NA	Water	1664B	448043
480-145712-4	WESTBERM2-11262018	Total/NA	Water	1664B	448043
480-145712-5	WESTBERM3-11262018	Total/NA	Water	1664B	448043
MB 480-448043/1-A	Method Blank	Total/NA	Water	1664B	448043
LCS 480-448043/2-A	Lab Control Sample	Total/NA	Water	1664B	448043

Eurofins TestAmerica, Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

General Chemistry

Prep Batch: 448174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	1664B	
MB 480-448174/1-A	Method Blank	Total/NA	Water	1664B	
LCS 480-448174/2-A	Lab Control Sample	Total/NA	Water	1664B	

Analysis Batch: 448242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-3	WESTBERM1-11262018	Total/NA	Water	SM 4500 P E	
MB 480-448242/3	Method Blank	Total/NA	Water	SM 4500 P E	
LCS 480-448242/4	Lab Control Sample	Total/NA	Water	SM 4500 P E	
480-145712-3 MS	WESTBERM1-11262018	Total/NA	Water	SM 4500 P E	
480-145712-3 MSD	WESTBERM1-11262018	Total/NA	Water	SM 4500 P E	

Analysis Batch: 448352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	1664B	448174
MB 480-448174/1-A	Method Blank	Total/NA	Water	1664B	448174
LCS 480-448174/2-A	Lab Control Sample	Total/NA	Water	1664B	448174

Analysis Batch: 448384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145793-1	WESTBERM1_11282018	Total/NA	Water	SM 5210B	
USB 480-448384/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 480-448384/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Analysis Batch: 448989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-3	WESTBERM1-11262018	Total/NA	Water	350.1	
MB 480-448989/123	Method Blank	Total/NA	Water	350.1	
MB 480-448989/3	Method Blank	Total/NA	Water	350.1	
MB 480-448989/99	Method Blank	Total/NA	Water	350.1	
LCS 480-448989/100	Lab Control Sample	Total/NA	Water	350.1	
LCS 480-448989/124	Lab Control Sample	Total/NA	Water	350.1	
LCS 480-448989/4	Lab Control Sample	Total/NA	Water	350.1	

Prep Batch: 449007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	Distill/CN	
480-145712-3	WESTBERM1-11262018	Total/NA	Water	Distill/CN	
480-145712-4	WESTBERM2-11262018	Total/NA	Water	Distill/CN	
480-145712-5	WESTBERM3-11262018	Total/NA	Water	Distill/CN	
MB 480-449007/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 480-449007/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
LCS 480-449007/3-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 449035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145712-1	EASTBERM1-11262018	Total/NA	Water	335.4	449007
480-145712-3	WESTBERM1-11262018	Total/NA	Water	335.4	449007
480-145712-4	WESTBERM2-11262018	Total/NA	Water	335.4	449007
480-145712-5	WESTBERM3-11262018	Total/NA	Water	335.4	449007
MB 480-449007/1-A	Method Blank	Total/NA	Water	335.4	449007

Eurofins TestAmerica, Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

General Chemistry (Continued)

Analysis Batch: 449035 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-449007/2-A	Lab Control Sample	Total/NA	Water	335.4	449007
LCS 480-449007/3-A	Lab Control Sample	Total/NA	Water	335.4	449007

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Lab Chronicle

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: EASTBERM1-11262018

Lab Sample ID: 480-145712-1

Date Collected: 11/26/18 15:15

Matrix: Water

Date Received: 11/26/18 17:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	447541	11/27/18 15:31	S1V	TAL BUF
Total/NA	Prep	625			447670	11/27/18 14:11	ATG	TAL BUF
Total/NA	Analysis	625.1		1	448904	12/04/18 19:40	RJS	TAL BUF
Total/NA	Prep	200.7			448190	11/30/18 09:55	VEG	TAL BUF
Total/NA	Analysis	200.7 Rev 4.4		1	448561	11/30/18 18:51	LMH	TAL BUF
Total/NA	Prep	245.1			447912	11/29/18 12:00	BMB	TAL BUF
Total/NA	Analysis	245.1		1	448191	11/29/18 14:23	BMB	TAL BUF
Total/NA	Prep	1664B			448174	11/30/18 06:53	MV	TAL BUF
Total/NA	Analysis	1664B		1	448352	11/30/18 10:04	MV	TAL BUF
Total/NA	Prep	Distill/CN			449007	12/04/18 12:15	LAW	TAL BUF
Total/NA	Analysis	335.4		1	449035	12/04/18 17:23	CAP	TAL BUF
Total/NA	Analysis	350.1		1	447991	11/28/18 17:16	A1A	TAL BUF
Total/NA	Analysis	SM 2540D		1	447970	11/28/18 17:36	KTP	TAL BUF
Total/NA	Analysis	SM 4500 P E		1	447814	11/28/18 09:20	RP	TAL BUF
Total/NA	Analysis	SM 5210B		1	447754	11/27/18 21:06	EY	TAL BUF

Client Sample ID: EASTBERM2-11262018

Lab Sample ID: 480-145712-2

Date Collected: 11/26/18 15:20

Matrix: Water

Date Received: 11/26/18 17:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			447670	11/27/18 14:11	ATG	TAL BUF
Total/NA	Analysis	625.1		1	448904	12/04/18 20:06	RJS	TAL BUF
Total/NA	Prep	1664B			448043	11/29/18 07:51	MV	TAL BUF
Total/NA	Analysis	1664B		1	448097	11/29/18 11:00	MV	TAL BUF
Total/NA	Analysis	SM 2540D		1	447970	11/28/18 17:36	KTP	TAL BUF

Client Sample ID: WESTBERM1-11262018

Lab Sample ID: 480-145712-3

Date Collected: 11/26/18 15:30

Matrix: Water

Date Received: 11/26/18 17:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	448288	11/30/18 13:38	S1V	TAL BUF
Total/NA	Prep	625			448157	11/29/18 14:22	ATG	TAL BUF
Total/NA	Analysis	625.1		1	448904	12/04/18 23:53	RJS	TAL BUF
Total/NA	Prep	200.7			448190	11/30/18 09:55	VEG	TAL BUF
Total/NA	Analysis	200.7 Rev 4.4		1	448561	11/30/18 18:55	LMH	TAL BUF
Total/NA	Prep	245.1			448084	11/29/18 12:55	BMB	TAL BUF
Total/NA	Analysis	245.1		1	448224	11/29/18 16:02	BMB	TAL BUF
Total/NA	Prep	1664B			448043	11/29/18 07:51	MV	TAL BUF
Total/NA	Analysis	1664B		1	448097	11/29/18 11:00	MV	TAL BUF
Total/NA	Prep	Distill/CN			449007	12/04/18 12:15	LAW	TAL BUF
Total/NA	Analysis	335.4		1	449035	12/04/18 17:24	CAP	TAL BUF
Total/NA	Analysis	350.1		2	448989	12/04/18 14:02	A1A	TAL BUF

Eurofins TestAmerica, Buffalo

Lab Chronicle

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM1-11262018

Lab Sample ID: 480-145712-3

Date Collected: 11/26/18 15:30

Matrix: Water

Date Received: 11/26/18 17:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	447970	11/28/18 17:36	KTP	TAL BUF
Total/NA	Analysis	SM 4500 P E		1	448242	11/29/18 16:40	DCB	TAL BUF

Client Sample ID: WESTBERM2-11262018

Lab Sample ID: 480-145712-4

Date Collected: 11/26/18 15:35

Matrix: Water

Date Received: 11/26/18 17:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		4	447541	11/27/18 15:55	S1V	TAL BUF
Total/NA	Prep	625			447670	11/27/18 14:11	ATG	TAL BUF
Total/NA	Analysis	625.1		1	448904	12/04/18 20:31	RJS	TAL BUF
Total/NA	Prep	200.7			448190	11/30/18 09:55	VEG	TAL BUF
Total/NA	Analysis	200.7 Rev 4.4		1	448561	11/30/18 19:09	LMH	TAL BUF
Total/NA	Prep	245.1			447912	11/29/18 12:00	BMB	TAL BUF
Total/NA	Analysis	245.1		1	448191	11/29/18 14:24	BMB	TAL BUF
Total/NA	Prep	1664B			448043	11/29/18 07:51	MV	TAL BUF
Total/NA	Analysis	1664B		1	448097	11/29/18 11:00	MV	TAL BUF
Total/NA	Prep	Distill/CN			449007	12/04/18 12:15	LAW	TAL BUF
Total/NA	Analysis	335.4		1	449035	12/04/18 17:25	CAP	TAL BUF
Total/NA	Analysis	350.1		1	447991	11/28/18 17:16	A1A	TAL BUF
Total/NA	Analysis	SM 2540D		1	447970	11/28/18 17:36	KTP	TAL BUF
Total/NA	Analysis	SM 4500 P E		1	447814	11/28/18 09:20	RP	TAL BUF
Total/NA	Analysis	SM 5210B		1	447754	11/27/18 21:06	EY	TAL BUF

Client Sample ID: WESTBERM3-11262018

Lab Sample ID: 480-145712-5

Date Collected: 11/26/18 15:40

Matrix: Water

Date Received: 11/26/18 17:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		4	447541	11/27/18 16:18	S1V	TAL BUF
Total/NA	Prep	625			447670	11/27/18 14:11	ATG	TAL BUF
Total/NA	Analysis	625.1		200	448743	12/03/18 21:39	RJS	TAL BUF
Total/NA	Prep	200.7			448190	11/30/18 09:55	VEG	TAL BUF
Total/NA	Analysis	200.7 Rev 4.4		1	448561	11/30/18 19:13	LMH	TAL BUF
Total/NA	Prep	245.1			447912	11/29/18 12:00	BMB	TAL BUF
Total/NA	Analysis	245.1		1	448191	11/29/18 14:26	BMB	TAL BUF
Total/NA	Prep	1664B			448043	11/29/18 07:51	MV	TAL BUF
Total/NA	Analysis	1664B		1	448097	11/29/18 11:00	MV	TAL BUF
Total/NA	Prep	Distill/CN			449007	12/04/18 12:15	LAW	TAL BUF
Total/NA	Analysis	335.4		1	449035	12/04/18 17:27	CAP	TAL BUF
Total/NA	Analysis	350.1		1	447991	11/28/18 17:17	A1A	TAL BUF
Total/NA	Analysis	SM 2540D		1	447970	11/28/18 17:36	KTP	TAL BUF
Total/NA	Analysis	SM 4500 P E		1	447814	11/28/18 09:20	RP	TAL BUF
Total/NA	Analysis	SM 5210B		1	447754	11/27/18 21:06	EY	TAL BUF

Eurofins TestAmerica, Buffalo

Lab Chronicle

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Client Sample ID: WESTBERM1_11282018

Lab Sample ID: 480-145793-1

Date Collected: 11/28/18 15:30

Matrix: Water

Date Received: 11/28/18 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5210B		1	448384	11/30/18 09:00	SAH	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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Accreditation/Certification Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
335.4	Distill/CN	Water	Cyanide, Total
624.1		Water	1,2-Dichloroethene, Total
625.1	625	Water	1,2-Dichlorobenzene
625.1	625	Water	1,3-Dichlorobenzene
625.1	625	Water	1,4-Dichlorobenzene

Method Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
625.1	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
200.7 Rev 4.4	Metals (ICP)	EPA	TAL BUF
245.1	Mercury (CVAA)	EPA	TAL BUF
1664B	HEM and SGT-HEM	1664B	TAL BUF
335.4	Cyanide, Total	MCAWW	TAL BUF
350.1	Nitrogen, Ammonia	MCAWW	TAL BUF
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL BUF
SM 4500 P E	Phosphorus	SM	TAL BUF
SM 5210B	BOD, 5-Day	SM	TAL BUF
1664B	HEM and SGT-HEM (Aqueous)	1664B	TAL BUF
200.7	Preparation, Total Metals	EPA	TAL BUF
245.1	Preparation, Mercury	EPA	TAL BUF
625	Liquid-Liquid Extraction	40CFR136A	TAL BUF
Distill/CN	Distillation, Cyanide	None	TAL BUF

Protocol References:

1664B = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Parsons Corporation
Project/Site: Priority Pollutants

Job ID: 480-145712-1
SDG: 480-145712-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-145712-1	EASTBERM1-11262018	Water	11/26/18 15:15	11/26/18 17:45	
480-145712-2	EASTBERM2-11262018	Water	11/26/18 15:20	11/26/18 17:45	
480-145712-3	WESTBERM1-11262018	Water	11/26/18 15:30	11/26/18 17:45	
480-145712-4	WESTBERM2-11262018	Water	11/26/18 15:35	11/26/18 17:45	
480-145712-5	WESTBERM3-11262018	Water	11/26/18 15:40	11/26/18 17:45	
480-145793-1	WESTBERM1_11282018	Water	11/28/18 15:30	11/28/18 15:45	

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Atharst, NY 14228
Phone: 716.691.2600 Fax: 716.691.7991

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Client Contact
Company Name: **PARSONS**
Address: **40 LaRiviere DR**
City/State/Zip: **Buffalo 14202**
Phone: **716 432-7685**
Fax:

Regulatory Program: DW NPDES RCRA Other:

Project Manager: **Steve**
Tel/Fax:

Site Contact: **J. Paulsen**
Lab Contact: **J.S. Howe**

Date:
Carrier:

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
TAT if different from Below
 2 weeks
 1 week
 2 days
 1 day

Project Name:
Site:
P O #

Job / SDG No.:
Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Perform MS / MSD (Y / N)		Sample Specific Notes:
						Filtered Sample (Y / N)	Phos.	
EASTBERM1-11262018	11/26	1515	G	W		✓	Ammonia	
EASTBERM2-11262018	11/26	1520	G	W		✓	Ammonia	
WESTBERM1-11262018	11/26	1530	G	W		✓	Ammonia	
WESTBERM2-11262018	11/26	1535	G	W		✓	Ammonia	
WESTBERM3-11262018	11/26	1540	G	W		✓	Ammonia	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
 Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Cooler Temp. (°C): Obs'd: _____	Therm ID No.: _____
Relinquished by: Steve	Received by: Parsons	Company: Parsons
Relinquished by: Steve	Received by: Parsons	Company: Parsons
Relinquished by: Steve	Received by: Parsons	Company: Parsons

#1 3.0, 2.8, 3.2

Received in Laboratory by: **Andrew Kolb**
Company: **JA**
Date/Time: **11/26/18 1745**



Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 480-145712-1

SDG Number: 480-145712-1

Login Number: 145712

List Number: 1

Creator: Wallace, Cameron

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 480-145712-1

SDG Number: 480-145712-1

Login Number: 145793

List Number: 1

Creator: Wallace, Cameron

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	PARSONS
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-145167-1
Client Project/Site: Area 108

For:
Parsons Corporation
40 LaRiviere Drive
Suite 350
Buffalo, New York 14202

Attn: Robert B Piurek



Authorized for release by:
11/20/2018 9:02:46 AM

John Schove, Project Manager II
(716)504-9838
john.schove@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Job ID: 480-145167-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-145167-1

Comments

No additional comments.

Receipt

The samples were received on 11/13/2018 5:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA

Method(s) 625.1: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits due to poor performance. The LCS associated with batch 460-568979 had (N-Nitrosodimethylamine) outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Method(s) Distill/CN: The reference method requires samples to be preserved to a pH>12. The following samples were received with insufficient preservation at a pH of 6.03: EAST BERM_11122018 (480-145167-1) and WEST BERM_11122018 (480-145167-2). The samples were preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Client Sample ID: EAST BERM_11122018

Lab Sample ID: 480-145167-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	9.6	J	25.0	5.5	ug/L	1		200.7 Rev 4.4	Total
Zinc	18.6	J	30.0	5.4	ug/L	1		200.7 Rev 4.4	Recoverable Total
Cyanide, Total	0.0035	J	0.010	0.0020	mg/L	1		335.4	Recoverable Total/NA

Client Sample ID: WEST BERM_11122018

Lab Sample ID: 480-145167-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	0.67	J	10	0.58	ug/L	1		625.1	Total/NA
Zinc	9.7	J	30.0	5.4	ug/L	1		200.7 Rev 4.4	Total
Cyanide, Total	0.011		0.010	0.0020	mg/L	1		335.4	Recoverable Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Client Sample ID: EAST BERM_11122018

Lab Sample ID: 480-145167-1

Date Collected: 11/13/18 15:30

Matrix: Water

Date Received: 11/13/18 17:00

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/18/18 10:09	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.37	ug/L			11/18/18 10:09	1
1,1,2-Trichloroethane	1.0	U	1.0	0.43	ug/L			11/18/18 10:09	1
1,1-Dichloroethane	1.0	U	1.0	0.26	ug/L			11/18/18 10:09	1
1,1-Dichloroethene	1.0	U	1.0	0.12	ug/L			11/18/18 10:09	1
1,2-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			11/18/18 10:09	1
1,2-Dichloroethane	1.0	U	1.0	0.43	ug/L			11/18/18 10:09	1
1,2-Dichloroethene, Total	2.0	U	2.0	0.44	ug/L			11/18/18 10:09	1
1,2-Dichloropropane	1.0	U	1.0	0.35	ug/L			11/18/18 10:09	1
1,3-Dichlorobenzene	1.0	U	1.0	0.34	ug/L			11/18/18 10:09	1
1,4-Dichlorobenzene	1.0	U	1.0	0.76	ug/L			11/18/18 10:09	1
2-Chloroethyl vinyl ether	1.0	U	1.0	0.43	ug/L			11/18/18 10:09	1
Acrolein	4.0	U	4.0	1.1	ug/L			11/18/18 10:09	1
Acrylonitrile	2.0	U	2.0	0.77	ug/L			11/18/18 10:09	1
Benzene	1.0	U	1.0	0.43	ug/L			11/18/18 10:09	1
Bromoform	1.0	U	1.0	0.54	ug/L			11/18/18 10:09	1
Bromomethane	1.0	U	1.0	1.0	ug/L			11/18/18 10:09	1
Carbon tetrachloride	1.0	U	1.0	0.21	ug/L			11/18/18 10:09	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			11/18/18 10:09	1
Chlorodibromomethane	1.0	U	1.0	0.28	ug/L			11/18/18 10:09	1
Chloroethane	1.0	U	1.0	0.32	ug/L			11/18/18 10:09	1
Chloroform	1.0	U	1.0	0.33	ug/L			11/18/18 10:09	1
Chloromethane	1.0	U	1.0	0.14	ug/L			11/18/18 10:09	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.46	ug/L			11/18/18 10:09	1
Dichlorobromomethane	1.0	U	1.0	0.34	ug/L			11/18/18 10:09	1
Ethylbenzene	1.0	U	1.0	0.30	ug/L			11/18/18 10:09	1
Methylene Chloride	1.0	U	1.0	0.32	ug/L			11/18/18 10:09	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L			11/18/18 10:09	1
Toluene	1.0	U	1.0	0.38	ug/L			11/18/18 10:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L			11/18/18 10:09	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.49	ug/L			11/18/18 10:09	1
Trichloroethene	1.0	U	1.0	0.31	ug/L			11/18/18 10:09	1
Vinyl chloride	1.0	U	1.0	0.17	ug/L			11/18/18 10:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		60 - 140		11/18/18 10:09	1
4-Bromofluorobenzene	121		60 - 140		11/18/18 10:09	1
Dibromofluoromethane (Surr)	110		60 - 140		11/18/18 10:09	1
Toluene-d8 (Surr)	103		60 - 140		11/18/18 10:09	1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	2.0	U	2.0	1.3	ug/L		11/16/18 09:01	11/17/18 00:38	1
1,2-Dichlorobenzene	10	U	10	1.3	ug/L		11/16/18 09:01	11/17/18 00:38	1
1,2-Diphenylhydrazine	10	U	10	0.37	ug/L		11/16/18 09:01	11/17/18 00:38	1
1,3-Dichlorobenzene	10	U	10	2.0	ug/L		11/16/18 09:01	11/17/18 00:38	1
1,4-Dichlorobenzene	10	U	10	1.3	ug/L		11/16/18 09:01	11/17/18 00:38	1
2,2'-oxybis[1-chloropropane]	10	U	10	0.63	ug/L		11/16/18 09:01	11/17/18 00:38	1
2,4,6-Trichlorophenol	10	U	10	0.30	ug/L		11/16/18 09:01	11/17/18 00:38	1
2,4-Dichlorophenol	10	U	10	0.42	ug/L		11/16/18 09:01	11/17/18 00:38	1

TestAmerica Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Client Sample ID: EAST BERM_11122018

Lab Sample ID: 480-145167-1

Date Collected: 11/13/18 15:30

Matrix: Water

Date Received: 11/13/18 17:00

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	10	U	10	0.23	ug/L		11/16/18 09:01	11/17/18 00:38	1
2,4-Dinitrophenol	20	U	20	2.0	ug/L		11/16/18 09:01	11/17/18 00:38	1
2,4-Dinitrotoluene	2.0	U	2.0	1.0	ug/L		11/16/18 09:01	11/17/18 00:38	1
2,6-Dinitrotoluene	2.0	U	2.0	0.53	ug/L		11/16/18 09:01	11/17/18 00:38	1
2-Chloronaphthalene	10	U	10	1.2	ug/L		11/16/18 09:01	11/17/18 00:38	1
2-Chlorophenol	10	U	10	0.38	ug/L		11/16/18 09:01	11/17/18 00:38	1
2-Nitrophenol	10	U	10	0.75	ug/L		11/16/18 09:01	11/17/18 00:38	1
3,3'-Dichlorobenzidine	10	U	10	1.6	ug/L		11/16/18 09:01	11/17/18 00:38	1
4,6-Dinitro-2-methylphenol	20	U	20	1.3	ug/L		11/16/18 09:01	11/17/18 00:38	1
4-Bromophenyl phenyl ether	10	U	10	0.75	ug/L		11/16/18 09:01	11/17/18 00:38	1
4-Chloro-3-methylphenol	10	U	10	0.58	ug/L		11/16/18 09:01	11/17/18 00:38	1
4-Chlorophenyl phenyl ether	10	U	10	1.3	ug/L		11/16/18 09:01	11/17/18 00:38	1
4-Nitrophenol	20	U	20	0.55	ug/L		11/16/18 09:01	11/17/18 00:38	1
Acenaphthene	10	U	10	1.1	ug/L		11/16/18 09:01	11/17/18 00:38	1
Acenaphthylene	10	U	10	0.82	ug/L		11/16/18 09:01	11/17/18 00:38	1
Anthracene	10	U	10	0.63	ug/L		11/16/18 09:01	11/17/18 00:38	1
Benzidine	10	U	10	0.92	ug/L		11/16/18 09:01	11/17/18 00:38	1
Benzo[a]anthracene	1.0	U	1.0	0.59	ug/L		11/16/18 09:01	11/17/18 00:38	1
Benzo[a]pyrene	1.0	U	1.0	0.68	ug/L		11/16/18 09:01	11/17/18 00:38	1
Benzo[b]fluoranthene	2.0	U	2.0	1.4	ug/L		11/16/18 09:01	11/17/18 00:38	1
Benzo[g,h,i]perylene	10	U	10	1.3	ug/L		11/16/18 09:01	11/17/18 00:38	1
Benzo[k]fluoranthene	1.0	U	1.0	0.67	ug/L		11/16/18 09:01	11/17/18 00:38	1
Bis(2-chloroethoxy)methane	10	U	10	0.24	ug/L		11/16/18 09:01	11/17/18 00:38	1
Bis(2-chloroethyl)ether	1.0	U	1.0	0.30	ug/L		11/16/18 09:01	11/17/18 00:38	1
Bis(2-ethylhexyl) phthalate	2.0	U	2.0	1.0	ug/L		11/16/18 09:01	11/17/18 00:38	1
Butyl benzyl phthalate	10	U	10	0.85	ug/L		11/16/18 09:01	11/17/18 00:38	1
Chrysene	2.0	U	2.0	0.91	ug/L		11/16/18 09:01	11/17/18 00:38	1
Dibenz(a,h)anthracene	1.0	U	1.0	0.74	ug/L		11/16/18 09:01	11/17/18 00:38	1
Diethyl phthalate	10	U	10	0.98	ug/L		11/16/18 09:01	11/17/18 00:38	1
Dimethyl phthalate	10	U	10	0.77	ug/L		11/16/18 09:01	11/17/18 00:38	1
Di-n-butyl phthalate	10	U	10	0.75	ug/L		11/16/18 09:01	11/17/18 00:38	1
Di-n-octyl phthalate	10	U	10	1.4	ug/L		11/16/18 09:01	11/17/18 00:38	1
Fluoranthene	10	U	10	0.84	ug/L		11/16/18 09:01	11/17/18 00:38	1
Fluorene	10	U	10	0.91	ug/L		11/16/18 09:01	11/17/18 00:38	1
Hexachlorobenzene	1.0	U	1.0	0.40	ug/L		11/16/18 09:01	11/17/18 00:38	1
Hexachlorobutadiene	1.0	U	1.0	0.13	ug/L		11/16/18 09:01	11/17/18 00:38	1
Hexachlorocyclopentadiene	10	U	10	1.7	ug/L		11/16/18 09:01	11/17/18 00:38	1
Hexachloroethane	2.0	U	2.0	1.2	ug/L		11/16/18 09:01	11/17/18 00:38	1
Indeno[1,2,3-cd]pyrene	2.0	U	2.0	1.3	ug/L		11/16/18 09:01	11/17/18 00:38	1
Isophorone	10	U	10	0.80	ug/L		11/16/18 09:01	11/17/18 00:38	1
Naphthalene	10	U	10	1.1	ug/L		11/16/18 09:01	11/17/18 00:38	1
Nitrobenzene	1.0	U	1.0	0.57	ug/L		11/16/18 09:01	11/17/18 00:38	1
N-Nitrosodimethylamine	10	U *	10	0.45	ug/L		11/16/18 09:01	11/17/18 00:38	1
N-Nitrosodi-n-propylamine	1.0	U	1.0	0.43	ug/L		11/16/18 09:01	11/17/18 00:38	1
N-Nitrosodiphenylamine	10	U	10	0.89	ug/L		11/16/18 09:01	11/17/18 00:38	1
Pentachlorophenol	20	U	20	1.4	ug/L		11/16/18 09:01	11/17/18 00:38	1
Phenanthrene	10	U	10	0.58	ug/L		11/16/18 09:01	11/17/18 00:38	1
Phenol	10	U	10	0.29	ug/L		11/16/18 09:01	11/17/18 00:38	1
Pyrene	10	U	10	1.6	ug/L		11/16/18 09:01	11/17/18 00:38	1

TestAmerica Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Client Sample ID: EAST BERM_11122018

Lab Sample ID: 480-145167-1

Date Collected: 11/13/18 15:30

Matrix: Water

Date Received: 11/13/18 17:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	80		14 - 149	11/16/18 09:01	11/17/18 00:38	1
2-Fluorobiphenyl	75		44 - 129	11/16/18 09:01	11/17/18 00:38	1
2-Fluorophenol	38		10 - 76	11/16/18 09:01	11/17/18 00:38	1
Nitrobenzene-d5	87		15 - 314	11/16/18 09:01	11/17/18 00:38	1
Phenol-d5	25		8 - 424	11/16/18 09:01	11/17/18 00:38	1
Terphenyl-d14	76		28 - 150	11/16/18 09:01	11/17/18 00:38	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	10.0	U	10.0	4.1	ug/L		11/17/18 18:00	11/18/18 13:27	1
Arsenic	5.0	U	5.0	4.2	ug/L		11/17/18 18:00	11/18/18 13:27	1
Beryllium	2.0	U	2.0	1.5	ug/L		11/17/18 18:00	11/18/18 13:27	1
Cadmium	5.0	U	5.0	2.1	ug/L		11/17/18 18:00	11/18/18 13:27	1
Chromium	10.0	U	10.0	5.9	ug/L		11/17/18 18:00	11/18/18 13:27	1
Copper	9.6	J	25.0	5.5	ug/L		11/17/18 18:00	11/18/18 13:27	1
Lead	5.0	U	5.0	3.8	ug/L		11/17/18 18:00	11/18/18 13:27	1
Nickel	40.0	U	40.0	6.3	ug/L		11/17/18 18:00	11/18/18 13:27	1
Selenium	5.0	U	5.0	4.2	ug/L		11/17/18 18:00	11/18/18 13:27	1
Silver	10.0	U	10.0	1.3	ug/L		11/17/18 18:00	11/18/18 13:27	1
Thallium	10.0	U	10.0	8.7	ug/L		11/17/18 18:00	11/18/18 13:27	1
Zinc	18.6	J	30.0	5.4	ug/L		11/17/18 18:00	11/18/18 13:27	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		11/16/18 12:33	11/16/18 14:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0035	J	0.010	0.0020	mg/L		11/19/18 08:52	11/19/18 11:53	1

Client Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Client Sample ID: WEST BERM_11122018

Lab Sample ID: 480-145167-2

Date Collected: 11/13/18 15:45

Matrix: Water

Date Received: 11/13/18 17:00

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/18/18 10:35	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.37	ug/L			11/18/18 10:35	1
1,1,2-Trichloroethane	1.0	U	1.0	0.43	ug/L			11/18/18 10:35	1
1,1-Dichloroethane	1.0	U	1.0	0.26	ug/L			11/18/18 10:35	1
1,1-Dichloroethene	1.0	U	1.0	0.12	ug/L			11/18/18 10:35	1
1,2-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			11/18/18 10:35	1
1,2-Dichloroethane	1.0	U	1.0	0.43	ug/L			11/18/18 10:35	1
1,2-Dichloroethene, Total	2.0	U	2.0	0.44	ug/L			11/18/18 10:35	1
1,2-Dichloropropane	1.0	U	1.0	0.35	ug/L			11/18/18 10:35	1
1,3-Dichlorobenzene	1.0	U	1.0	0.34	ug/L			11/18/18 10:35	1
1,4-Dichlorobenzene	1.0	U	1.0	0.76	ug/L			11/18/18 10:35	1
2-Chloroethyl vinyl ether	1.0	U	1.0	0.43	ug/L			11/18/18 10:35	1
Acrolein	4.0	U	4.0	1.1	ug/L			11/18/18 10:35	1
Acrylonitrile	2.0	U	2.0	0.77	ug/L			11/18/18 10:35	1
Benzene	1.0	U	1.0	0.43	ug/L			11/18/18 10:35	1
Bromoform	1.0	U	1.0	0.54	ug/L			11/18/18 10:35	1
Bromomethane	1.0	U	1.0	1.0	ug/L			11/18/18 10:35	1
Carbon tetrachloride	1.0	U	1.0	0.21	ug/L			11/18/18 10:35	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			11/18/18 10:35	1
Chlorodibromomethane	1.0	U	1.0	0.28	ug/L			11/18/18 10:35	1
Chloroethane	1.0	U	1.0	0.32	ug/L			11/18/18 10:35	1
Chloroform	1.0	U	1.0	0.33	ug/L			11/18/18 10:35	1
Chloromethane	1.0	U	1.0	0.14	ug/L			11/18/18 10:35	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.46	ug/L			11/18/18 10:35	1
Dichlorobromomethane	1.0	U	1.0	0.34	ug/L			11/18/18 10:35	1
Ethylbenzene	1.0	U	1.0	0.30	ug/L			11/18/18 10:35	1
Methylene Chloride	1.0	U	1.0	0.32	ug/L			11/18/18 10:35	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L			11/18/18 10:35	1
Toluene	1.0	U	1.0	0.38	ug/L			11/18/18 10:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L			11/18/18 10:35	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.49	ug/L			11/18/18 10:35	1
Trichloroethene	1.0	U	1.0	0.31	ug/L			11/18/18 10:35	1
Vinyl chloride	1.0	U	1.0	0.17	ug/L			11/18/18 10:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		60 - 140		11/18/18 10:35	1
4-Bromofluorobenzene	116		60 - 140		11/18/18 10:35	1
Dibromofluoromethane (Surr)	110		60 - 140		11/18/18 10:35	1
Toluene-d8 (Surr)	100		60 - 140		11/18/18 10:35	1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	2.0	U	2.0	1.3	ug/L		11/16/18 09:01	11/17/18 00:58	1
1,2-Dichlorobenzene	10	U	10	1.3	ug/L		11/16/18 09:01	11/17/18 00:58	1
1,2-Diphenylhydrazine	10	U	10	0.37	ug/L		11/16/18 09:01	11/17/18 00:58	1
1,3-Dichlorobenzene	10	U	10	2.0	ug/L		11/16/18 09:01	11/17/18 00:58	1
1,4-Dichlorobenzene	10	U	10	1.3	ug/L		11/16/18 09:01	11/17/18 00:58	1
2,2'-oxybis[1-chloropropane]	10	U	10	0.63	ug/L		11/16/18 09:01	11/17/18 00:58	1
2,4,6-Trichlorophenol	10	U	10	0.30	ug/L		11/16/18 09:01	11/17/18 00:58	1
2,4-Dichlorophenol	10	U	10	0.42	ug/L		11/16/18 09:01	11/17/18 00:58	1

TestAmerica Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Client Sample ID: WEST BERM_11122018

Lab Sample ID: 480-145167-2

Date Collected: 11/13/18 15:45

Matrix: Water

Date Received: 11/13/18 17:00

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	10	U	10	0.23	ug/L		11/16/18 09:01	11/17/18 00:58	1
2,4-Dinitrophenol	20	U	20	2.0	ug/L		11/16/18 09:01	11/17/18 00:58	1
2,4-Dinitrotoluene	2.0	U	2.0	1.0	ug/L		11/16/18 09:01	11/17/18 00:58	1
2,6-Dinitrotoluene	2.0	U	2.0	0.53	ug/L		11/16/18 09:01	11/17/18 00:58	1
2-Chloronaphthalene	10	U	10	1.2	ug/L		11/16/18 09:01	11/17/18 00:58	1
2-Chlorophenol	10	U	10	0.38	ug/L		11/16/18 09:01	11/17/18 00:58	1
2-Nitrophenol	10	U	10	0.75	ug/L		11/16/18 09:01	11/17/18 00:58	1
3,3'-Dichlorobenzidine	10	U	10	1.6	ug/L		11/16/18 09:01	11/17/18 00:58	1
4,6-Dinitro-2-methylphenol	20	U	20	1.3	ug/L		11/16/18 09:01	11/17/18 00:58	1
4-Bromophenyl phenyl ether	10	U	10	0.75	ug/L		11/16/18 09:01	11/17/18 00:58	1
4-Chloro-3-methylphenol	10	U	10	0.58	ug/L		11/16/18 09:01	11/17/18 00:58	1
4-Chlorophenyl phenyl ether	10	U	10	1.3	ug/L		11/16/18 09:01	11/17/18 00:58	1
4-Nitrophenol	20	U	20	0.55	ug/L		11/16/18 09:01	11/17/18 00:58	1
Acenaphthene	10	U	10	1.1	ug/L		11/16/18 09:01	11/17/18 00:58	1
Acenaphthylene	10	U	10	0.82	ug/L		11/16/18 09:01	11/17/18 00:58	1
Anthracene	10	U	10	0.63	ug/L		11/16/18 09:01	11/17/18 00:58	1
Benzidine	10	U	10	0.92	ug/L		11/16/18 09:01	11/17/18 00:58	1
Benzo[a]anthracene	1.0	U	1.0	0.59	ug/L		11/16/18 09:01	11/17/18 00:58	1
Benzo[a]pyrene	1.0	U	1.0	0.68	ug/L		11/16/18 09:01	11/17/18 00:58	1
Benzo[b]fluoranthene	2.0	U	2.0	1.4	ug/L		11/16/18 09:01	11/17/18 00:58	1
Benzo[g,h,i]perylene	10	U	10	1.3	ug/L		11/16/18 09:01	11/17/18 00:58	1
Benzo[k]fluoranthene	1.0	U	1.0	0.67	ug/L		11/16/18 09:01	11/17/18 00:58	1
Bis(2-chloroethoxy)methane	10	U	10	0.24	ug/L		11/16/18 09:01	11/17/18 00:58	1
Bis(2-chloroethyl)ether	1.0	U	1.0	0.30	ug/L		11/16/18 09:01	11/17/18 00:58	1
Bis(2-ethylhexyl) phthalate	2.0	U	2.0	1.0	ug/L		11/16/18 09:01	11/17/18 00:58	1
Butyl benzyl phthalate	10	U	10	0.85	ug/L		11/16/18 09:01	11/17/18 00:58	1
Chrysene	2.0	U	2.0	0.91	ug/L		11/16/18 09:01	11/17/18 00:58	1
Dibenz(a,h)anthracene	1.0	U	1.0	0.74	ug/L		11/16/18 09:01	11/17/18 00:58	1
Diethyl phthalate	10	U	10	0.98	ug/L		11/16/18 09:01	11/17/18 00:58	1
Dimethyl phthalate	10	U	10	0.77	ug/L		11/16/18 09:01	11/17/18 00:58	1
Di-n-butyl phthalate	10	U	10	0.75	ug/L		11/16/18 09:01	11/17/18 00:58	1
Di-n-octyl phthalate	10	U	10	1.4	ug/L		11/16/18 09:01	11/17/18 00:58	1
Fluoranthene	10	U	10	0.84	ug/L		11/16/18 09:01	11/17/18 00:58	1
Fluorene	10	U	10	0.91	ug/L		11/16/18 09:01	11/17/18 00:58	1
Hexachlorobenzene	1.0	U	1.0	0.40	ug/L		11/16/18 09:01	11/17/18 00:58	1
Hexachlorobutadiene	1.0	U	1.0	0.13	ug/L		11/16/18 09:01	11/17/18 00:58	1
Hexachlorocyclopentadiene	10	U	10	1.7	ug/L		11/16/18 09:01	11/17/18 00:58	1
Hexachloroethane	2.0	U	2.0	1.2	ug/L		11/16/18 09:01	11/17/18 00:58	1
Indeno[1,2,3-cd]pyrene	2.0	U	2.0	1.3	ug/L		11/16/18 09:01	11/17/18 00:58	1
Isophorone	10	U	10	0.80	ug/L		11/16/18 09:01	11/17/18 00:58	1
Naphthalene	10	U	10	1.1	ug/L		11/16/18 09:01	11/17/18 00:58	1
Nitrobenzene	1.0	U	1.0	0.57	ug/L		11/16/18 09:01	11/17/18 00:58	1
N-Nitrosodimethylamine	10	U *	10	0.45	ug/L		11/16/18 09:01	11/17/18 00:58	1
N-Nitrosodi-n-propylamine	1.0	U	1.0	0.43	ug/L		11/16/18 09:01	11/17/18 00:58	1
N-Nitrosodiphenylamine	10	U	10	0.89	ug/L		11/16/18 09:01	11/17/18 00:58	1
Pentachlorophenol	20	U	20	1.4	ug/L		11/16/18 09:01	11/17/18 00:58	1
Phenanthrene	0.67	J	10	0.58	ug/L		11/16/18 09:01	11/17/18 00:58	1
Phenol	10	U	10	0.29	ug/L		11/16/18 09:01	11/17/18 00:58	1
Pyrene	10	U	10	1.6	ug/L		11/16/18 09:01	11/17/18 00:58	1

TestAmerica Buffalo

Client Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Client Sample ID: WEST BERM_11122018

Lab Sample ID: 480-145167-2

Date Collected: 11/13/18 15:45

Matrix: Water

Date Received: 11/13/18 17:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	90		14 - 149	11/16/18 09:01	11/17/18 00:58	1
2-Fluorobiphenyl	92		44 - 129	11/16/18 09:01	11/17/18 00:58	1
2-Fluorophenol	40		10 - 76	11/16/18 09:01	11/17/18 00:58	1
Nitrobenzene-d5	102		15 - 314	11/16/18 09:01	11/17/18 00:58	1
Phenol-d5	27		8 - 424	11/16/18 09:01	11/17/18 00:58	1
Terphenyl-d14	95		28 - 150	11/16/18 09:01	11/17/18 00:58	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	10.0	U	10.0	4.1	ug/L		11/17/18 18:00	11/18/18 13:30	1
Arsenic	5.0	U	5.0	4.2	ug/L		11/17/18 18:00	11/18/18 13:30	1
Beryllium	2.0	U	2.0	1.5	ug/L		11/17/18 18:00	11/18/18 13:30	1
Cadmium	5.0	U	5.0	2.1	ug/L		11/17/18 18:00	11/18/18 13:30	1
Chromium	10.0	U	10.0	5.9	ug/L		11/17/18 18:00	11/18/18 13:30	1
Copper	25.0	U	25.0	5.5	ug/L		11/17/18 18:00	11/18/18 13:30	1
Lead	5.0	U	5.0	3.8	ug/L		11/17/18 18:00	11/18/18 13:30	1
Nickel	40.0	U	40.0	6.3	ug/L		11/17/18 18:00	11/18/18 13:30	1
Selenium	5.0	U	5.0	4.2	ug/L		11/17/18 18:00	11/18/18 13:30	1
Silver	10.0	U	10.0	1.3	ug/L		11/17/18 18:00	11/18/18 13:30	1
Thallium	10.0	U	10.0	8.7	ug/L		11/17/18 18:00	11/18/18 13:30	1
Zinc	9.7	J	30.0	5.4	ug/L		11/17/18 18:00	11/18/18 13:30	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		11/16/18 12:33	11/16/18 14:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.011		0.010	0.0020	mg/L		11/19/18 08:52	11/19/18 11:54	1

Surrogate Summary

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA	BFB	DBFM	TOL
		(60-140)	(60-140)	(60-140)	(60-140)
480-145167-1	EAST BERM_11122018	101	121	110	103
480-145167-2	WEST BERM_11122018	103	116	110	100
LCS 460-569376/3	Lab Control Sample	101	119	108	102
MB 460-569376/8	Method Blank	105	117	111	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TBP	FBP	2FP	NBZ	PHL	TPHL
		(14-149)	(44-129)	(10-76)	(15-314)	(8-424)	(28-150)
480-145167-1	EAST BERM_11122018	80	75	38	87	25	76
480-145167-2	WEST BERM_11122018	90	92	40	102	27	95
LCS 460-568979/2-A	Lab Control Sample	82	78	51	90	36	77
MB 460-568979/1-A	Method Blank	108	95	53	113	36	102

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL = Phenol-d5
TPHL = Terphenyl-d14

QC Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-569376/8
Matrix: Water
Analysis Batch: 569376

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/18/18 08:46	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.37	ug/L			11/18/18 08:46	1
1,1,2-Trichloroethane	1.0	U	1.0	0.43	ug/L			11/18/18 08:46	1
1,1-Dichloroethane	1.0	U	1.0	0.26	ug/L			11/18/18 08:46	1
1,1-Dichloroethene	1.0	U	1.0	0.12	ug/L			11/18/18 08:46	1
1,2-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			11/18/18 08:46	1
1,2-Dichloroethane	1.0	U	1.0	0.43	ug/L			11/18/18 08:46	1
1,2-Dichloroethene, Total	2.0	U	2.0	0.44	ug/L			11/18/18 08:46	1
1,2-Dichloropropane	1.0	U	1.0	0.35	ug/L			11/18/18 08:46	1
1,3-Dichlorobenzene	1.0	U	1.0	0.34	ug/L			11/18/18 08:46	1
1,4-Dichlorobenzene	1.0	U	1.0	0.76	ug/L			11/18/18 08:46	1
2-Chloroethyl vinyl ether	1.0	U	1.0	0.43	ug/L			11/18/18 08:46	1
Acrolein	4.0	U	4.0	1.1	ug/L			11/18/18 08:46	1
Acrylonitrile	2.0	U	2.0	0.77	ug/L			11/18/18 08:46	1
Benzene	1.0	U	1.0	0.43	ug/L			11/18/18 08:46	1
Bromoform	1.0	U	1.0	0.54	ug/L			11/18/18 08:46	1
Bromomethane	1.0	U	1.0	1.0	ug/L			11/18/18 08:46	1
Carbon tetrachloride	1.0	U	1.0	0.21	ug/L			11/18/18 08:46	1
Chlorobenzene	1.0	U	1.0	0.38	ug/L			11/18/18 08:46	1
Chlorodibromomethane	1.0	U	1.0	0.28	ug/L			11/18/18 08:46	1
Chloroethane	1.0	U	1.0	0.32	ug/L			11/18/18 08:46	1
Chloroform	1.0	U	1.0	0.33	ug/L			11/18/18 08:46	1
Chloromethane	1.0	U	1.0	0.14	ug/L			11/18/18 08:46	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.46	ug/L			11/18/18 08:46	1
Dichlorobromomethane	1.0	U	1.0	0.34	ug/L			11/18/18 08:46	1
Ethylbenzene	1.0	U	1.0	0.30	ug/L			11/18/18 08:46	1
Methylene Chloride	1.0	U	1.0	0.32	ug/L			11/18/18 08:46	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L			11/18/18 08:46	1
Toluene	1.0	U	1.0	0.38	ug/L			11/18/18 08:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L			11/18/18 08:46	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.49	ug/L			11/18/18 08:46	1
Trichloroethene	1.0	U	1.0	0.31	ug/L			11/18/18 08:46	1
Vinyl chloride	1.0	U	1.0	0.17	ug/L			11/18/18 08:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		60 - 140		11/18/18 08:46	1
4-Bromofluorobenzene	117		60 - 140		11/18/18 08:46	1
Dibromofluoromethane (Surr)	111		60 - 140		11/18/18 08:46	1
Toluene-d8 (Surr)	99		60 - 140		11/18/18 08:46	1

Lab Sample ID: LCS 460-569376/3
Matrix: Water
Analysis Batch: 569376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	20.4		ug/L		102	70 - 130
1,1,1,2-Tetrachloroethane	20.0	17.6		ug/L		88	60 - 140
1,1,2-Trichloroethane	20.0	19.1		ug/L		95	70 - 130

TestAmerica Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-569376/3

Matrix: Water

Analysis Batch: 569376

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	20.0	18.0		ug/L		90	70 - 130
1,1-Dichloroethene	20.0	18.4		ug/L		92	50 - 150
1,2-Dichlorobenzene	20.0	19.5		ug/L		97	65 - 135
1,2-Dichloroethane	20.0	20.1		ug/L		101	70 - 130
1,2-Dichloropropane	20.0	18.1		ug/L		91	35 - 165
1,3-Dichlorobenzene	20.0	19.2		ug/L		96	70 - 130
1,4-Dichlorobenzene	20.0	19.4		ug/L		97	65 - 135
2-Chloroethyl vinyl ether	20.0	18.3		ug/L		91	0.1 - 225
Benzene	20.0	18.3		ug/L		91	65 - 135
Bromoform	20.0	24.0		ug/L		120	70 - 130
Bromomethane	20.0	11.5		ug/L		57	15 - 185
Carbon tetrachloride	20.0	21.9		ug/L		110	70 - 130
Chlorobenzene	20.0	19.5		ug/L		98	65 - 135
Chlorodibromomethane	20.0	22.2		ug/L		111	70 - 135
Chloroethane	20.0	20.7		ug/L		103	40 - 160
Chloroform	20.0	19.6		ug/L		98	70 - 135
Chloromethane	20.0	17.2		ug/L		86	0.1 - 205
cis-1,3-Dichloropropene	20.0	18.3		ug/L		91	25 - 175
Dichlorobromomethane	20.0	20.2		ug/L		101	65 - 135
Ethylbenzene	20.0	18.5		ug/L		92	60 - 140
Methylene Chloride	20.0	17.7		ug/L		89	60 - 140
Tetrachloroethene	20.0	23.7		ug/L		118	70 - 130
Toluene	20.0	18.9		ug/L		95	70 - 130
trans-1,2-Dichloroethene	20.0	18.8		ug/L		94	70 - 130
trans-1,3-Dichloropropene	20.0	18.6		ug/L		93	50 - 150
Trichloroethene	20.0	20.4		ug/L		102	65 - 135
Vinyl chloride	20.0	18.2		ug/L		91	5 - 195

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		60 - 140
4-Bromofluorobenzene	119		60 - 140
Dibromofluoromethane (Surr)	108		60 - 140
Toluene-d8 (Surr)	102		60 - 140

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 460-568979/1-A

Matrix: Water

Analysis Batch: 569060

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 568979

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	2.0	U	2.0	1.3	ug/L		11/16/18 09:01	11/16/18 17:16	1
1,2-Dichlorobenzene	10	U	10	1.3	ug/L		11/16/18 09:01	11/16/18 17:16	1
1,2-Diphenylhydrazine	10	U	10	0.37	ug/L		11/16/18 09:01	11/16/18 17:16	1
1,3-Dichlorobenzene	10	U	10	2.0	ug/L		11/16/18 09:01	11/16/18 17:16	1
1,4-Dichlorobenzene	10	U	10	1.3	ug/L		11/16/18 09:01	11/16/18 17:16	1
2,2'-oxybis[1-chloropropane]	10	U	10	0.63	ug/L		11/16/18 09:01	11/16/18 17:16	1
2,4,6-Trichlorophenol	10	U	10	0.30	ug/L		11/16/18 09:01	11/16/18 17:16	1

TestAmerica Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-568979/1-A

Matrix: Water

Analysis Batch: 569060

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 568979

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4-Dichlorophenol	10	U	10	0.42	ug/L		11/16/18 09:01	11/16/18 17:16	1
2,4-Dimethylphenol	10	U	10	0.23	ug/L		11/16/18 09:01	11/16/18 17:16	1
2,4-Dinitrophenol	20	U	20	2.0	ug/L		11/16/18 09:01	11/16/18 17:16	1
2,4-Dinitrotoluene	2.0	U	2.0	1.0	ug/L		11/16/18 09:01	11/16/18 17:16	1
2,6-Dinitrotoluene	2.0	U	2.0	0.53	ug/L		11/16/18 09:01	11/16/18 17:16	1
2-Chloronaphthalene	10	U	10	1.2	ug/L		11/16/18 09:01	11/16/18 17:16	1
2-Chlorophenol	10	U	10	0.38	ug/L		11/16/18 09:01	11/16/18 17:16	1
2-Nitrophenol	10	U	10	0.75	ug/L		11/16/18 09:01	11/16/18 17:16	1
3,3'-Dichlorobenzidine	10	U	10	1.6	ug/L		11/16/18 09:01	11/16/18 17:16	1
4,6-Dinitro-2-methylphenol	20	U	20	1.3	ug/L		11/16/18 09:01	11/16/18 17:16	1
4-Bromophenyl phenyl ether	10	U	10	0.75	ug/L		11/16/18 09:01	11/16/18 17:16	1
4-Chloro-3-methylphenol	10	U	10	0.58	ug/L		11/16/18 09:01	11/16/18 17:16	1
4-Chlorophenyl phenyl ether	10	U	10	1.3	ug/L		11/16/18 09:01	11/16/18 17:16	1
4-Nitrophenol	20	U	20	0.55	ug/L		11/16/18 09:01	11/16/18 17:16	1
Acenaphthene	10	U	10	1.1	ug/L		11/16/18 09:01	11/16/18 17:16	1
Acenaphthylene	10	U	10	0.82	ug/L		11/16/18 09:01	11/16/18 17:16	1
Anthracene	10	U	10	0.63	ug/L		11/16/18 09:01	11/16/18 17:16	1
Benzidine	10	U	10	0.92	ug/L		11/16/18 09:01	11/16/18 17:16	1
Benzo[a]anthracene	1.0	U	1.0	0.59	ug/L		11/16/18 09:01	11/16/18 17:16	1
Benzo[a]pyrene	1.0	U	1.0	0.68	ug/L		11/16/18 09:01	11/16/18 17:16	1
Benzo[b]fluoranthene	2.0	U	2.0	1.4	ug/L		11/16/18 09:01	11/16/18 17:16	1
Benzo[g,h,i]perylene	10	U	10	1.3	ug/L		11/16/18 09:01	11/16/18 17:16	1
Benzo[k]fluoranthene	1.0	U	1.0	0.67	ug/L		11/16/18 09:01	11/16/18 17:16	1
Bis(2-chloroethoxy)methane	10	U	10	0.24	ug/L		11/16/18 09:01	11/16/18 17:16	1
Bis(2-chloroethyl)ether	1.0	U	1.0	0.30	ug/L		11/16/18 09:01	11/16/18 17:16	1
Bis(2-ethylhexyl) phthalate	2.0	U	2.0	1.0	ug/L		11/16/18 09:01	11/16/18 17:16	1
Butyl benzyl phthalate	10	U	10	0.85	ug/L		11/16/18 09:01	11/16/18 17:16	1
Chrysene	2.0	U	2.0	0.91	ug/L		11/16/18 09:01	11/16/18 17:16	1
Dibenz(a,h)anthracene	1.0	U	1.0	0.74	ug/L		11/16/18 09:01	11/16/18 17:16	1
Diethyl phthalate	10	U	10	0.98	ug/L		11/16/18 09:01	11/16/18 17:16	1
Dimethyl phthalate	10	U	10	0.77	ug/L		11/16/18 09:01	11/16/18 17:16	1
Di-n-butyl phthalate	10	U	10	0.75	ug/L		11/16/18 09:01	11/16/18 17:16	1
Di-n-octyl phthalate	10	U	10	1.4	ug/L		11/16/18 09:01	11/16/18 17:16	1
Fluoranthene	10	U	10	0.84	ug/L		11/16/18 09:01	11/16/18 17:16	1
Fluorene	10	U	10	0.91	ug/L		11/16/18 09:01	11/16/18 17:16	1
Hexachlorobenzene	1.0	U	1.0	0.40	ug/L		11/16/18 09:01	11/16/18 17:16	1
Hexachlorobutadiene	1.0	U	1.0	0.13	ug/L		11/16/18 09:01	11/16/18 17:16	1
Hexachlorocyclopentadiene	10	U	10	1.7	ug/L		11/16/18 09:01	11/16/18 17:16	1
Hexachloroethane	2.0	U	2.0	1.2	ug/L		11/16/18 09:01	11/16/18 17:16	1
Indeno[1,2,3-cd]pyrene	2.0	U	2.0	1.3	ug/L		11/16/18 09:01	11/16/18 17:16	1
Isophorone	10	U	10	0.80	ug/L		11/16/18 09:01	11/16/18 17:16	1
Naphthalene	10	U	10	1.1	ug/L		11/16/18 09:01	11/16/18 17:16	1
Nitrobenzene	1.0	U	1.0	0.57	ug/L		11/16/18 09:01	11/16/18 17:16	1
N-Nitrosodimethylamine	10	U	10	0.45	ug/L		11/16/18 09:01	11/16/18 17:16	1
N-Nitrosodi-n-propylamine	1.0	U	1.0	0.43	ug/L		11/16/18 09:01	11/16/18 17:16	1
N-Nitrosodiphenylamine	10	U	10	0.89	ug/L		11/16/18 09:01	11/16/18 17:16	1
Pentachlorophenol	20	U	20	1.4	ug/L		11/16/18 09:01	11/16/18 17:16	1
Phenanthrene	10	U	10	0.58	ug/L		11/16/18 09:01	11/16/18 17:16	1

TestAmerica Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 460-568979/1-A
Matrix: Water
Analysis Batch: 569060

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 568979

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	10	U	10	0.29	ug/L		11/16/18 09:01	11/16/18 17:16	1
Pyrene	10	U	10	1.6	ug/L		11/16/18 09:01	11/16/18 17:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	108		14 - 149	11/16/18 09:01	11/16/18 17:16	1
2-Fluorobiphenyl	95		44 - 129	11/16/18 09:01	11/16/18 17:16	1
2-Fluorophenol	53		10 - 76	11/16/18 09:01	11/16/18 17:16	1
Nitrobenzene-d5	113		15 - 314	11/16/18 09:01	11/16/18 17:16	1
Phenol-d5	36		8 - 424	11/16/18 09:01	11/16/18 17:16	1
Terphenyl-d14	102		28 - 150	11/16/18 09:01	11/16/18 17:16	1

Lab Sample ID: LCS 460-568979/2-A
Matrix: Water
Analysis Batch: 569060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 568979

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	80.0	54.0		ug/L		67	44 - 142
1,2-Dichlorobenzene	80.0	51.4		ug/L		64	60 - 140
1,2-Diphenylhydrazine	80.0	77.2		ug/L		96	60 - 140
1,3-Dichlorobenzene	80.0	49.1		ug/L		61	60 - 140
1,4-Dichlorobenzene	80.0	48.7		ug/L		61	60 - 140
2,2'-oxybis[1-chloropropane]	80.0	66.1		ug/L		83	36 - 166
2,4,6-Trichlorophenol	80.0	71.7		ug/L		90	37 - 144
2,4-Dichlorophenol	80.0	67.6		ug/L		85	39 - 135
2,4-Dimethylphenol	80.0	65.5		ug/L		82	32 - 120
2,4-Dinitrophenol	160	155		ug/L		97	0.1 - 191
2,4-Dinitrotoluene	80.0	67.7		ug/L		85	39 - 139
2,6-Dinitrotoluene	80.0	73.9		ug/L		92	50 - 158
2-Chloronaphthalene	80.0	64.1		ug/L		80	60 - 120
2-Chlorophenol	80.0	61.3		ug/L		77	23 - 134
2-Nitrophenol	80.0	73.7		ug/L		92	29 - 182
3,3'-Dichlorobenzidine	80.0	70.0		ug/L		88	0.1 - 262
4,6-Dinitro-2-methylphenol	160	151		ug/L		94	0.1 - 181
4-Bromophenyl phenyl ether	80.0	70.9		ug/L		89	53 - 127
4-Chloro-3-methylphenol	80.0	62.4		ug/L		78	22 - 147
4-Chlorophenyl phenyl ether	80.0	65.1		ug/L		81	25 - 158
4-Nitrophenol	160	64.7		ug/L		40	0.1 - 132
Acenaphthene	80.0	65.0		ug/L		81	47 - 135
Acenaphthylene	80.0	71.4		ug/L		89	33 - 145
Anthracene	80.0	68.9		ug/L		86	27 - 133
Benzidine	80.0	49.6		ug/L		62	60 - 140
Benzo[a]anthracene	80.0	67.6		ug/L		85	33 - 143
Benzo[a]pyrene	80.0	72.0		ug/L		90	17 - 163
Benzo[b]fluoranthene	80.0	70.0		ug/L		88	24 - 159
Benzo[g,h,i]perylene	80.0	72.7		ug/L		91	0.1 - 219
Benzo[k]fluoranthene	80.0	72.2		ug/L		90	11 - 162
Bis(2-chloroethoxy)methane	80.0	69.5		ug/L		87	33 - 184
Bis(2-chloroethyl)ether	80.0	64.0		ug/L		80	12 - 158

TestAmerica Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 460-568979/2-A
Matrix: Water
Analysis Batch: 569060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 568979

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-ethylhexyl) phthalate	80.0	78.0		ug/L		98	8 - 158
Butyl benzyl phthalate	80.0	77.7		ug/L		97	0.1 - 152
Chrysene	80.0	71.5		ug/L		89	17 - 168
Dibenz(a,h)anthracene	80.0	74.9		ug/L		94	0.1 - 227
Diethyl phthalate	80.0	70.3		ug/L		88	0.1 - 120
Dimethyl phthalate	80.0	65.1		ug/L		81	0.1 - 120
Di-n-butyl phthalate	80.0	74.0		ug/L		93	1 - 120
Di-n-octyl phthalate	80.0	78.2		ug/L		98	4 - 146
Fluoranthene	80.0	68.3		ug/L		85	26 - 137
Fluorene	80.0	65.2		ug/L		81	59 - 121
Hexachlorobenzene	80.0	69.1		ug/L		86	0.1 - 152
Hexachlorobutadiene	80.0	51.2		ug/L		64	24 - 120
Hexachlorocyclopentadiene	80.0	57.8		ug/L		72	60 - 140
Hexachloroethane	80.0	47.7		ug/L		60	40 - 120
Indeno[1,2,3-cd]pyrene	80.0	72.7		ug/L		91	0.1 - 171
Isophorone	80.0	61.2		ug/L		77	21 - 196
Naphthalene	80.0	59.5		ug/L		74	21 - 133
Nitrobenzene	80.0	63.0		ug/L		79	35 - 180
N-Nitrosodimethylamine	80.0	39.4	*	ug/L		49	60 - 140
N-Nitrosodi-n-propylamine	80.0	62.2		ug/L		78	0.1 - 230
N-Nitrosodiphenylamine	80.0	71.9		ug/L		90	60 - 140
Pentachlorophenol	160	142		ug/L		89	14 - 176
Phenanthrene	80.0	68.4		ug/L		86	54 - 120
Phenol	80.0	33.1		ug/L		41	5 - 120
Pyrene	80.0	72.7		ug/L		91	52 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	82		14 - 149
2-Fluorobiphenyl	78		44 - 129
2-Fluorophenol	51		10 - 76
Nitrobenzene-d5	90		15 - 314
Phenol-d5	36		8 - 424
Terphenyl-d14	77		28 - 150

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 460-569340/1-A
Matrix: Water
Analysis Batch: 569428

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 569340

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	10.0	U	10.0	4.1	ug/L		11/17/18 18:00	11/18/18 13:08	1
Arsenic	5.0	U	5.0	4.2	ug/L		11/17/18 18:00	11/18/18 13:08	1
Beryllium	2.0	U	2.0	1.5	ug/L		11/17/18 18:00	11/18/18 13:08	1
Cadmium	5.0	U	5.0	2.1	ug/L		11/17/18 18:00	11/18/18 13:08	1
Chromium	10.0	U	10.0	5.9	ug/L		11/17/18 18:00	11/18/18 13:08	1
Copper	25.0	U	25.0	5.5	ug/L		11/17/18 18:00	11/18/18 13:08	1
Lead	5.0	U	5.0	3.8	ug/L		11/17/18 18:00	11/18/18 13:08	1

TestAmerica Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 460-569340/1-A
Matrix: Water
Analysis Batch: 569428

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 569340

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nickel	40.0	U	40.0	6.3	ug/L		11/17/18 18:00	11/18/18 13:08	1
Selenium	5.0	U	5.0	4.2	ug/L		11/17/18 18:00	11/18/18 13:08	1
Silver	10.0	U	10.0	1.3	ug/L		11/17/18 18:00	11/18/18 13:08	1
Thallium	10.0	U	10.0	8.7	ug/L		11/17/18 18:00	11/18/18 13:08	1
Zinc	30.0	U	30.0	5.4	ug/L		11/17/18 18:00	11/18/18 13:08	1

Lab Sample ID: LCS 460-569340/2-A
Matrix: Water
Analysis Batch: 569428

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 569340

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Antimony	500	468.4		ug/L		94	85 - 115
Arsenic	2000	1890		ug/L		95	85 - 115
Beryllium	50.0	47.48		ug/L		95	85 - 115
Cadmium	50.0	49.48		ug/L		99	85 - 115
Chromium	200	191.4		ug/L		96	85 - 115
Copper	250	230.9		ug/L		92	85 - 115
Lead	500	481.4		ug/L		96	85 - 115
Nickel	500	476.2		ug/L		95	85 - 115
Selenium	2000	1956		ug/L		98	85 - 115
Silver	50.0	45.24		ug/L		90	85 - 115
Thallium	2000	1970		ug/L		99	85 - 115
Zinc	500	495.2		ug/L		99	85 - 115

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 460-569022/1-A
Matrix: Water
Analysis Batch: 569091

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 569022

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	0.20	U	0.20	0.12	ug/L		11/16/18 12:33	11/16/18 14:21	1

Lab Sample ID: LCS 460-569022/2-A
Matrix: Water
Analysis Batch: 569091

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 569022

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Mercury	1.00	0.871		ug/L		87	85 - 115

Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 460-569616/1-A
Matrix: Water
Analysis Batch: 569656

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 569616

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cyanide, Total	0.010	U	0.010	0.0020	mg/L		11/19/18 08:52	11/19/18 11:27	1

TestAmerica Buffalo

QC Sample Results

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Method: 335.4 - Cyanide, Total (Continued)

Lab Sample ID: LCS 460-569616/2-A
Matrix: Water
Analysis Batch: 569656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 569616

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.100	0.101		mg/L		101	90 - 110

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

QC Association Summary

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

GC/MS VOA

Analysis Batch: 569376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145167-1	EAST BERM_11122018	Total/NA	Water	624.1	
480-145167-2	WEST BERM_11122018	Total/NA	Water	624.1	
MB 460-569376/8	Method Blank	Total/NA	Water	624.1	
LCS 460-569376/3	Lab Control Sample	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 568979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145167-1	EAST BERM_11122018	Total/NA	Water	625	
480-145167-2	WEST BERM_11122018	Total/NA	Water	625	
MB 460-568979/1-A	Method Blank	Total/NA	Water	625	
LCS 460-568979/2-A	Lab Control Sample	Total/NA	Water	625	

Analysis Batch: 569060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145167-1	EAST BERM_11122018	Total/NA	Water	625.1	568979
480-145167-2	WEST BERM_11122018	Total/NA	Water	625.1	568979
MB 460-568979/1-A	Method Blank	Total/NA	Water	625.1	568979
LCS 460-568979/2-A	Lab Control Sample	Total/NA	Water	625.1	568979

Metals

Prep Batch: 569022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145167-1	EAST BERM_11122018	Total/NA	Water	245.1	
480-145167-2	WEST BERM_11122018	Total/NA	Water	245.1	
MB 460-569022/1-A	Method Blank	Total/NA	Water	245.1	
LCS 460-569022/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 569091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145167-1	EAST BERM_11122018	Total/NA	Water	245.1	569022
480-145167-2	WEST BERM_11122018	Total/NA	Water	245.1	569022
MB 460-569022/1-A	Method Blank	Total/NA	Water	245.1	569022
LCS 460-569022/2-A	Lab Control Sample	Total/NA	Water	245.1	569022

Prep Batch: 569340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145167-1	EAST BERM_11122018	Total Recoverable	Water	200.7	
480-145167-2	WEST BERM_11122018	Total Recoverable	Water	200.7	
MB 460-569340/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 460-569340/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 569428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145167-1	EAST BERM_11122018	Total Recoverable	Water	200.7 Rev 4.4	569340
480-145167-2	WEST BERM_11122018	Total Recoverable	Water	200.7 Rev 4.4	569340
MB 460-569340/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	569340
LCS 460-569340/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	569340

TestAmerica Buffalo

QC Association Summary

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

General Chemistry

Prep Batch: 569616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145167-1	EAST BERM_11122018	Total/NA	Water	Distill/CN	
480-145167-2	WEST BERM_11122018	Total/NA	Water	Distill/CN	
MB 460-569616/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 460-569616/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 569656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145167-1	EAST BERM_11122018	Total/NA	Water	335.4	569616
480-145167-2	WEST BERM_11122018	Total/NA	Water	335.4	569616
MB 460-569616/1-A	Method Blank	Total/NA	Water	335.4	569616
LCS 460-569616/2-A	Lab Control Sample	Total/NA	Water	335.4	569616

Lab Chronicle

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Client Sample ID: EAST BERM_11122018

Lab Sample ID: 480-145167-1

Date Collected: 11/13/18 15:30

Matrix: Water

Date Received: 11/13/18 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	569376	11/18/18 10:09	XXC	TAL EDI
Total/NA	Prep	625			568979	11/16/18 09:01	DXB	TAL EDI
Total/NA	Analysis	625.1		1	569060	11/17/18 00:38	YAH	TAL EDI
Total Recoverable	Prep	200.7			569340	11/17/18 18:00	GAE	TAL EDI
Total Recoverable	Analysis	200.7 Rev 4.4		1	569428	11/18/18 13:27	CDC	TAL EDI
Total/NA	Prep	245.1			569022	11/16/18 12:33	RBS	TAL EDI
Total/NA	Analysis	245.1		1	569091	11/16/18 14:32	RBS	TAL EDI
Total/NA	Prep	Distill/CN			569616	11/19/18 08:52	IAA	TAL EDI
Total/NA	Analysis	335.4		1	569656	11/19/18 11:53	HTV	TAL EDI

Client Sample ID: WEST BERM_11122018

Lab Sample ID: 480-145167-2

Date Collected: 11/13/18 15:45

Matrix: Water

Date Received: 11/13/18 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	569376	11/18/18 10:35	XXC	TAL EDI
Total/NA	Prep	625			568979	11/16/18 09:01	DXB	TAL EDI
Total/NA	Analysis	625.1		1	569060	11/17/18 00:58	YAH	TAL EDI
Total Recoverable	Prep	200.7			569340	11/17/18 18:00	GAE	TAL EDI
Total Recoverable	Analysis	200.7 Rev 4.4		1	569428	11/18/18 13:30	CDC	TAL EDI
Total/NA	Prep	245.1			569022	11/16/18 12:33	RBS	TAL EDI
Total/NA	Analysis	245.1		1	569091	11/16/18 14:33	RBS	TAL EDI
Total/NA	Prep	Distill/CN			569616	11/19/18 08:52	IAA	TAL EDI
Total/NA	Analysis	335.4		1	569656	11/19/18 11:54	HTV	TAL EDI

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Laboratory: TestAmerica Edison

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11452	04-01-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.7 Rev 4.4	200.7	Water	Copper
624.1		Water	1,2-Dichloroethene, Total
625.1	625	Water	1,2-Dichlorobenzene
625.1	625	Water	1,3-Dichlorobenzene
625.1	625	Water	1,4-Dichlorobenzene
625.1	625	Water	4-Chlorophenyl phenyl ether

Method Summary

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL EDI
625.1	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL EDI
200.7 Rev 4.4	Metals (ICP)	EPA	TAL EDI
245.1	Mercury (CVAA)	EPA	TAL EDI
335.4	Cyanide, Total	MCAWW	TAL EDI
200.7	Preparation, Total Recoverable Metals	EPA	TAL EDI
245.1	Preparation, Mercury	EPA	TAL EDI
625	Liquid-Liquid Extraction	40CFR136A	TAL EDI
Distill/CN	Distillation, Cyanide	None	TAL EDI

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

None = None

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: Parsons Corporation
Project/Site: Area 108

TestAmerica Job ID: 480-145167-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-145167-1	EAST BERM_11122018	Water	11/13/18 15:30	11/13/18 17:00
480-145167-2	WEST BERM_11122018	Water	11/13/18 15:45	11/13/18 17:00

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Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 480-145167-1

Login Number: 145167

List Number: 1

Creator: Stopa, Erik S

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	PARSONS
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	



Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 480-145167-1

Login Number: 145167

List Number: 2

Creator: Armbruster, Chris

List Source: TestAmerica Edison

List Creation: 11/15/18 10:44 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3°, 5.4°C IR9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Honeywell International Inc.

PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY

451470

SGS Job Number: JC89622

Sampling Date: 06/06/19

Report to:

Parsons Engineering Science

Lorraine.Weber@parsons.com

ATTN: Lorraine Weber

Total number of pages in report: 26



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read "Mike Earp".

Mike Earp
General Manager

Client Service contact: Rocus Peters 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

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Sample Summary

Honeywell International Inc.

Job No: JC89622

PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY
 Project No: 451470

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC89622-1	06/06/19	13:00	06/07/19	SO	Solid	TANK 1 TAR
JC89622-1A	06/06/19	13:00	06/07/19	SO	Solid	TANK 1 TAR
JC89622-2	06/06/19	10:00	06/07/19	SO	Solid	TANK 3 TAR
JC89622-2A	06/06/19	10:00	06/07/19	SO	Solid	TANK 3 TAR

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Honeywell International Inc.

Job No JC89622

Site: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY

Report Date 6/25/2019 4:31:02 PM

On 06/07/2019, 2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC89622 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260C

Matrix: LEACHATE

Batch ID: V2V2432

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC89622-1LS, JC89622-1MS, JC89622-1MSD were used as the QC samples indicated.
- JC89622-1: Diluted due to high concentration of target and non-target compound.

MS Semi-volatiles By Method SW846 8270D

Matrix: LEACHATE

Batch ID: OP21086

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC89749-5ALS, JC89749-5AMS, JC89749-5AMSD were used as the QC samples indicated.
- JC89622-2 for Nitrobenzene: Associated CCV outside of control limits low. Low level standard analyzed to demonstrate system suitability to detect affected analytes.
- JC89622-1 for Pentachlorophenol: Associated CCV outside of control limits high, sample was ND.
- JC89622-1 for Nitrobenzene: Associated CCV outside of control limits low. Low level standard analyzed to demonstrate system suitability to detect affected analytes.
- JC89622-2 for Pentachlorophenol: Associated CCV outside of control limits high, sample was ND.

GC/LC Semi-volatiles By Method SW846 8081B

Matrix: LEACHATE

Batch ID: OP21076

- All samples were extracted within the recommended method holding time.
- Sample(s) JC89749-5ALS, JC89749-5AMS, JC89749-5AMSD, OP21076-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- OP21076-BS1 for Methoxychlor: Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.

GC/LC Semi-volatiles By Method SW846 8151A

Matrix: LEACHATE

Batch ID: OP21087

- All samples were extracted within the recommended method holding time.
- Sample(s) JC89749-5ALS, JC89749-5AMS, JC89749-5AMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Tuesday, June 25, 2019

Page 1 of 2

Metals Analysis By Method SW846 6010D

Matrix: LEACHATE **Batch ID:** MP15681

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC89749-5AMS, JC89749-5AMSD, JC89749-5ASDL were used as the QC samples for metals.
- Samples(s) JC89622-1, JC89622-2: New York does not offer 3010A certification for antimony and silver. The laboratory is certified for method 3010A (Acid Digestion for Total Metals) for all other metals and is certified for the associated analytical methods of 6010C (ICP Analysis) and 6020A (ICP-MS Analysis). New York does certify for method 3005A (Acid Digestion for Total Recoverable or Dissolved Metals) for antimony and silver and the laboratory holds that certification, but that provides total recoverable rather than total metals results.

Matrix: SO **Batch ID:** MP15650

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC89622-1AMSD, JC89622-1ASDL, JC89622-1AMS were used as the QC samples for metals.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Sulfur are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

Metals Analysis By Method SW846 7470A

Matrix: LEACHATE **Batch ID:** MP15713

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC89749-5AMS, JC89749-5AMSD were used as the QC samples for metals.

General Chemistry By Method ASTM D240-92

Matrix: SO **Batch ID:** GP21854

- Sample(s) TD40247-1DUP were used as the QC samples for Heat Content, BTU.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JC89622
Account: Honeywell International Inc.
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY
Collected: 06/06/19



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JC89622-1 TANK 1 TAR

Heat Content, BTU	13700	100			BTU/lb	ASTM D240-92
Benzene ^a	7.74	0.025	0.021		mg/l	SW846 8260C
2-Methylphenol	0.261	0.020	0.0089		mg/l	SW846 8270D
3&4-Methylphenol	0.738	0.020	0.0088		mg/l	SW846 8270D
Pyridine	0.0082 J	0.020	0.0039		mg/l	SW846 8270D

JC89622-1A TANK 1 TAR

Sulfur	1410	10			mg/kg	SW846 6010D
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JC89622-2 TANK 3 TAR

Heat Content, BTU	16000	100			BTU/lb	ASTM D240-92
Benzene	0.910	0.0025	0.0021		mg/l	SW846 8260C
2-Methylphenol	0.161	0.020	0.0089		mg/l	SW846 8270D
3&4-Methylphenol	0.374	0.020	0.0088		mg/l	SW846 8270D

JC89622-2A TANK 3 TAR

Sulfur	3150	9.6			mg/kg	SW846 6010D
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(a) Diluted due to high concentration of target and non-target compound.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: TANK 1 TAR		
Lab Sample ID: JC89622-1		Date Sampled: 06/06/19
Matrix: SO - Solid		Date Received: 06/07/19
Method: SW846 8260C SW846 1311		Percent Solids: n/a ^a
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^b	2V59297.D	50	06/20/19 11:48	EH	06/18/19 10:00	GP21888	V2V2432
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	7.74	D018	0.50	0.025	0.021	mg/l	
78-93-3	2-Butanone (MEK)	ND	D035	200	1.0	0.34	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.050	0.028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.050	0.028	mg/l	
67-66-3	Chloroform	ND	D022	6.0	0.050	0.025	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.050	0.025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.050	0.030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.050	0.030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.050	0.045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.050	0.026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.050	0.039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		76-120%
17060-07-0	1,2-Dichloroethane-D4	96%		64-135%
2037-26-5	Toluene-D8	94%		76-117%
460-00-4	4-Bromofluorobenzene	92%		72-122%

- (a) All results reported on a wet weight basis.
- (b) Diluted due to high concentration of target and non-target compound.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound



4.1
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Report of Analysis

Client Sample ID:	TANK 1 TAR	Date Sampled:	06/06/19
Lab Sample ID:	JC89622-1	Date Received:	06/07/19
Matrix:	SO - Solid	Percent Solids:	n/a ^a
Method:	SW846 8270D SW846 3510C		
Project:	PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M113068.D	1	06/24/19 18:20	HSS	06/20/19 17:20	OP21086	E2M5025
Run #2							

Run #	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	0.261	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	0.738	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol ^b	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene ^c	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	0.0082	D038	5.0	0.020	0.0039	mg/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	23%		14-88%
4165-62-2	Phenol-d5	15%		10-110%
118-79-6	2,4,6-Tribromophenol	66%		39-149%
4165-60-0	Nitrobenzene-d5	50%		32-128%
321-60-8	2-Fluorobiphenyl	41%		35-119%
1718-51-0	Terphenyl-d14	62%		10-126%

(a) All results reported on a wet weight basis.

(b) Associated CCV outside of control limits high, sample was ND.

(c) Associated CCV outside of control limits low. Low level standard analyzed to demonstrate system suitability to detect affected analytes.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TANK 1 TAR		Date Sampled: 06/06/19
Lab Sample ID: JC89622-1		Date Received: 06/07/19
Matrix: SO - Solid		Percent Solids: n/a ^a
Method: SW846 8151A SW846 3510C		
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G123465.D	1	06/21/19 12:39	MH	06/19/19 11:00	OP21087	G3G4332
Run #2							

Run #	Initial Volume	Final Volume
Run #1	30.0 ml	2.5 ml
Run #2		

Herbicide TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D	ND	D016	10	0.0042	0.0012	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0012	0.00025	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	88%		13-169%
19719-28-9	2,4-DCAA	86%		13-169%

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: TANK 1 TAR		
Lab Sample ID: JC89622-1		Date Sampled: 06/06/19
Matrix: SO - Solid		Date Received: 06/07/19
Method: SW846 8081B SW846 3510C		Percent Solids: n/a ^a
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G960328.D	1	06/18/19 03:11	MH	06/17/19 18:10	OP21076	G4G2784
Run #2							

Run #	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		30-137%
877-09-8	Tetrachloro-m-xylene	78%		30-137%
2051-24-3	Decachlorobiphenyl	60%		10-137%
2051-24-3	Decachlorobiphenyl	68%		10-137%

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: TANK 1 TAR		Date Sampled: 06/06/19
Lab Sample ID: JC89622-1		Date Received: 06/07/19
Matrix: SO - Solid		Percent Solids: n/a ^a
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.50	D004	5.0	0.50	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Barium	< 1.0	D005	100	1.0	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Cadmium	< 0.020	D006	1.0	0.020	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Chromium	< 0.050	D007	5.0	0.050	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Lead	< 0.50	D008	5.0	0.50	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	06/17/19	06/17/19 EAL	SW846 7470A ¹	SW846 7470A ⁴
Selenium	< 0.50	D010	1.0	0.50	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Silver	< 0.050	D011	5.0	0.050	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³

- (1) Instrument QC Batch: MA46927
- (2) Instrument QC Batch: MA46935
- (3) Prep QC Batch: MP15681
- (4) Prep QC Batch: MP15713

- (a) All results reported on a wet weight basis.

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID: TANK 1 TAR		Date Sampled: 06/06/19
Lab Sample ID: JC89622-1		Date Received: 06/07/19
Matrix: SO - Solid		Percent Solids: n/a ^a
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Heat Content, BTU	13700	100	BTU/lb	1	06/16/19	JOO	ASTM D240-92

(a) All results reported on a wet weight basis.

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: TANK 1 TAR		Date Sampled: 06/06/19
Lab Sample ID: JC89622-1A		Date Received: 06/07/19
Matrix: SO - Solid		Percent Solids: n/a ^a
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Sulfur	1410	10	mg/kg	1	06/14/19	06/14/19 ND	SW846 6010D ¹	SW846 3050B ²

(1) Instrument QC Batch: MA46925

(2) Prep QC Batch: MP15650

(a) All results reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: TANK 3 TAR		Date Sampled: 06/06/19
Lab Sample ID: JC89622-2		Date Received: 06/07/19
Matrix: SO - Solid		Percent Solids: n/a ^a
Method: SW846 8260C SW846 1311		
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V59298.D	5	06/20/19 12:18	EH	06/18/19 10:00	GP21888	V2V2432
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	0.910	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK)	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform	ND	D022	6.0	0.0050	0.0025	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		76-120%
17060-07-0	1,2-Dichloroethane-D4	96%		64-135%
2037-26-5	Toluene-D8	95%		76-117%
460-00-4	4-Bromofluorobenzene	92%		72-122%

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID: TANK 3 TAR		
Lab Sample ID: JC89622-2		Date Sampled: 06/06/19
Matrix: SO - Solid		Date Received: 06/07/19
Method: SW846 8270D SW846 3510C		Percent Solids: n/a ^a
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M113069.D	1	06/24/19 18:47	HSS	06/20/19 17:20	OP21086	E2M5025
Run #2							

Run #	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	0.161	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	0.374	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol ^b	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene ^c	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		14-88%
4165-62-2	Phenol-d5	24%		10-110%
118-79-6	2,4,6-Tribromophenol	91%		39-149%
4165-60-0	Nitrobenzene-d5	72%		32-128%
321-60-8	2-Fluorobiphenyl	59%		35-119%
1718-51-0	Terphenyl-d14	82%		10-126%

(a) All results reported on a wet weight basis.

(b) Associated CCV outside of control limits high, sample was ND.

(c) Associated CCV outside of control limits low. Low level standard analyzed to demonstrate system suitability to detect affected analytes.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID: TANK 3 TAR		Date Sampled: 06/06/19
Lab Sample ID: JC89622-2		Date Received: 06/07/19
Matrix: SO - Solid		Percent Solids: n/a ^a
Method: SW846 8151A SW846 3510C		
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G123466.D	1	06/21/19 13:08	MH	06/19/19 11:00	OP21087	G3G4332
Run #2							

Run #	Initial Volume	Final Volume
Run #1	30.0 ml	2.5 ml
Run #2		

Herbicide TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D	ND	D016	10	0.0042	0.0012	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0012	0.00025	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	118%		13-169%
19719-28-9	2,4-DCAA	98%		13-169%

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID: TANK 3 TAR		
Lab Sample ID: JC89622-2		Date Sampled: 06/06/19
Matrix: SO - Solid		Date Received: 06/07/19
Method: SW846 8081B SW846 3510C		Percent Solids: n/a ^a
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G960329.D	1	06/18/19 03:29	MH	06/17/19 18:10	OP21076	G4G2784
Run #2							

Run #	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	83%		30-137%
877-09-8	Tetrachloro-m-xylene	73%		30-137%
2051-24-3	Decachlorobiphenyl	71%		10-137%
2051-24-3	Decachlorobiphenyl	94%		10-137%

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID: TANK 3 TAR		Date Sampled: 06/06/19
Lab Sample ID: JC89622-2		Date Received: 06/07/19
Matrix: SO - Solid		Percent Solids: n/a ^a
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.50	D004	5.0	0.50	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Barium	< 1.0	D005	100	1.0	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Cadmium	< 0.020	D006	1.0	0.020	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Chromium	< 0.050	D007	5.0	0.050	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Lead	< 0.50	D008	5.0	0.50	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	06/17/19	06/17/19 EAL	SW846 7470A ¹	SW846 7470A ⁴
Selenium	< 0.50	D010	1.0	0.50	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³
Silver	< 0.050	D011	5.0	0.050	mg/l	1	06/17/19	06/18/19 RP	SW846 6010D ²	SW846 3010A ³

- (1) Instrument QC Batch: MA46927
- (2) Instrument QC Batch: MA46935
- (3) Prep QC Batch: MP15681
- (4) Prep QC Batch: MP15713

(a) All results reported on a wet weight basis.

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

4.3
4

Report of Analysis

Client Sample ID: TANK 3 TAR		Date Sampled: 06/06/19
Lab Sample ID: JC89622-2		Date Received: 06/07/19
Matrix: SO - Solid		Percent Solids: n/a ^a
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Heat Content, BTU	16000	100	BTU/lb	1	06/16/19	JOO	ASTM D240-92

(a) All results reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: TANK 3 TAR		Date Sampled: 06/06/19
Lab Sample ID: JC89622-2A		Date Received: 06/07/19
Matrix: SO - Solid		Percent Solids: n/a ^a
Project: PESNYL: Tonawanda Coke, 3800 River Road, Tonawanda, NY		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Sulfur	3150	9.6	mg/kg	1	06/14/19	06/17/19 ND	SW846 6010D ¹	SW846 3050B ²

(1) Instrument QC Batch: MA46932

(2) Prep QC Batch: MP15650

(a) All results reported on a wet weight basis.

RL = Reporting Limit

4.4
4

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SOL

SGS L

Regulatory Program:

Client Contact Parsons 40 LaRiviere Dr. Suite 350 Buffalo, NY 14202 716-432-7885 (xxx) xxx-xxxx FAX Project Name: AREA 1087 Waste Sampling		Project Manager: Jeffrey Poulsen Tel/Fax: 716-432-7886		Site Contact: J Poulsen		Date:	COC No:	
Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Lab Contact:		Carrier:		Sampler: For Lab Use Only: Walk-in Client Lab Sampling: Job / SDG No: JC89622		
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Sample Specific Notes:
-1 TANK 1 TAR	6/6/2019	1300	G	S	1	/	/	156
-2 TANK 3 TAR	6/6/2019	1000	G	S	1	/	/	156
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNQ3, 5=NaOH, 6=Other						INITIAL ASSESSMENT <u>IG</u>		
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison 6 <input type="checkbox"/> Unknown						LABEL VERIFICATION _____		
Special Instructions/QC Requirements & Comments: COAL TAR PRODUCT						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Dispose by Lab <input type="checkbox"/> Archive for _____ Months		
Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: <u>4.1°C</u> Cor'd:		Therm ID No.:		
Relinquished by: <u>IG</u>		Company: <u>Parsons</u>		Date/Time: <u>6/19/19 1440</u>		Received by: <u>FERRY</u>		Company:
Relinquished by: <u>FERRY</u>		Company:		Date/Time: <u>6/7/19</u>		Received by:		Company:
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:

FERRY # 8139 2024 2-72

JC89622: Chain of Custody

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5.1
5

SGS Sample Receipt Summary

Job Number: JC89622

Client: _____

Project: _____

Date / Time Received: 6/7/2019 9:50:00 AM

Delivery Method: _____

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (4.1);

Cooler Temps (Corrected) °C: Cooler 1: (3.2);

Cooler Security

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun | |
| 3. Cooler media: | Ice (Bag) | |
| 4. No. Coolers: | 1 | |

Quality Control Preservation

- | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s: pH 1-12: 206717 pH 12+: 208717 Other: (Specify) _____

Comments

SM089-03
Rev. Date 12/7/17

5.1
5

SGS Sample Receipt Summary

Job Number: JC89622

Client: PARSONS

Project: AREA 1087

Date / Time Received: 6/7/2019

Delivery Method: FedEx

Airbill #'s:

Cooler Temps (Raw Measured) °C:

Cooler Temps (Corrected) °C:

Cooler Security

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

- | | |
|------------------------------|--|
| | <u>Y or N</u> |
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| 2. Cooler temp verification: | _____ |
| 3. Cooler media: | _____ |
| 4. No. Coolers: | 1 |

Quality Control Preservation

- | | | | | |
|---------------------------------|-------------------------------------|--------------------------|--------------------------|------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> | <u>N/A</u> |
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Sample Integrity - Documentation

- | | | | |
|--|-------------------------------------|--------------------------|----------|
| | <u>Y</u> | <u>or</u> | <u>N</u> |
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |

Sample Integrity - Condition

- | | | | |
|----------------------------------|-------------------------------------|--------------------------|----------|
| | <u>Y</u> | <u>or</u> | <u>N</u> |
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 3. Condition of sample: | Intact | | |

Sample Integrity - Instructions

- | | | | | |
|---|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| | <u>Y</u> | <u>or</u> | <u>N</u> | <u>N/A</u> |
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s: pH 1-12: 206717 pH 12+: 208717 Other: (Specify) _____

Comments Both samples are Coal tar product. Place in fume hood and use caution.

SM089-03
Rev. Date 12/7/17

JC89622: Chain of Custody

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5.1
5

Responded to by: CSR: N/A

Response Date: Response Date: 6/11/2019

Response:

Response: Proceed with analysis

5.1

5

JC89622: Chain of Custody
Page 4 of 4



6016 Centralcrest St. • Houston, TX 77092
Telephone (713) 316-1800 • Fax (877) 225-9953

May 31, 2019

Jeffery Poulsen,
Project Manager,
Parsons,
40 LaRiviere Dr, Suite 350.
Buffalo, NY 14202.

Re: PTS File No: 49052
Project Name: TCC Area 108 Tanks,
Project Number:
Site Location:

Subject: **Fluid Properties Package-(Density & Viscosity at 70°F, 100°F, 105°F, 130°F, 150°F, 180°F; IFT at Room Temperature) and Water Loss test at 105°F, 150°F & 180°F.**

Dear Jeffery Poulsen,

Please find enclosed report for Physical Properties analyses conducted upon samples received from your **TCC Area 108 Tanks** project. All analyses were performed by applicable ASTM, EPA, or API methodologies. The samples are currently in storage and will be retained for thirty days past the completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please contact me or Emeka Anazodo at (713) 316-1800.

Sincerely,
PTS Laboratories, Inc.

C.A.Umeh

Chidi Umeh
Flow Laboratory Supervisor

Encl.

Project Name: TCC Area 108 Tanks
Project Number:

PTS File No: 49052
Client: Parsons

TEST PROGRAM - 20190418

FLUID ID	Date	Time	Fluid Type	Fluid Properties Package (70°F, 100°F, 130°F) LNAPL & Water	Fluid Properties Package (105°F, 150°F, 180°F) LNAPL & Water	Fluid Cleaning	Water Loss	*BTU Value	*Sulphur Test	Comment
			Method:	ASTM D445, D1481, D971	ASTM D445, D1481, D971	Proprietary		ASTM D2404	ASTM D4294	
Date Received: 20190415										
Tank 1_04112019	4/11/2019	0930	DNAPL	X	X	X	X	X	X	1.5 liters Coal tar
Tank 3_04112019	4/11/2019	1030	DNAPL	X	X	X	X	X	X	2.0 liters Coal tar
TOTALS:				2	2	2	2	2	2	

Laboratory Test Program Notes

Standard TAT for basic analysis is 10-15 business days. completion of analyses.

Fluid Properties Package - LNAPL & Water: Includes dynamic viscosity and fluid density at three temperatures (70, 100, 130°F), surface tension for each fluid, and interfacial tensions (three phase pairs; oil/water, oil/air, and water/air (at ambient laboratory temperature).

*BTU Value & Sulphur Test is to be conducted by a third-party lab.

PTS File No: 49052
 Client: Parsons
 Report Date: 05/31/19

WATER /MOISTURE LOSS OF TAR SAND BY MASS

(Methodology: ASTM D 2216)

Project Name: TCC Area 108 Tanks
 Project No:

SAMPLE ID.	Depth, ft	Temp °F	ANALYSIS DATE	ANALYSIS TIME	MATRIX	TARE WEIGHT, grams	WET SAMPLE + TARE WT., grams	DRY SAMPLE + TARE WT., grams	Moisture Loss by weight grams	MOISTURE CONTENT, % dry weight
Tank 1_04112019	N/A	105	20190507	1030	Coal Tar	76.13	125.94	125.38	0.56	1.1
	N/A	150	20190508	1000	Coal Tar	76.13	125.94	124.77	1.17	2.4
	N/A	180	20190514	1447	Coal Tar	76.13	125.94	122.65	3.29	7.1
Tank 3_04112019	N/A	105	20190507	1030	Coal Tar	75.45	138.94	138.78	0.21	0.3
	N/A	150	20190508	1000	Coal Tar	75.45	138.94	138.02	0.97	1.5
	N/A	180	20190514	1447	Coal Tar	75.45	138.94	134.70	4.29	7.2

PTS File No: 49052
 Client: Parsons
 Report Date: 05/31/19

VISCOSITY, DENSITY, and SPECIFIC GRAVITY DATA
 (METHODOLOGY: ASTM D445, ASTM D1481, API RP40)

Project Name: TCC Area 108 Tanks
 Project No:

SAMPLE ID	MATRIX	TEMPERATURE, °F	SPECIFIC GRAVITY	DENSITY, g/cc	VISCOSITY	
					centistokes	centipoise
*Tank 1_04112019	DNAPL	70	1.3155	1.3152	*	*
		100	1.3112	1.3021	*	*
		130	1.3087	1.2904	*	*
*Tank 1_04112019	DNAPL	105	1.3015	1.3013	*	*
		150	1.2889	1.2799	*	*
		180	1.2634	1.2457	*	*
Tank 3_04112019	DNAPL	70	0.9800	0.9798	200000.00	195958.07
		100	0.9806	0.9738	3921.39	3818.54
		130	0.9706	0.9638	776.34	748.26
Tank 3_04112019	DNAPL	105	0.9722	0.9720	2664.37	2589.73
		150	0.9629	0.9562	336.70	321.94
		180	0.9594	0.9459	151.19	143.01

***Tank 1_04112019 coal tar was too thick that we couldn't get it flow through available viscosimeters.
 (Only Density & Specific gravity measurements were done).**

QUALITY CONTROL DATA

Date: 05/10/19
 FLUID TYPE: Cannon® CVS S3
 TEMPERATURE, °F: 70
 DENSITY, MEASURED: 0.8616
 DENSITY, PUBLISHED: 0.8615
 RPD: 0.01
 VISCOSITY, MEASURED: 4.50
 VISCOSITY, PUBLISHED: 4.47
 RPD: 0.59
 CVS Lot #: 17301

CVS = Certified Viscosity Standard

PTS File No: 49052
 Client: Parsons
 Report Date: 05/31/19

INTERFACIAL / SURFACE TENSION DATA
 (METHODOLOGY: DuNuoy Method - ASTM D971)

Project Name: TCC Area 108 Tanks
 Project No:

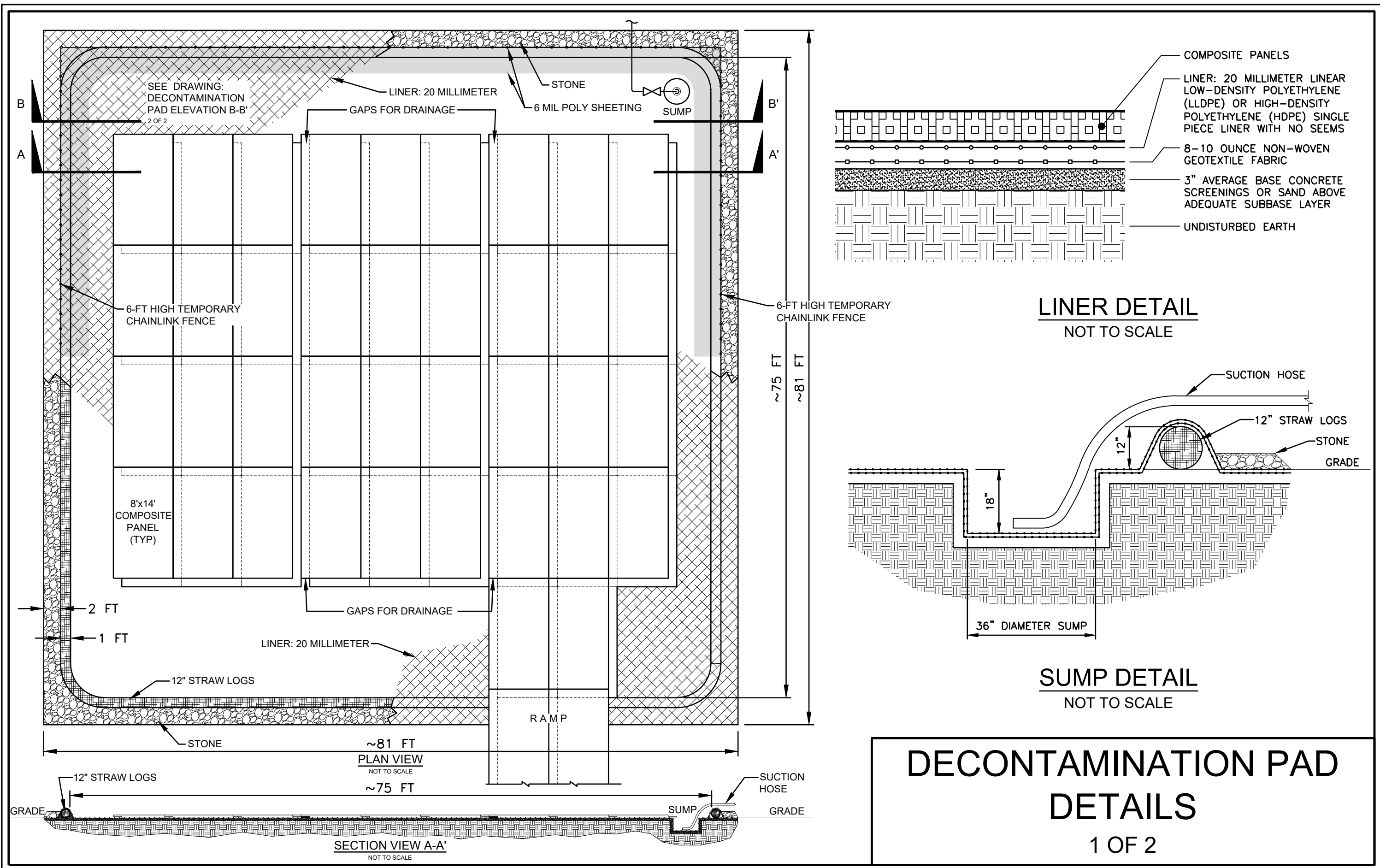
PHASE PAIR		TEMPERATURE, °F	INTERFACIAL TENSION, Dynes/centimeter
SAMPLE ID / PHASE	SAMPLE ID / PHASE		
Houston_Tap Water	Air	74.0	71.1
Tank 3_04112019_DNAPL	Air	81.0	34.0
Houston_Tap Water	Tank 3_04112019_DNAPL	77.0	43.9

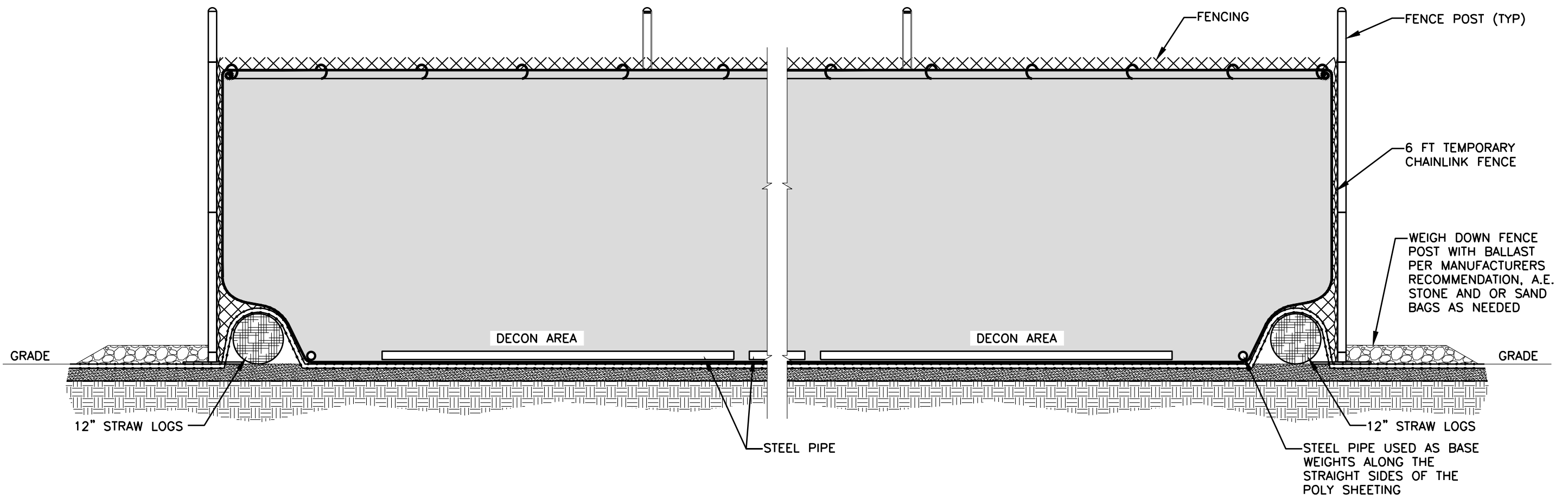
QUALITY CONTROL DATA

Date: **05/13/19**
 PHASE PAIR: DIWATER / AIR
 TEMPERATURE, °F: 72.0
 IFT, MEASURED: 71.4
 IFT, PUBLISHED: 72.4
 RPD: -1.39

APPENDIX D

DECONTAMINATION PAD DETAIL





PARTIAL FENCING WITH POLY SHEETING
 NOT TO SCALE

**DECONTAMINATION PAD
 ELEVATION B-B'**

APPENDIX E

RUSMAR SPRAY FOAM SDS



SAFETY DATA SHEET

LONG DURATION FOAM AC-645

Section 1. Identification

GHS product identifier : LONG DURATION FOAM AC-645
Chemical name : Proprietary Surfactant.
Other means of identification : Aqueous anionic surfactant mixture.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Aqueous Surfactant. Spray application for VOC and Odor control.
Area of application : Industrial applications.

Supplier/Manufacturer : Rusmar, Inc.
216 Garfield Avenue
West Chester, PA 19380
Phone: 610-436-4314
Fax: 610-436-8436

e-mail address of person responsible for this SDS : info@rusmarinc.com
Website: www.rusmarinc.com

Emergency telephone number (with hours of operation) : 888 488 8044 or 212 682 1200
CHEMTREC 800 424 9300

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.
Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.

Hazards not otherwise classified : None known.

Date of issue/Date of revision : 05/28/2015 **Date of previous issue** : No previous validation **Version** : 1 1/11

Section 3. Composition/information on ingredients

Substance/mixture : Substance
Chemical name : Proprietary Surfactant.
Other means of identification : Aqueous anionic surfactant mixture.

CAS number/other identifiers

CAS number : Not available.
Product code : Not available.

Ingredient name	Other names	%	CAS number
Proprietary Surfactant.	-	100	-

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid. [Clear viscous liquid.]
- Color** : Translucent. White.
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : 99°C (210.2°F)
- Flash point** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not applicable.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : 3.3 kPa (25 mm Hg) [room temperature]
- Vapor density** : Not available.
- Relative density** : 1.01 to 1.06
- Solubility** : Easily soluble in the following materials: cold water and hot water.
- Solubility in water** : Easily soluble.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : Keep away from heat.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Low levels of sulfur oxides on exposure to high temperatures (concentrate).

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Conclusion/Summary : Not expected.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Section 11. Toxicological information

Potential acute health effects

Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Long term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Potential chronic health effects

Not available.

General	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Section 12. Ecological information

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: Not determined.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

No products were found.

SARA 313

Not applicable.

State regulations

Massachusetts : This material is not listed.

New York : This material is not listed.

New Jersey : This material is not listed.

Pennsylvania : This material is not listed.

California Prop. 65

None of the components are listed.

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	0
Flammability	0
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

Date of issue/Date of revision	: 05/28/2015
Date of previous issue	: No previous validation
Version	: 1
Prepared by	: IHS
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

Section 16. Other information

References : HCS (U.S.A.)- Hazard Communication Standard
International transport regulations

✔ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

APPENDIX F

ASBESTOS INSPECTION REPORT

PRE-DEMOLITION BUILDING MATERIAL SAMPLING MEMORANDUM

March 11, 2019

TO: HONEYWELL TONAWANDA SITE
FROM: DAN DOUGLASS, Senior Scientist
SUBJECT: SAMPLING FOR ASBESTOS CONTENT IN BUILDING MATERIALS

Parsons conducted an asbestos survey of the small masonry pump house and piping associated with the aboveground storage tanks at Tonawanda Coke Corporation Site 108, 3800 River Road in the Town of Tonawanda, New York. The survey took place on February 28, 2019, by a NYSDOL-certified Asbestos Building Inspector.

The survey was completed in accordance with local, state and federal regulations, and conforms to sampling protocol detailed in the Asbestos Hazard Emergency Response Act (AHERA). Representative bulk samples of suspect-ACM were collected randomly from homogeneous surfaces. The number of samples collected was determined by the type and quantity of the material.

Laboratory services were provided by HSE Consulting Services, LLC, of Cicero, New York. HSE is accredited by the New York State Environmental Laboratory Approval Program (ELAP). Sample analysis was conducted using Polarized Light Microscopy with dispersion staining (PLM-DS) in accordance with the New York State ELAP 198.1 Method. Any building material that contains greater than one percent of asbestos is considered to be an ACM.

The pump house is a masonry block structure with a flat roof that appears to have been built in the 1940s or 1950s and is approximately 600 square feet. The building has a concrete floor and concrete panels on the ceiling. Nine suspect materials were sampled; each of the materials is considered ACM. Three additional materials were inaccessible and are Presumed ACM (PACM).

Building materials and pipe insulation determined to contain asbestos are:

- Gray window glazing found on windows; much of the material is cracked or broken and is in poor condition.
- Gray caulking on door and window frames – two similar, but separate materials, found around the perimeter of the metal door frames and the metal window frames. Materials are in poor condition.
- Pipe and fitting insulation – all pipe and fitting insulation at the building contains asbestos. Two types of black outer wrap / jacketing are ACM, as is the white, chalky, fibrous block insulation beneath the black covering. Gray, mudded fitting insulation is also ACM. ACM insulation is found on pipe sizes including 1-inch, 4-inch and 8-inch diameter lines, inside and outside the building. These materials are in poor condition.
- Debris of pipe and fitting insulation covered many surfaces in the building. Snow, ice and clutter prevented observation of the entire floor space, but ACM debris is estimated to be present on all interior surfaces; ACM debris may be present at the exterior but exterior surfaces were inaccessible under a covering of snow.

PARSONS

March 11, 2019

Page 2

- Roofing and flashing materials are considered PACM. The roof was inaccessible on the day of the survey. It is believed to be constructed of built-up materials.
- Electric wire insulation was not sampled due to potential electrical hazard and is PACM.
- Gasket material is present on pumps and other equipment in the building. Gasket material was not accessible and any gasket at the building is PACM.

Materials that are considered non-suspect and were not sampled include brick, plastic and wood, in addition to other materials. Survey results are summarized on the following table; exterior quantities include piping at the exterior of the pump house, into the tank area to the south and on the overhead rack to the conveyor area to the northwest:

Material	Sample ID	Description / Location	Asbestos Content	For ACM only:	
				Condition, Friability	Approx. Quantity
Roofing materials	Inaccessible - presumed ACM	Built-up roofing and associated flashing	PACM	Unknown, Non-friable	600 SF
Electric wire insulation	Inaccessible - presumed ACM	Gray cloth material	PACM	Fair, Friable	Unknown
Gaskets	Inaccessible - presumed ACM	At pumps and other equipment	PACM	Fair, Non-friable	Unknown
Gray window glazing	HWT-WGZ-1-1	Hard tan / gray material	1.2% Chrysotile	Poor, Non-friable	25 SF
	HWT-WGZ-1-2				
Gray door caulk	HWT-DCK-2-1	Gray, at perimeter of door frames	12% Chrysotile	Poor, Non-friable	12 SF
	HWT-DCK-2-2				
Gray window caulk	HWT-WCK-3-1	Gray / tan, at perimeter of window frame	8.8% Chrysotile	Poor, Non-friable	14 SF
	HWT-WCK-3-2				
Pipe insulation on 1" and 2" lines	HWT-PI-4-1	Black cloth pipe jacket on pipes and fittings, smaller lines (over #5)	1.7% Amosite	Poor, Non-friable	Interior: 35 LF Exterior: 200 LF ^a
	HWT-PI-4-2				
	HWT-PI-4-3				
Pipe insulation on 1" and 2" lines	HWT-PI-5-1	White, chalky, fibrous material on smaller lines (under #4)	27% Amosite, Tr. Chrysotile	Poor, Friable	
	HWT-PI-5-2				
	HWT-PI-5-3				
Fitting insulation on 1" and 2" lines	HWT-FI-6-1	Gray, mudded material on all lines (under mtl. # 4 & #9)	5.6% Chrysotile	Poor, Friable	Interior: 28 each Exterior: 25 each
	HWT-FI-6-2				
	HWT-FI-6-3				
Pipe insulation on 4" and 8" lines	HWT-PI-7-1	Thick, black tar-paper-like outer layer over pipe and fitting ins., larger lines (over #8)	15% Chrysotile, 4.9% Amosite	Poor, Non-friable	Interior: 37 LF Exterior: 800 LF ^a
	HWT-PI-7-2				
	HWT-PI-7-3				
Pipe insulation on 4" and 8" lines	HWT-PI-8-1	White, chalky, fibrous material, larger lines (under #7)	29% Amosite, Tr. Chrysotile	Poor, Friable	
	HWT-PI-8-2				
	HWT-PI-8-3				
Fitting insulation on 4" and 8" lines	HWT-FI-9-1	Black tar-like wrap w/ chicken wire, larger lines (over #6)	13% Chrysotile, 4.3% Amosite	Poor, Non-friable	Interior: 9 each Exterior: 20 each
	HWT-FI-9-2				
	HWT-FI-9-3				
ACM debris	ACM	Debris from ACM pipe and fitting insulation	ACM	Poor, Friable	Interior: 600 SF Exterior: unknown

^a Exterior quantities based on 150 feet distance between pump house and conveyor area via overhead rack; also 50 feet distance from pump house to tank area.

Condition: Fair is up to 10% localized damage or 25% distributed damage; Poor is >10 or >25%.

Tr indicates trace amount, <1%.

Condition, friability and quantity for inaccessible materials are estimated.

PARSONS

March 11, 2019

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Photographs of the building materials are included with this report. A copy of the laboratory report for samples included in this document is attached, along with a copy of the NYSDOL certification of the laboratory, the building inspector certification and Parsons' corporate asbestos license.



Window glazing



Window caulk



Door caulk



Black cloth pipe wrap over white pipe and fitting insulation



Black pipe wrap with wire (lower pipe) and tar-paper-like wrap on upper pipe



ACM pipe insulation debris on surfaces in many areas



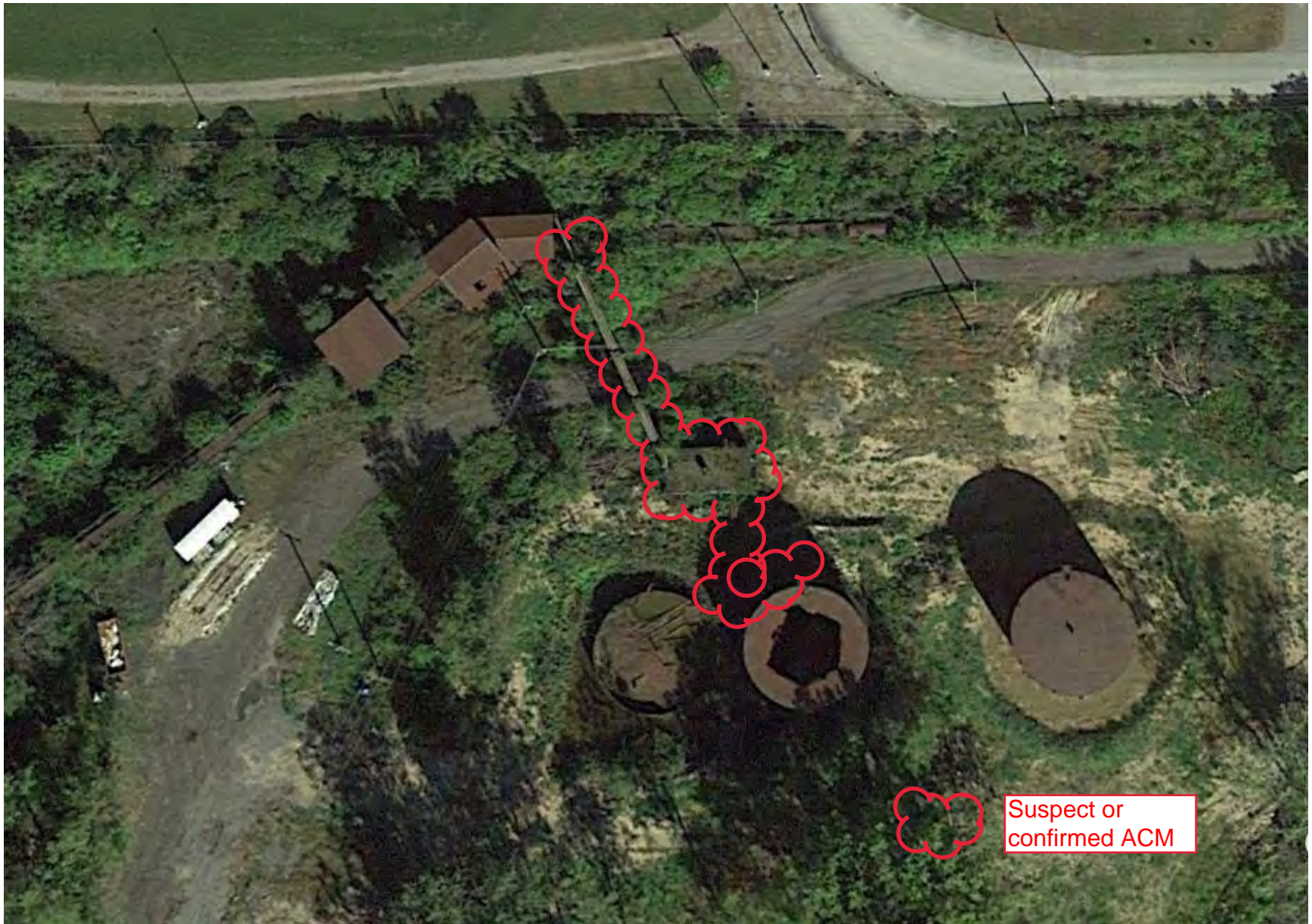
ACM pipe and fitting insulation in poor condition near ceiling and at pump



PACM cloth wrap on electrical wiring



Exterior of building (at left) with ACM piping on overhead rack towards conveyor area



Suspect or confirmed ACM



ASBESTOS ANALYSIS REPORT

Parsons
301 Plainfield Road
Suite 350
Syracuse NY 13212
Attention: Mr. Dan Douglass

Non-Gravimetrically Reduced Samples

Analysis Method - NY State ELAP 198.1/EPA 600/M4/82/020
NYS DOH ELAP ID #11973

Tuesday, March 05, 2019

Batch Number: 9771
Date Received: 3/1/2019
Date Collected: 2/28/2019
Sampled By: Dan Douglass

Project # 451470.0571

Page 1 of 1

Project Name: Tonawanda, NY, Site 108

Lab ID	Sample ID	Color	Total % Asbestos	% AM	% CH	% CR	% TM	% AC	% AN	% CE	% MW	% GW	% SY	% HH	% O	Other Type	%Non-Fibrous Material	Date Analyzed
82180	HWT-PI-5-1	White	27	27	<1.0												73	3/5/2019
82181	HWT-PI-5-2		SAFP															3/5/2019
82182	HWT-PI-5-3		SAFP															3/5/2019
82183	HWT-FI-6-2	Gray	5.6		5.6						34						60.4	3/5/2019
82184	HWT-FI-6-3		SAFP															3/5/2019
82185	HWT-PI-8-1	White	29	29	<1.0												71	3/5/2019
82186	HWT-PI-8-2		SAFP															3/5/2019
82187	HWT-PI-8-3		SAFP															3/5/2019

Reviewed and Approved By (and for questions regarding this report):

Douglas L. Gee, Technical Director

Abbreviations:

- AM - Amosite
- CH - Chrysotile
- CR - Crocidolite
- TM - Tremolite
- AC - Actinolite
- AN - Anthophyllite
- CE - Cellulose
- MW - Mineral Wool
- GW - Glass Wool
- SY - Synthetic
- HH - Horse Hair
- O - Other
- TR - Trace asbestos detected at <1%
- NAD- No Asbestos Detected
- SAFP - Stop at First Positive (not analyzed)
- N/A - Not Applicable
- NA - Not Available
- *Insufficient Sample for Analysis

HSE Consulting Services, LLC did not participate in the collection of the samples contained in this report, therefore, any information pertaining to the collection is based on information provided by the person submitting them. The results pertain only to the samples in this report.



ASBESTOS ANALYSIS REPORT Gravimetrically Reduced Samples Non-Friable Organically Bound Material

Parsons
301 Plainfield Road
Suite 350
Syracuse NY 13212
Attention: Mr. Dan Douglass

PLM Analysis Method - NY State ELAP 198.6/EPA 600/M4/82/020
NYS DOH ELAP ID #11973

Tuesday, March 05, 2019

Batch Number: 9772
Date Received: 3/1/2019
Date Collected: 2/28/2019
Sampled By: Dan Douglass

Project # 451470.0571
Project Name: Tonawanda, NY, Site 108

Page 1 of 2

Lab ID	Sample ID	Color	% Residue	PLM ANALYSIS						TEM ANALYSIS						Total % Asbestos	Date Analyzed
				%	Type	%	Type	%	Type	%	Type	%	Type	%	Type		
82188	HWT-WGZ-1-1	Tan	2.9	1.2	CH					N/A					1.2	3/4/2019	
82189	HWT-WGZ-1-2	Gray	2.7	SAFP						SAFP					SAFP	3/4/2019	
82190	HWT-DCK-2-1	Gray	37.1	12	CH					N/A				12	3/4/2019		
82191	HWT-DCK-2-2	Gray	36.9	SAFP						SAFP				SAFP	3/4/2019		
82192	HWT-WCK-3-1	Gray/Tan	32.8	8.8	CH					N/A				8.8	3/4/2019		
82193	HWT-WCK-3-2	Gray/Tan	32.5	SAFP						SAFP				SAFP	3/4/2019		
82194	HWT-PI-4-1	Black	2.5	1.7	AM					N/A				1.7	3/4/2019		
82195	HWT-PI-4-2	Black	10.2	SAFP						SAFP				SAFP	3/4/2019		
82196	HWT-PI-4-3	Black	11.5	SAFP						SAFP				SAFP	3/4/2019		
82197	HWT-FI-6-1	Black	54.3	18	CH					N/A				18	3/4/2019		
82198	HWT-PI-7-1	Black	34.4	15	CH	4.9	AM			N/A				20	3/4/2019		

Abbreviations:

AM - Amosite
CH - Chrysotile
CR - Crocidolite
TM - Tremolite
AC - Actinolite
AN - Anthophyllite

N/A - Not Applicable
NA - Not Available
NAD - No Asbestos Detected
SAFP - Stop at First Positive (not analyzed)
NR - Not Required

TR - Trace asbestos detected at less than 1%
*Insufficient sample for analysis **(Samples not analyzed must not be interpreted as being non-ACM)**
** - Inconclusive, No Asbestos Detected **(Samples with inconclusive results must not be interpreted as being non-ACM)**
***TEM analysis not performed per client's request. (Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-ACM.

NOTE: HSE Consulting Services, LLC did not participate in the collection of the samples contained in this report, therefore, any information pertaining to the collection is based on information provided by the person submitting them. The results pertain only to the samples in this report.



ASBESTOS ANALYSIS REPORT
Gravimetrically Reduced Samples
Non-Friable Organically Bound Material

Parsons
301 Plainfield Road
Suite 350
Syracuse NY 13212
Attention: Mr. Dan Douglass

PLM Analysis Method - NY State ELAP 198.6/EPA 600/M4/82/020
NYS DOH ELAP ID #11973

Tuesday, March 05, 2019

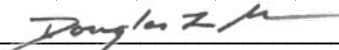
Batch Number: 9772
Date Received: 3/1/2019
Date Collected: 2/28/2019
Sampled By: Dan Douglass

Project # 451470.0571
Project Name: Tonawanda, NY, Site 108

Page 2 of 2

Lab ID	Sample ID	Color	% Residue	PLM ANALYSIS						TEM ANALYSIS						Total % Asbestos	Date Analyzed
				%	Type	%	Type	%	Type	%	Type	%	Type	%	Type		
82199	HWT-PI-7-2	Black	35.9	SAFP						SAFP					SAFP	3/4/2019	
82200	HWT-PI-7-3	Black	35.3	SAFP						SAFP					SAFP	3/4/2019	
82201	HWT-FI-9-1	Black	29.9	13	CH	4.3	AM			N/A					17	3/4/2019	
82202	HWT-FI-9-2	Black	18.9	SAFP						SAFP					SAFP	3/4/2019	
82203	HWT-FI-9-3	Black	33.2	SAFP						SAFP					SAFP	3/4/2019	

Reviewed and Approved By (and for questions regarding this report):


Douglas L. Gee, Technical Director

Abbreviations:

AM - Amosite
CH - Chrysotile
CR - Crocidolite
TM - Tremolite
AC - Actinolite
AN - Anthophyllite
N/A - Not Applicable
NA - Not Available
NAD - No Asbestos Detected
SAFP - Stop at First Positive (not analyzed)
NR - Not Required

TR - Trace asbestos detected at less than 1%
*Insufficient sample for analysis (Samples not analyzed must not be interpreted as being non-ACM)
** - Inconclusive, No Asbestos Detected (Samples with inconclusive results must not be interpreted as being non-ACM)
***TEM analysis not performed per client's request. (Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-ACM.

<1.0% Residue Remaining NOTE: HSE Consulting Services, LLC did not participate in the collection of the samples contained in this report, therefore, any information pertaining to the collection is based on information provided by the person submitting them. The results pertain only to the samples in this report.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2019
Issued April 01, 2018

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. BRIAN C. KING
HSE CONSULTING SERVICES, LLC
8636 BREWERTON ROAD
CICERO, NY 13039

NY Lab Id No: 11973

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)

NEW YORK
state department of
HEALTH

Serial No.: 58069

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

New York State – Department of Labor

Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

Parsons Engineering Of New York, Inc.
Attn: Licensing
4701 Hedgemore Drive

Charlotte, NC 28209

FILE NUMBER: 00-0769
LICENSE NUMBER: 29234
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 05/31/2018
EXPIRATION DATE: 05/31/2019

Duly Authorized Representative – Thomas H Abrams:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.



Eileen M. Franko, Director
For the Commissioner of Labor

APPENDIX G

**TOWN OF TONAWANDA INDUSTRIAL SEWER CONNECTION
APPLICATION AND PERMIT**

TOWN OF TONAWANDA

INDUSTRIAL SEWER CONNECTION PERMIT

Company Name: Honeywell
Division Name (if Applicable) _____

Mailing Address: 115 Tabor Rd.
Street or P.O. Box
Morris Plains, NJ 07590
City, State and Zip Code

Facility Address: 3800 River Rd.
Street or P.O. Box
Tonawanda, New York 14150
City, State and Zip Code

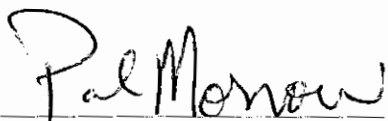
The above Industrial User is authorized to discharge industrial wastewater to the Town of Tonawanda sewer system in compliance with the Town's Sewer Use Ordinance Number 2-2000, any applicable provisions of Federal or State law or regulation, and in accordance with discharge point(s), effluent limitations, monitoring requirements, and other conditions set forth herein.

This permit is granted in accordance with the application filed on February 19, 2019 in the office of the Pretreatment Administrator, and in conformity with plans, specifications, and other data submitted to the Town in support of the above application.

Effective Date: 5/15/2019

Expiration Date: 5/14/2022

Permit No. 711

Date: 5/13/19 Signed: 

Paul Morrow
Town of Tonawanda
Pretreatment Coordinator

Permit No. 711

Modified Date: _____

WASTEWATER STREAMS AUTHORIZED FOR DISCHARGE

WASTEWATER STREAM	APPROXIMATE FLOW(GPD)	YES	NO
A. Sanitary Discharge	_____	_____	_____
B. Cooling Water	_____	_____	_____
C. Boiler Blowdown	_____	_____	_____
D. Process Wastewater	_____	_____	_____
E. Stormwater	100 GPM or less	x	_____
F. Other	_____	_____	_____

PART 1 - WASTEWATER DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

A. LOCALLY DERIVED LIMITATIONS

The industrial user shall comply with the following locally derived effluent limitations effective as of: 5/15/19

MONITORING LOCATION: Bermed Area around tanks

SAMPLE TYPE: Grab from bermed area(s) around above ground tanks

PARAMETERS	SAMPLE FREQUENCY	LIMIT ¹	PURPOSE
Priority Pollutants less Asbestos and Dioxin	Annually	*	Monitoring/Compliance
Oil and Grease	"	300 mg/l	Compliance
Ammonia	"		Monitoring
Total Phosphorus	"	6 mg/l	Surcharge
BOD	"	250 mg/l	"
TSS	"	250 mg/l	"
pH	Once per Discharge	5.0-9.5	Compliance
Flow	Monthly		

*Limits may apply depending on parameter. See Town Sewer Use Ordinance

Note: The complete list of discharge limitations for dischargers to the Town Treatment Plant is contained in the Town's Local Law 2-2000. On the basis of the application and previous monitoring, parameters deemed applicable to this discharge have been excerpted and their limitations included above. The discharger should be aware that all other limitations apply and should consider all such limitations when considering process changes or plant modifications.

PART II - SPECIAL CONDITIONS/COMPLIANCE SCHEDULE

1. *There is no sanitary discharge manhole at 3800 River Road, Tonawanda. Permittee plans on discharging to a manhole on an adjoining property. It is the responsibility of the permittee to obtain permission from the property owner of the adjoining property to discharge to this manhole.*

PART III - REPORTING REQUIREMENTS

1. *All Industries requiring submittal of self-monitoring reports (SMR's) must submit all laboratory results on all discharged samples. If a lab analysis was performed using an EPA approved test method, then those results must be included in the SMR. Persons signing SMR's must be a responsible company official, ie; owner, corporate manager, or supervise more than two hundred fifty (250) employees. Any of the above may appoint a company representative to sign SMR's but written notice must be supplied to this office authorizing said employee to sign.*

The following statement will be required on all SMR's and baseline monitoring reports (BMR):

“ I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violation.”

2. *If an Industrial User knows in advance of the need for a bypass, it shall submit prior notice to the Town, if possible at least ten days before the date of the bypass. An Industrial User shall submit oral notice of an unanticipated bypass or slug discharge that exceeds applicable Pretreatment Standards to the Town within 24 hours from the time the Industrial User becomes aware of the bypass or slug discharge. A written submission shall also be provided within 5 days of the time the Industrial User becomes aware of the bypass or slug discharge. The written submission shall contain a description of the bypass or slug discharge and its cause; the duration of the bypass/ slug discharge , including exact dates and times, and, if the bypass has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass/ slug discharge. The Town may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.*
3. *The Industrial User shall notify the Town 30 days prior to the introduction of new wastewater or pollutants or any substantial change in the volume or characteristics of the wastewater being introduced into the POTW from the User's industrial processes. The Industrial User Is required to notify the Town immediately of any changes to its facility affecting it potential for slug discharge.*

4. *Any upset experienced by the Industrial User of its treatment that places it in a temporary state of non-compliance with wastewater discharge limitations contained in this permit or other limitations specified in the Town's Ordinance shall be reported to the Town within 24 hours of first awareness of the commencement of the upset. Immediate resampling for the non-compliance pollutant shall begin. A detailed report shall be filed within 5 days.*
5. *The Industrial User is required to submit to the Town reports on the results of its sampling of the pollutants specified in Part I of this Permit. This report shall also contain monthly flows.*
6. *Analytical procedures must be performed in accordance with 40 CFR Part 136. Additional pollutants not contained in Part 136 must be performed using validated analytical methods approved by EPA (40 CFR 403.12 [g] [4]).*
7. *All self-monitoring reports shall be submitted to the following address by the 25th day of the month following the reporting period:*
Paul Morrow, Pretreatment Coordinator
Wastewater Treatment Facility
Two Mile Creek Road
Tonawanda, New York 14150

PART IV - STANDARD CONDITIONS

1. *The Industrial User shall comply with all the general prohibitive discharge standards in Article IV of the Local Law 2-2000.*
 - a. *BOD 250 mg/l, SS 250 mg/l, P 6 mg/l are not to be construed as discharge limits of the above pollutants but as a baseline for generating abnormal sewer charges. Permittees that sample more frequently than required for surchargeable parameters and have a greater than 30% variation in flow per reportable day will have a flow averaged used for surcharge calculation.*

2. RIGHT OF ENTRY

The Industrial User shall, after reasonable notification by the Town, allow the Town or its representatives, exhibiting proper credentials and identification, to enter upon the premises of the User, at all reasonable hours, for the purposes of inspection, sampling, or records inspection. Reasonable hours in the context of inspection and sampling includes any time the Industrial User is operating any process which results in a process wastewater discharge to the Town's sewerage system.

3. RECORDS RETENTION

The Industrial User shall retain and preserve for no less than three (3) years, any records, books, documents, memoranda, reports, correspondence and all summaries thereof, relating to monitoring, sampling and chemical analysis made by or in behalf of the User in connection with its discharge.

- a) *All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the Town shall be retained and preserved by the Industrial User until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.*

4. CONFIDENTIAL INFORMATION

Except for data determined to be confidential under Article VII, Section 4 of the Town's Ordinance, all reports required by this permit shall be available for public inspection at the office of the Pretreatment Coordinator, Wastewater Treatment Facility, Two Mile Creek Road, Tonawanda, New York 14150.

5. RECORDING OF RESULTS

For each measurement or sample taken pursuant to the requirements of this permit, the user shall record the following information:

- a) *The exact place, date and time of sampling;*
- b) *The dates the analyses were performed;*
- c) *The person(s) who performed the analyses;*
- d) *The analytical techniques or methods used, and*
- e) *The results of all required analyses.*
- f) *Where sanitary sewer discharge is measured by a mechanical or electronic device, accuracy of device shall be certified correct every year.*
- g) *Where sanitary sewer discharge is measured as consumed water, the water meter must be certified as per the following schedule: meter size 5/8 to 1 inch every ten years, meter size 1 inch to 4 inch every five years, and meter size 4 inches and larger every year.*

6. DILUTION

No Industrial User shall increase the use of potable or process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit

7. PROPER DISPOSAL OF PRETREATMENT SLUDGES AND SPENT CHEMICALS

The disposal of sludges and spent chemicals generated shall be done in accordance with Section 405 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

8. TOXIC SUBSTANCES

All waters shall be maintained free of toxic substances in concentrations that are toxic to or produce detrimental physiological responses in human, plant, animal, or aquatic life.

9. SIGNATORY REQUIREMENTS

All reports required by this permit shall be signed by a principal executive officer of the User, or his designee.

10. REVOCATION OF PERMIT

The permit issued to the Industrial User by the Town may be revoked when after inspection, monitoring or analysis it is determined that the discharge of wastewater to the sanitary sewer is in violation of Federal, State, or local laws, ordinances, or regulations. Additionally, falsification or intentional misrepresentation of data or statements pertaining to the permit application or any other required reporting form, shall be cause for permit revocation.

11. LIMITATIONS ON PERMIT TRANSFER

Transfer of permit. Industrial waste permits are issued to a specific user for a specific operation. In the event of any change in ownership of the industrial facility, the permittee shall notify the new owner of the existence of the permit by letter, a copy of which shall be forwarded to the Pretreatment Administrator 30 days prior to change of ownership. A new industrial waste permit must be issued to the new owner.

12. FALSIFYING INFORMATION OR TAMPERING WITH MONITORING EQUIPMENT

Knowingly making any false statement on any report or other document required by this permit or knowingly rendered any monitoring device or method inaccurate, may result in punishment under the criminal law of the Town, as well as being subjected to civil penalties and relief.

13. MODIFICATION OR REVISION OF THE PERMIT

- a) The terms and conditions of this permit may be subject to modification by the Town at any time as limitations or requirements as identified the Town's Ordinance, are modified or other just cause exists.*
- b) This permit may also be modified to incorporate special conditions resulting from the issuance of a special order.*
- c) The terms and conditions may be modified as a result of EPA promulgating a new federal Pretreatment standard.*
- d) Any permit modifications which result in new conditions in the permit shall include a reasonable time schedule for compliance if necessary.*

14. DUTY TO REAPPLY

The Town shall notify a User sixty (60) days prior to the expiration of the User's Permit. Within thirty (30) days of the notification, the User shall reapply for re-issuance of the permit on a form provided by the Town.

15. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

16. LIMITATIONS

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any invasion of personal rights, nor any infringement of Federal, State or Local regulations.

17. ENFORCEMENT OF THE SEWER USE LAW AND PERMITS

The Town has developed and received USEPA approval of its Enforcement Response Plan which details the standard responses to be taken by the Town when it encounters various violations of the Sewer Use Law or the terms of this permit. Copies of this document are available at the office of the Pretreatment Administrator. Town of Tonawanda Sewer Use Ordinance 2-2000 Article VI 165-33 allows for punitive Administrative fines of up to \$5,000 per day. The Town of Tonawanda may also maintain an action or proceeding in the name of the Town of Tonawanda in a court of competent jurisdiction for injunctive relief of any violation Article 6 of the Town Sewer Use Ordinance 2-2000

FOR OFFICE USE ONLY
Date Application Rec'd. _____
Industrial Number: _____
Investigator: _____

**TOWN OF TONAWANDA INDUSTRIAL PRETREATMENT PROGRAM
PART A - GENERAL INFORMATION/PERMIT APPLICATION
INDUSTRIAL WASTE QUESTIONNAIRE**

A1. Applicant Business Name Honeywell

A2. Address of premises discharging wastewater:

3800 RIVER ROAD, TONAWANDA, NY, 14150

Street City Zip

A3a. Business Address (if different than above):

115 Tabor Road Morris Plains NJ 07950

Street City Zip

b. Mailing Address (if different than above):

Street City Zip

A4. Chief Business Official:

Name: Steve Coladonato Title: Remediation Manager

A5. Facility Representative:

Name: Steve Coladonato Title: Remediation Manager Phone: 302-791-6738
Email: steven.coladonato@honeywell.com Fax: _____ Cell Phone: 973-216-2438

A6. Person to be contacted about this application, if different than above:

Name: Jeffrey Poulsen Title: Site Manager Phone: _____
Email: jeffrey.poulsen@parsons.com Fax: _____ Cell Phone: 716-432-7685

A7. Person to be contacted in case of emergency, if different than above:

Name: _____ Day Phone: _____ Cell Phone: _____

A8. Confidentiality:

Please indicate those sections of this questionnaire that you wish to remain confidential and your basis for requesting confidentiality.

I have personally examined and am familiar with the information submitted in this document and attachments. Based upon my inquiry of those individuals immediately responsible for obtaining the information reported herein, I believe that the submitted information is true, accurate and complete. I am aware there are significant penalties for submitting false information.

Date Signature of Official (Seal if Applicable)

PART B - BUSINESS DESCRIPTION

PURPOSE - The business description is primarily used to determine the substance which may enter into the wastewater discharge from the business activity.

B1. **Brief Description:** Requesting to discharge collected rain water from within the bermed area of three out-of-service ASTs to maintain necessary free board. Tanks contain solidified tar-like material. Water within the berms may be in contact with the tar. ~~Attached analytical data represents quality of water proposed to be discharged.~~ Discharge would be batch and would generally correlate to times of precipitation. Flow rates would not exceed 100 GPM.

B2. Business Activity: Standard Industrial Classification (SIC) Codes for Principal Products or Services:

<u>Activity</u>	<u>SIC Code (4 Digits)</u>	<u>Production (Monthly Avg.)*</u>
NA		

B3. Is there an Oil/Water Separator installed at your place of business? Yes _____ No X

If yes, please provide the following information: Holding capacity : _____

How often is it cleaned? _____

If yes, are the records of cleaning kept at your place of business? Yes _____ No _____

B4. Is there a grease interceptor (trap) installed at your place of business ? Yes _____ No X

If yes, please provide the following information: Holding capacity : _____

How often is it cleaned? _____

If yes, are the records of cleaning kept at your place of business? Yes _____ No _____

B5. Is there a garbage grinder (disposal) installed at your place of business? Yes _____ No X

B6. On average, how many gallons of fresh water are you billed for each month? Gallons NA

B7. Average number of employees per shift: 1st NA 2nd _____ 3rd _____

Shift start times: 1st _____ 2nd _____ 3rd _____

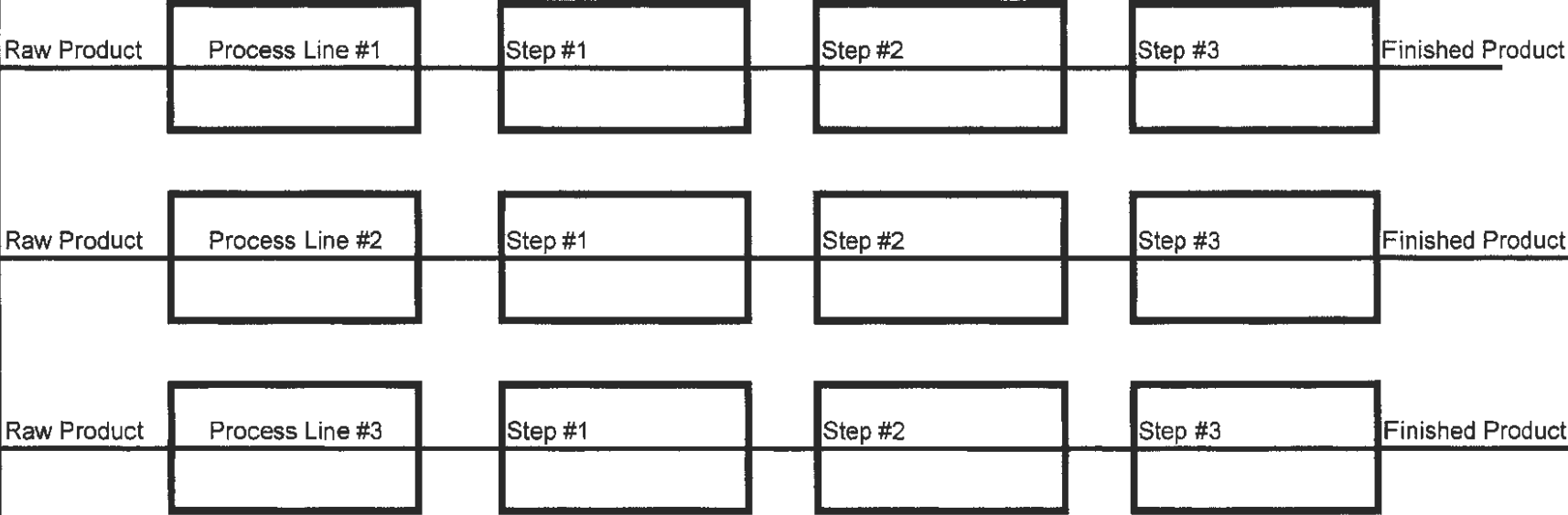
Shift end times: 1st _____ 2nd _____ 3rd _____

Shifts normally worked each day:

	<u>Sun.</u>	<u>Mon.</u>	<u>Tues.</u>	<u>Wed.</u>	<u>Thurs.</u>	<u>Fri.</u>	<u>Sat.</u>
1 st	_____	_____	_____	_____	_____	_____	_____
2 nd	_____	_____	_____	_____	_____	_____	_____
3 rd	_____	_____	_____	_____	_____	_____	_____

Is there a scheduled shutdown? Yes _____ No _____ If yes, explain when? _____

Process Description Diagram For Permit Application
Company _____



USE ADDITIONAL DIAGRAMS IF NECESSARY

PART C - WATER SOURCE AND USE

PURPOSE -The Water Source and Use Information will enable us to determine the volumes and sources of wastewater discharged to the Town of Tonawanda sewer.

WATER/WASTEWATER DATA (PLEASE NOTE: YOU MAY WANT TO COMPLETE PART (F) FIRST TO ASSIST YOU IN COMPLETING THE FOLLOWING.)

C1.	Water Sources	Average Volume <u>(Gallons per Day)</u>	Peak flow? Estimated Duration <u>(Gallons per Minute/Time)</u>
	Municipal System	_____	_____
	Recycled	_____	_____
	Private Wells	_____	_____
	Other (Specify) _____	_____	_____
	Water Account No.(s)	_____	_____

C2.	Water Usage	Average Volume <u>(Gallons per Day)</u>	Peak Flow/Estimated Duration <u>(Gallons per Minute/Time)</u>
	Cooling Water	_____	_____
	Boiler Makeup	_____	_____
	Process Water	_____	_____
	Sanitary Purposes	_____	_____
	Other (Specify) _____	_____	_____

C3.	Waste Water Discharge	Average Discharge <u>(Gallons per Day)</u>	Peak Discharge/Estimated Duration <u>(Gallons per Minute/time)</u>
	Municipal Sewer/Sanitary		
	- Process	_____	_____
	- Sanitary	_____	_____
	- Cooling	_____	_____
	Non-Sewered Discharges		
	- Natural Receiving Water _____		
	- Storm Drain _____		
	- Waste Hauler _____		
	- Evaporation _____		
	- Contained in Product _____		
	- Recycled _____		
	- Other (Specify) _____		

C4. Is your facility permitted to discharge Liquid wastes under a State (S.P.D.E.S.) Permit?

Yes _____ No X _____ Permit No. _____

If the answer to the above is yes, then in accordance with the Town Sewer Use Ordinance, a current copy of this Permit must be kept on file at the Pretreatment Coordinators office.

Does your facility have a wastewater discharge from any air pollution control equipment?

Yes _____ No X _____

C5. If the answer to the above is yes please describe process and nature of discharge:

E6. Description of Disposal Method:

a. Disposal Site

b. Hazardous Waste Hauler - Please give name and address

c. Reclaimed or Reused - Please describe process, if on-site, or give name and address of reclaimer

d. Other - Please describe

E7. Do you store any Hazardous wastes on-site? Yes No

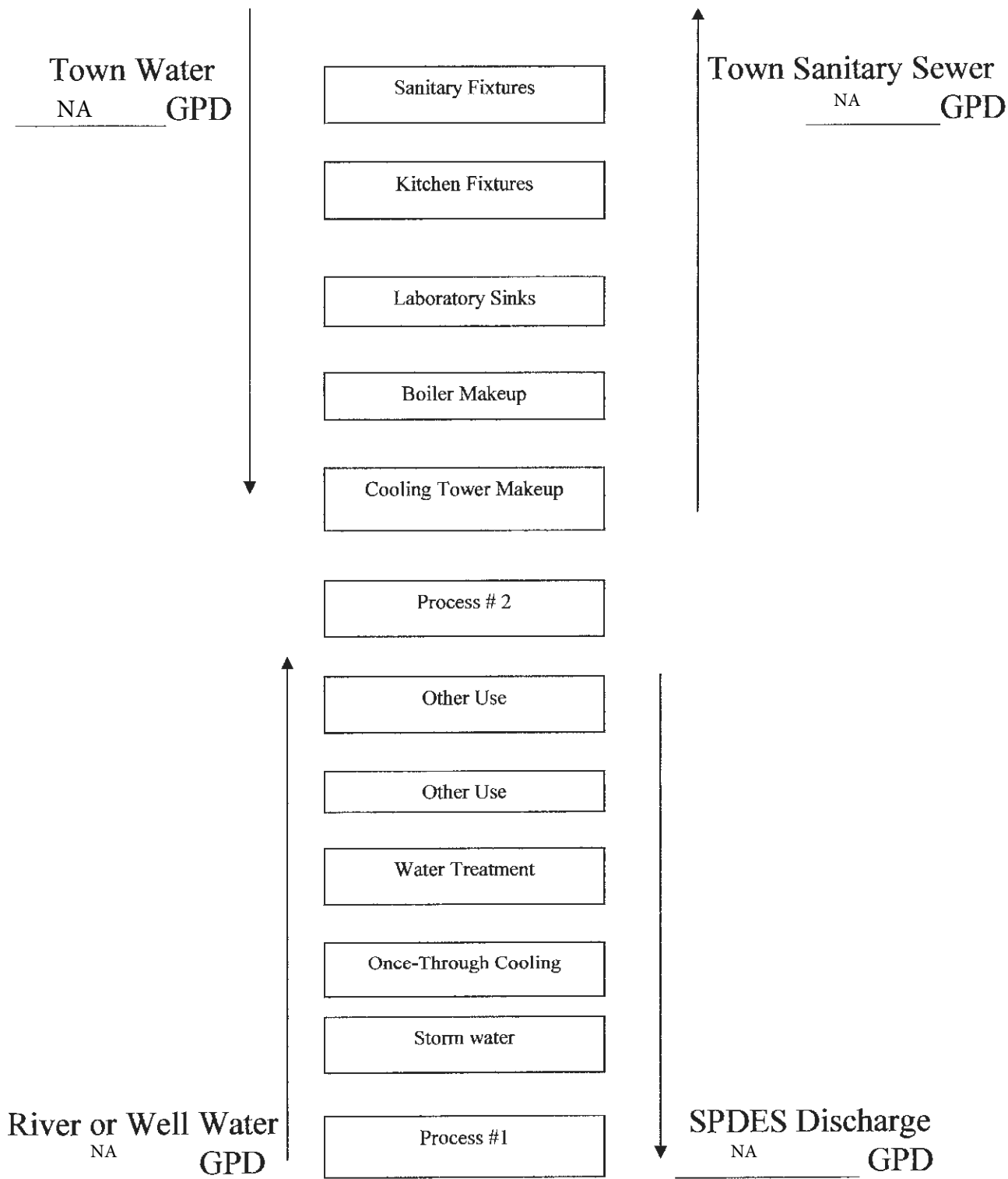
E8. Have you filed an EPA form 8700-12 (Notification of Hazardous Waste Activity)? Yes No
If yes, please attach.

E9. What is your Hazardous Waste Number? NA

E10. Do you discharge into the Town of Tonawanda Wastewater Plant a waste identified by 40 cfr 261 a hazardous waste?
Yes No

E11. If your facility is discharging a hazardous waste, have you properly notified the Town of Tonawanda Wastewater Plant?
Yes No

PART - F WATER BALANCE DIAGRAM



INSTRUCTIONS FOR COMPLETING WATER BALANCE DIAGRAM

This diagram is for use in reconciling the amounts of Town water purchased with the amount of water discharged to the sewer system. Please complete the following:

1. Look up the amount of water purchased per month from the Town. Calculate the average monthly usage and divide it by the average number of production days per month. Enter the average daily Town water purchase at the top left of the diagram. All amounts should be inserted in US gallons per day.
2. Draw lines connecting the city water line to those areas within your facility where city water is used. Enter the approximate gallons per day used in each area. For sanitary use, a number of 20-25 gallons per day per employee is considered reasonable. For kitchen or cafeteria use, another 5-10 gallon per day would be reasonable.
3. Draw lines connecting the right side of each box using town water to show the wastewater discharged to the Town sewer. Unless water is lost to evaporation etc., the amount into the box would equal the amount out of the box. For boiler and cooling tower use, subtract the amount lost to evaporation, and enter the difference.
4. At the bottom left, enter the average daily amount of river or well water used in your facility.
5. Draw lines connecting the well or river water supply to those uses in your facility where well or river water is used, and enter the average daily amount used in the box
6. Draw lines connecting the right side of each box to either the Town sewer or to the SPDES discharge line to show where the wastewater is routed.
7. For each use, enter the approximate volume discharged to the SPDES outfall. Again, unless there is an evaporative loss, the amount leaving should equal the amount entering each box
8. If you have other uses than those shown, describe that use in the box labeled "Other" and connect the lines as appropriate
9. Enter the peak daily amount of storm water runoff that is discharged from your facility and enter that value. Route the storm water discharge to the appropriate discharge point.
10. In the lower right hand corner, insert the total daily flow discharged through your SPDES outfall.

Please call Paul Morrow at 716- 693-4900 if you have questions. The Questionnaire and Diagram may be faxed to my office at 716- 743-8911.

Table 1
Substances of Concern

Class A – HALOGENATED	C12. Keithane	CLASS G – MISCELLANEOUS
Hydrocarbons	C13. Diazinon	
	C15. Carbaryl	G01. Asbestos
A01. Methyl Chloride	C16. Silvex	G02. Acrolein
A02. Methylene Chloride	C17. Dithiocarbamates	G03. Acrylonitrile
A03. Chloroform	C18. Maneb	G04. Isophorone
A04. Carbon Tetrachloride	C19. Dioxathion	G05. Nitrosamines
A05. Freon/Genatron	C20. Tandex/Karbutilate	G06. Ethyleneimine
A06. Other Halomethanes	C21. Carbofurans	G07. Propylacetone
A07. 1,1,1-Trichloroethane	C22. Pentac	G08. Nitrosodimethylamine
A08. Other Haloethanes	C23. Folpet	G09. Dimethyl Hydrazine
A09. Vinyl Fluoride	C24. Dichlone	G10. Maleic Anhydride
A10. Vinyl Chloride	C25. Rotenone	G11. Methyl Isocyanate
A11. Dichloroethylene	C26. Lindane/Isotox	G12. Epoxides
A12. Trichloroethylene	C27. Simazine	G13. Nitrofurans
A13. Tetrachloroethylene	C28. Methoprene	G14. Cyanide
A14. Chlorinated Propane	C99. Pesticides not specified above	
A15. Chlorinated Propene		CLASS M – METALS AND THEIR COMPOUNDS
A16. Hexachlorobutadiene	CLASS D – AROMATIC HYDROCARBONS	
A17. Hexachlorocyclopentadiene		M01. Antimony
A18. Chlorinated Benzene	D01. Benzene	M02. Arsenic
A19. Chlorinated Toluene	D02. Toluene	M03. Beryllium
A20. Fluorinated Toluene	D03. Xylene	M04. Cadmium
A21. Polychlorinated Biphenyl (PCB)	D04. Biphenyl	M05. Chromium
A22. Chlorinated Naphthalene	D05. Naphthalene	M06. Copper
A23. Declorene (C ₁₀ CL ₁₃)	D06. Ethylbenzene	M07. Lead
A99. Halogenated Hydrocarbons not Specified above	D07. Styrene	M08. Mercury
	D08. Acenaphthene	M09. Nickel
	D09. Fluranthene	M10. Selenium
CLASS B – Halogenated Organics (other than Hydrocarbons)	D99. Aromatic Hydrocarbons not specified above	M11. Silver
	CLASS E – TARs	M12. Thallium
B01. Phosgene		M13. Zinc
B02. Methyl Chloromethyl Ether	E01. Coal Tar	M14. Boron
B03. Bis-Chloromethyl Ether	E02. Petroleum Tar	M15. Manganese
B04. Other Chloroalkyl Ethers		M18. Titanium
B05. Benzoyl Chloride	CLASS F – SUBSTITUTED AROMATICS	M21. Tungsten
B06. Chlorothymol	(other than hydrocarbons and non-halogenated)	M22. Gold
B08. Chlorinated Cresols or Xylenols		M83. Palladium
B10. Chlorendic Acid	F01. Phenol, Cresol, or Xylenol	M84. Platinum
B11. Dichlorophene or Hexachlorophene	F02. Catechol, Resorcinol, or Hydroquinone	M99. Metals not specified above
B12. Chlorinated Aniline (including Methylene bis (2-chloroaniline))	F03. Nitrophenols	
B13. Dichlorobenzidine	F04. Nitrobenzenes	
B14. Chlorinated Diphenyl Oxide	F05. Nitrotoluenes	
B15. Chlorinated Toluidine	F06. Aniline	
B16. Kepone (C ₁₀ Cl ₁₀ O)	F07. Toluidines	
B17. Dichlorovinyl Sulfonyl Pyridine	F08. Nitroanilines	
B18. Chloropicrin	F09. Nitroanisole	
B20. Trichloro-propylsulfonyl Pyridine	F10. Toluene Dilsocyanate	
B21. Tetracloro-methylsulfonyl Pyridine	F11. Dimethylaminoazobenzene	
B22. Tetrachloro-isophthalonitrile	F12. Benzoic Acid (and Benzoate salts)	
B99. Halogenated Organics not specified above	F13. Phtalic, Isophthalic, Terephthalic Acid	
	F14. Phthalic Anhydride	
	F15. Phthalate Esters	
CLASS C – Pesticides (including herbicides, algicides, biocides, slumicides and mildewicides)	F16. Phenoxyacetic Acid	
	F17. Phenylphenols	
	F18. Nitrobiphenyls	
C01. Aldrin/Dieldrin	F19. Aminobiphenyls (including Benzidine)	
C02. Chlordane and metabolites	F20. Diphenylhydrazine	
C03. DDT and metabolites	F21. Naphthylamines	
C04. Endosulfan/Thiodan and metabolites	F22. Carbazole	
C05. Endrin and metabolites	F23. Acetylaminofluorene	
C06. Heptachlor and metabolites	F24. Dyes and organic pigments	
C07. Malathion	F25. Pyridine	
C08. Methoxychlor	F99. Substituted aromatics not specified above	
C09. Parathion		
C10. Toxaphene		
C11. Sevin		

APPENDIX H

CONTRACTOR HEALTH AND SAFETY PLAN

Health and Safety Plan

Honeywell

TONAWANDA COKE
Tank Demolition

TONAWANDA, NY

Submitted to:

PARSONS
301 Plainfield Road
Syracuse, NY 13221

Submitted by:



333 Ganson Street
Buffalo, NY 14203

August 2019

V2



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Authorization Signatures

This site Health and Safety Plan (HASP) has been reviewed and approved by the individuals below. The undersigned certify that to the best of their knowledge this HASP meets the safety requirements as defined by the project specifications and all known applicable governing regulatory requirements.

John Yensan, President
OSC

Date

Alen Trpevski, Project Manager
OSC

Date

Matt Reardon, Superintendent
OSC

Date

Donald Dustin CIH, CSP, Director HS&E
OSC

Date

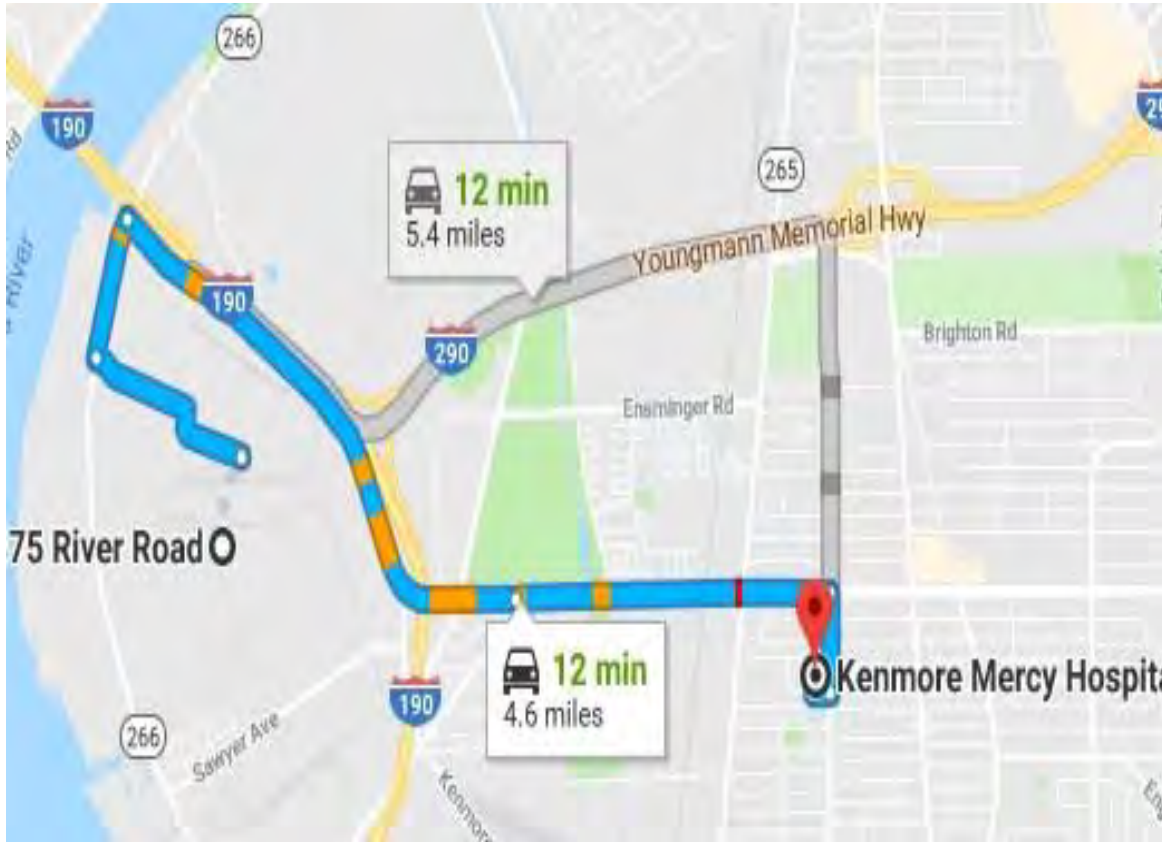


Emergency Contact List

Tonawanda Coke Tank Demo		
3875 River Road Tonawanda, New York 14150		
AGENCY	Contact	Phone Number
PARSONS Owner's Representative	Tom Abrams Project Manager	315-263-5109
OSC	Matt Reardon Superintendent	716-570-0717
	Alen Trpevski Project Manager	716-818-3390
	John Yensan President	716-583-4400
	Donald Dustin Director HS&E	716-560-7542
Kenmore Mercy Hospital	Medical Emergency	911 (direct) 716-447-6100
Fire, Police, Ambulance	Dispatch	911
Utilities	Water Gas Electric	911

AGENCY	Contact	Phone Number
Site Emergency	Police, Fire Dept., Ambulance	911
Fire Department		911
Police Department & Security		911
Ambulance		911
Poison Control	American Association of Poison Controls	1-800-222-1222
US EPA Release Report Number	National Response Center	1-800-424-8802
HAZARDOUS MATERIALS	CHEMTREC	1-800-424-9300

**LOCAL MEDICAL: KENMORE MERCY HOSPITAL, 2950 ELMWOOD AVE 14127
(DIAL 911 FOR EMERGENCY) (716) 447-6100**



4217

- Turn right onto River Road
- Turn right onto Grand Island Blvd (about 2 miles)
- Merge onto Sheridan Dr.
- Go about 1.5 miles and turn right onto Elmwood Ave.
- Make a sharp right and hospital is on left

OSC Medical Consultant:

Medcor, Inc.
4805 W. Prime Parkway
McHenry, Illinois 60050
800-775-5866

Non-medical Emergency:

Company Health
1173 Sheridan Drive
Tonawanda, NY 14150
(716) 875-5495



INTRODUCTION

SITE/PROJECT BACKGROUND AND SCOPE

Honeywell International has contracted OSC, Inc. for the removal of three above ground storage tanks and the remaining contents (tar and water) at Site 108 of the Tonawanda Coke Corporation (TCC) property in Tonawanda, NY. Parsons is providing construction management for the project.

The work includes, but is not limited, to the following:

- Mobilization
- Installation of erosion and sediment control
- Installation of site temporary features (waste decon pads, equipment decon pads, temporary access roads, and temporary utilities)
- Asbestos removal on fittings and debris
- Stabilization and removal of tank contents
- Load out of stabilized tar into waste shipping containers
- Cleaning of remaining tank contents
- Demolition of tanks
- removal of “surface tar” within the berm areas
- load out of covered soil piles
- Restoration and seed stabilization
- Demobilization

APPLICABILITY AND REFERENCES

OSC has developed the following site Health and Safety Plan (HASP) in accordance with the project contract requirements and all Federal, State and Local regulations. All operations and equipment used in conjunction with this contract shall, at a minimum, comply with the following:

- Project Contract Specifications
- Project Health and Safety Plan (This HASP)
- OSC Technical Work Plan
- OSHA 29 CFR 1910: Occupational Safety and Health Standards – General Industry
- OSHA 29 CFR 1926: Safety and Health Regulations for Construction
- EPA 9285.1-03: Office of Emergency and Remedial Response – Standard Operating Safety Guides
- OSC Corporate Health, Safety and Environmental Program Manual
- Orientation and Training (Supervision, Laborers, Operators & Visitors)
- Activity Hazard Analysis (AHA)
- Standard Operating Procedures; Emergency Response, Reporting, Accident Investigation, Inspections, Audits, Work Procedures, Hazard Communication, Hot Work, Confined Space,



Fire Prevention, Control of Hazardous Energy (Lockout, Tagout, Tryout), Excavations, Controlled Work Zones including decontamination, Ladders, Steps, Stairs, Scaffolding Contractor/Vendor Safety Checklist, Heavy Equipment Operation, Forklift Operation, Powered Aerial Platforms

- Substance Abuse Policy
- Receive site orientation training regarding the project requirements contained in this HASP. Site orientation will be conducted by OSC's Health and Safety Officer (HSO) named in Section 2.0 of this HASP.
- Acknowledge in writing, on page 4 of this HASP titled Conformance Signatures that they have received the site-specific orientation and; therefore, have been trained in and understand the contents of this HASP and the general site safety requirements.

The health and safety protocol that is established in this HASP is based upon the known site conditions and or conditions anticipated to be present from established site data. This HASP is a living document that shall be updated and or revised over the term of this contract as warranted by change in site conditions, scope of work, methods and improvement measures. A copy of this HASP shall be maintained at the project site.

DEFINITIONS

The Owner: Honeywell International

The Engineer: PARSONS (Owner Representative)

The Contractor: OSC – Company retained by owner to conduct the Project.

The Project: Tonawanda Coke Tank Demolition, 3875 River Road, Tonawanda, NY

The Project Site: The area designated as the Contractor work area.

Contractor Work Area: An area of the Project site which includes the support zones, access roads, staging areas, contamination reduction zones and exclusion zones.

Active Full Time Project Personnel: All personnel who are permanently assigned to the project and required to perform work. Does not include visitors or vendors visiting the site temporarily who are required to be escorted always by an authorized and trained project employee.

Qualified Person: A person with a recognized degree, or professional certificate, along with extensive knowledge and experience in the subject field who can do design, analysis, evaluation and specifications.



Competent Person: A person who can identify existing any predictable hazards in their surroundings/working conditions which are unsanitary, hazardous or dangerous to employees, and who has both knowledge and authorization to take prompt corrective measures to eliminate them.

Authorized Personnel: A person that is approved or assigned by OSC to perform a specific type of duty/duties, or to be at a specific location(s) at the project site.

Stop Work Authority: HS&E personnel, qualified and competent persons, owner representatives and *all project employees* shall have the authority to stop work in any situation deemed unsafe to those working on the project site, or in any situation that poses a risk to the environment. Work will remain stopped until the involved parties correct their impact or conditions as per the requirements of this HASP.

Contamination Reduction Zone (CRZ) (*not anticipated for this project*): The CRZ is the transitional area between the identified contaminated and clean areas. The CRZ will be provided for the transfer of equipment and materials to and from the exclusion zone; the decontamination of personnel and equipment existing in the exclusion zone; and the physical segregation of the clean and contaminated work areas.

Exclusion Zone (EZ) (*not anticipated for this project*): The exclusion zone encompasses the areas of contaminants of concern (COCs); as well as any areas being utilized for the temporary storage of salvaged materials [ex. valves] and spoils to be discarded as waste. The purpose of the EZ is to limit access to only qualified and necessary personnel and manage the potential spread of COCs.



SITE VISITOR REQUIREMENTS

A safe location, where all visitors can observe site activities of interest will be identified by the HSO. Anyone visiting the site will receive site-specific instructions from the HSO. All visitors shall be escorted by site trained personnel after signing in and completing orientation. Visitor training will include, at a minimum;

- OSC Project Safety Orientation and Honeywell general site orientation
- Project Hazard Communication system
- Activity Hazard Analysis (AHA) review (as needed)
- Work Permit Process (as needed)
- Safety Meetings and Inspections
- PPE requirements;
- Decontamination procedures (as needed);
- Emergency procedures, and
- Any other site-specific information that the HSO deems necessary.

Any visitor wishing to enter an established contamination reduction zone (CRZ) or exclusion zone (*not anticipated for this project*) will be required to provide the HSO with documentation of medical monitoring and training equivalent to the requirements of this HASP for that area. Only authorized visitors with written proof that they have been medically certified and trained in accordance with project requirements will be permitted to enter the CRZ and/or exclusion area.

The only exception to this rule is for emergency personnel whom may enter the work area without fully complying with the requirements of this subsection. Emergency crews will be quickly briefed as to site conditions and hazards by the HSO.



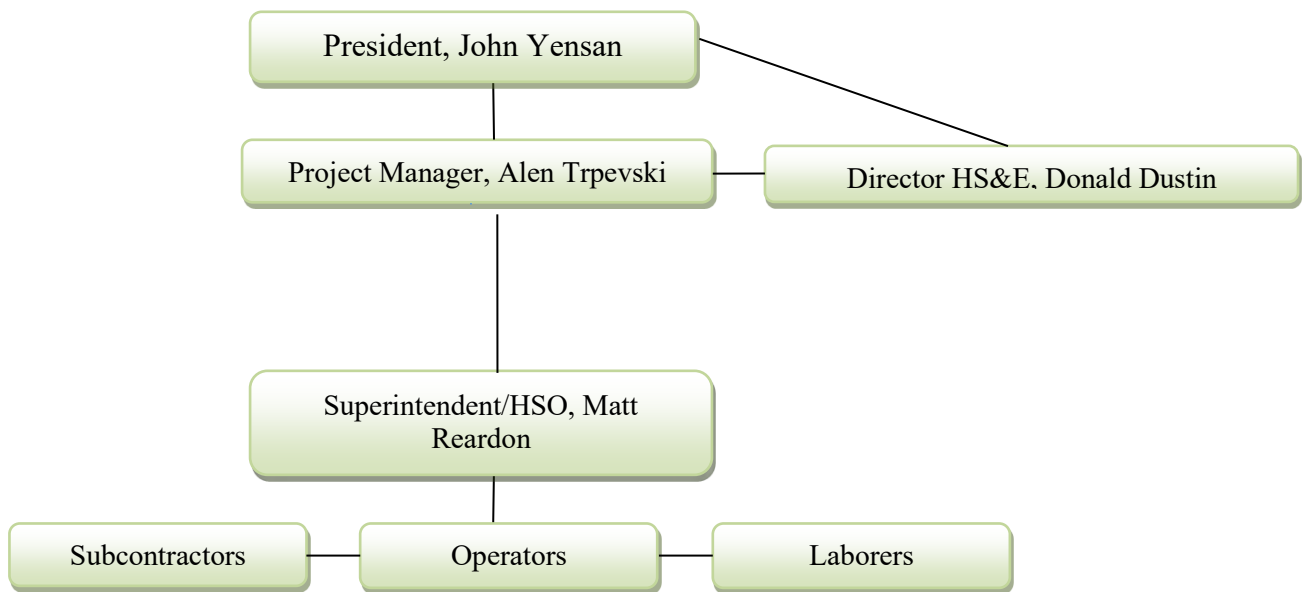
HEALTH and SAFETY ORGANIZATION

The following **OSC** management personnel will be assigned to this Project:

- President – John Yensan
- Project Manager – Alen Trpevski
- Superintendent – Matt Reardon
- On Site Health & Safety Officer – Matt Reardon
- Director HS&E – Donald Dustin

In addition to the above listed management, **OSC** will provide the appropriate number of operators and laborers; as well as the required subcontractors for this project.

ORGANIZATION CHART





PERSONNEL RESPONSIBILITIES

PROJECT MANAGERS AND SUPERINTENDENTS

The Project Manager will be responsible for the overall direction and completion of this contract. The Project Manager reports to the President and will be responsible for managing and coordinating all project related activities; as well as serving as OSC's primary contact with the Owner and/or Owner's Representative. The Site Superintendent will be responsible for overseeing contractor and subcontractor operations in the field. The Site Superintendent will report directly to the Project Manager.

Project Managers and Superintendents will be responsible for the following:

- Assure daily compliance with the Corporate HS&E Manual and this HASP during the project.
- Implement the procedures and guidelines outlined in this HASP throughout the project.
- Perform incident investigations. The Site Superintendent will notify PARSONS site management and the OSC Director HS&E immediately. Documentation will be maintained on OSC's Incident Report (see attachment I) as well as draft the Honeywell Contractor Near Miss/Incident Investigation Report. The Incident Report will be submitted to Honeywell by PARSONS. The HSO will conduct the incident investigation with support from the Director.
- Perform and support site safety audits and address all deficiencies.
- Provide incentive and motivation for safe work practices; as well as discipline for unsafe work practices.
- Ensuring a copy of this HASP is onsite always.
- Conduct initial site orientation meetings.

HEALTH AND SAFETY OFFICER (HSO)

The HSO will handle health and safety management on the project and will report to the Director HS&E. Specific duties of the HSO include:

- Overall implementation, enforcement and maintenance of this HASP.
- Act as a point of contact for all project site health and safety concerns.
- Conduct initial training of the contents of this HASP; as well periodic training for when rules/regulations change, new equipment or procedures are introduced, additional skills are needed, and new hazards are presented. Report observations in the daily safety meetings and update AHAs and training accordingly.
- Conduct daily meetings regarding health and safety.
- Supervising any additional HS&E requirements that are needed for this project.

The HSO will monitor the jobsite health and safety via inspection at the start and completion of each day's work; as well as monitoring the jobsite for this purpose throughout the day. The initial daily inspection will be recorded on OSC's inspection and audit form (Attachment I). Corrective actions and end-of-the-day inspection results will be recorded in the HSO's project safety log book.



Any deficiencies will be promptly corrected. All corrective and improvement measures will be reviewed with project personnel at the morning daily safety briefing. Intentional violations of the site HS&E regulations will be grounds for disciplinary action, which could include temporary suspension or termination of personnel and/or expulsion of vendor and/or subcontractor personnel from the site.

HS&E TECHNICIANS (not anticipated for this project)

The HSO will assign qualified technicians (air monitoring, material sampling, equipment specific and job design professionals) to each work crew or task in hazardous areas as warranted.

OSC CORPORATE MEDICAL CONSULTANT AND NON-EMERGENCIES

The Medical Consultant will be available to provide call-in emergency medical consulting to OSC personnel on an around-the-clock basis. Medical emergencies occurring during normal work hours will be provided by the local hospital (see above). Non-emergency medical support and OSC's Medical Consultant are:

Medcor, Inc.
4805 W. Prime Parkway
McHenry, Illinois 60050
800-775-5866

Company Health
1173 Sheridan Drive
Tonawanda, NY 14150
716-875-5495

SUBCONTRACTORS

All subcontractors shall be prequalified according to the OSC subcontractor/vendor prequalification requirements including Certificates of Insurance that meet or exceed the project contract requirements (See Honeywell/PARSONS Project Subcontractor Insurance Requirements Under Separate Cover).

All subcontractor employees shall be required to attend a project safety orientation prior to starting work on site (See Training and Orientation Requirements of this HASP). Subcontractors are responsible for health and safety as it pertains to their operations at the project site and shall provide the required Honeywell/OSC HS&E supporting documentation. Documented proof of training shall be provided for all subcontractor employees. All subcontractors are responsible for providing their employees with the proper site-specific PPE required to perform their work as well as ensure that all tools and equipment are properly inspected and maintained. Subcontractors are responsible for ensuring that their employees conform to all HS&E project requirements and applicable government regulations.



TRAINING and ORIENTATION

Personnel, including subcontractors, shall be provided with the training required to comply with this HASP. Training documentation (training certificates, attendance rosters) will be filed and maintained onsite by the HSO and will be made available for inspection upon request. Training documentation will be kept in an organized manner for each individual worker.

Full time active project personnel working onsite must have received the following;

- Required safety training as defined by OSHA CFR 1926.21 for construction
- OSHA 1910.120, Hazwoper (employees potentially exposed to hazardous chemicals)
- Medical clearance - fit for work, (includes medical surveillance for specific occupations and probable contaminants) negative drug screen, clearance for respirator use, fit test and training for the type of respirator required.

Supervisor Training – in addition to the above all designated supervisors shall have as a minimum received training that covers competent person training for the specific operation they are responsible for (i.e. excavation trenching and shoring, confined space, rigging, hot work, etc.), first aid and CPR, record keeping, incident investigation, employee substance abuse i.e., reasonable suspicion), HS&E documentation requirements.

SITE SPECIFIC TRAINING

Documentation of training, provided by a qualified safety professional, will be maintained as necessary for the following topics;

- PARSONS/OSC Site Specific Orientation
- Activity Hazard Analysis & Safe work procedures (AHA Review)
- Project Hazard Awareness Training
- PPE requirements & possible decontamination procedures
- Heat/Cold Stress
- Fall Protection (not anticipated for this project but will be made available as needed)
- Heavy Equipment Operation (Authorized, Unauthorized)
- Powered Industrial Fork Truck Operation (Authorized, Unauthorized) as needed
- Control of Hazardous Energy Lockout/Tagout and Air Gapping Requirements (1 ft visible air gap) (*not anticipated for this project*).
- Incident reporting
- Emergency response & available services (medical, fire, inclement weather, tornado, bomb threat, signals and procedures)
- Hoisting and Rigging (as needed)
- Respirator use, maintenance, inspection, medical clearance and fit test (as applicable).
- Excavation hazards and protective measures
- Confined Space (will be made available as needed)



- Dust, Erosion and sediment control
- Noise control measures
- OSC's STAC program
- Authority to stop work (all employees) and the buddy system "No One Works Alone".

JOB SPECIFIC SPECIALIZED TRAINING & MEDICAL CLEARANCE

OSC employees will all participate in the company's annual medical surveillance program which evaluates "fit for duty" condition. These evaluations will be provided by a licensed health care professional.

Employees that may be exposed to elevated levels of contaminants (to be determined) or that wish to use tight-fitting respirators on a voluntary basis will require a current medical evaluation and be respiratory qualified in compliance with OSHA 1910.134.

MEETINGS

Attendance at all HS&E meetings will be documented and filed onsite.

- Daily Morning Safety Brief prior to the start of work "Tool Box Talk".
- Prior to the beginning of each work task, all involved workers shall be required to attend a task-specific HS&E meeting to review task-specific health and safety requirements pertinent to the days tasks (AHA review - job hazards and protective measures).

Weekly HS&E Meetings

All onsite Supervisory personnel shall be required to attend a weekly HS&E meeting, conducted by the owner representative, to review project and/or task specific procedures. Topics to be discussed at these weekly meetings include, but are not limited to;

- AHA – review for all definable features of work, hazards and controls
- STAC - employee work observations and recommendations
- Audit/Inspection findings, and recommendations for improvement
- Necessary training requirements and site work rules;
- Change in work practices and/or work conditions, incident reports;
- Precautions and work practices related to scheduled site activities;
- New or modified site wide procedures or requirements;
- Discussion of potential hazards or hazardous operations;
- Procedures on restricted areas;
- Equipment rules and requirements;
- Restrictions on the handling of materials;
- PPE requirements;



- Delegation of responsibility (emergency backup personnel, competent persons, etc.);
- Review of emergency response for anticipated situations (medical, fire, inclement weather, tornado, bomb threat, environmental release/spill) and communication methods (alarms, radio, voice, and hand signals).

HS&E Audits

The OSC Director, HSE will make project site visits to assure compliance with this HASP and provide assistance as needed. Site audits will be made minimally on a quarterly basis using the company's audit criteria (see Appendix I Forms). An audit finding report will be submitted to the project manager and superintendent within 3 days of the site visit. Highlighted deficiencies must be corrected immediately if not done so during the site visit.

SUBSTANCE ABUSE SCREENING

OSC maintains a drug free workplace. The company prohibits the use, manufacture, sale, possession, or transfer of illegal drugs, alcohol, and controlled substances on project sites.

OSC requires pre-employment, reasonable suspicion and random substance abuse testing (random testing for project-assigned personnel only as required by contractual agreement). Post injury screening may also be conducted in conjunction with reasonable suspicion. Employees as a minimum will undergo a NIDA 10 panel drug screen for illegal drugs 2 weeks before working on the project. Only substance abuse test results that are within fourteen days from site admittance shall be considered valid. Drug and alcohol screens shall be managed by OSC using laboratories certified by HHS under the National Laboratory Certification Program (NLCP).

Reasonable suspicion testing may be triggered by direct observations of employee behavior or drug-related paraphernalia. Site personnel who have been observed using alcohol or controlled substances on site or during breaks at off-site locations after which they will return to work will be requested to take an alcohol or drug test. Reasonable suspicion includes possession (on person or in vehicles) of alcohol or controlled substances on site as well as paraphernalia that suggest drug use. Site personnel who exhibit signs, symptoms, or behaviors of drug or alcohol use as interpreted by a reasonable person will also be requested to take a drug and/or alcohol test.

NOTE - Prescription drugs taken without an authorized prescription for use is considered an illegal drug. Also, in case of any injury, incident, or emergency, employees may be required to undergo a 10-panel screen for illegal drugs, alcohol (breath), or prescribed medication. Submission to substance abuse testing is a condition of employment. Failure or refusal to submit to substance abuse testing is treated the same as a positive result. All reports will be maintained at the main office. Any positive results will be referred to OSC Senior Management and PARSONS for further action.



PROJECT OVERVIEW AND TASK RISK ANALYSIS

TASK/RISK ANALYSIS

An Activity Hazard Analysis (AHA) shall be developed for significant features of work which break jobs down into individual tasks defining the potential hazard of that task and the proper protective and control measures that shall be taken to minimize the hazard. AHA's shall be submitted with any required daily work permit to the PARSONS representative for their review. AHA's shall be modified as warranted by safe work observations, audit and incident investigation. Assessment of the work hazards associated with the scope of work for this project is provided in the Table 1.0 below. PPE requirements for all work shall be primarily in level D; ANSI approved hard hat, safety glasses, hearing protection with elevated noise exposures (i.e., working with power tools or near sources of loud noises), abrasion resistant gloves, safety toed boots or safety toed rubber boots (dependent on hazard exposure), high visibility traffic vest or equivalent high visibility clothing, and/or disposable coveralls (modified D). Specific information relating to the potential chemical, physical, biological and radiological hazards is provided in Table 1.1.

TABLE 1.0 OVERALL JOB HAZARD EXPOSURE (See also attachment II (AHA's))	
	Potential Exposure
Mobilization and temporary facilities and controls; office/equipment trailer setup, establishment of work zones: hazard warning signs, OSC designated work area signage including barricades and area delineation, address safe work surface needs, add lighting, traffic controls, dust, fire and erosion controls.	Low
Installation of erosion and sediment control	Moderate
Installation of site temporary features (waste and equipment decon pads)	Moderate
Asbestos removal on fittings and debris	Moderate/High
Stabilization and removal of tank contents	Moderate/High
Load out of stabilized tar into waste shipping containers	Moderate/High
Cleaning of remaining tank contents	Moderate/High
Demolition of tanks	Moderate
Removal of "surface tar" within the berm areas	Moderate/High
Load out of covered soil piles	Low
Restoration and seed stabilization	Low
Demobilization	Low

Low: Non-intrusive work – Minimal hazard/chance of exposure. Slight: Non-intrusive work / Possible HS&E hazards with tools. – Little chance of exposure. Moderate: Non-intrusive work / Possible HS&E hazards with powered tools, heavy equipment and/or working near or in water – Little chance of exposure to contaminants. Moderate/High: Intrusive work / Possible HS&E hazards with equipment – Exposure to contaminants is possible. High: Intrusive work / Possible HS&E hazards with equipment – Exposure to contaminants is probable.



CONTAMINATE/CHEMICAL HAZARDS

Existing Site Hazards

Based on information provided in the bid documents and nature of the project (coal tar tank emptying and demolition) there are several possible contaminants with zero to minimal likely exposure potential. Asbestos is known to be contained in pipe/fitting insulation and will be removed by a competent subcontractor.

Although several coal tar constituent chemicals of concern are volatile, the product has been standing open in the tanks for an extended period time. Much of the volatile and semi-volatile fraction is expected to have been released to the atmosphere minimizing the air pathway (inhalation).

Of the remaining constituent chemicals of concern, the likely exposures are skin absorption/contact and ingestion. These exposure pathways will be controlled using PPE (barrier) and proper hygiene (decontamination).

Analysis of the tank coal tar residual does not indicate it to be highly ignitable. Furthermore, there is a layer of water (rain?) covering the coal tar which further reduces the likelihood of ignition.

The following table, taken from the Parsons' Tonawanda Coke Site 108, Project Safety, Health, and Environmental Plan, lists the coal tar constituents of concern.



Chemical of Concern	Soil or Coal Tar (mg/kg)	Monitoring Equipment	Action Levels	Routes of Exposure⁽⁷⁾
<i>Benzene</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>Solid Sorbent Tube Or PID with 10.6 eV bulb</i>	OSHA: PEL = 1 ppm ACGIH: TLV/TWA = 10 ppm NIOSH: IDLH = 3000 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact
<i>Toluene</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>Solid Sorbent Tube Or PID with 10.6 eV bulb</i>	OSHA: PEL = 200 ppm C=300 ACGIH: TLV/TWA = 20 ppm NIOSH: IDLH = 800 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact
<i>Ethylbenzene</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>Solid Sorbent Tube Or PID with 11.7eV bulb</i>	OSHA: PEL = 100 ppm ACGIH: TLV/TWA = 100 ppm NIOSH: IDLH = 800 ppm	inhalation, ingestion, skin and/or eye contact
<i>Xylenes</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>Solid Sorbent Tube Or PID with 10.6 eV bulb</i>	OSHA: PEL = 100 ppm ACGIH: TLV/TWA = 100 ppm NIOSH: IDLH = 900 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact
<i>Methylene Chloride</i>	<i>0-500 in soil Component of waste product in tank</i>	<i>PID with 11.7eV bulb</i>	OSHA: PEL = 25 ppm ACGIH: TLV/TWA = 50 ppm NIOSH: IDLH = 5,000 ppm TLV-STEL = 125 ppm	inhalation, skin absorption, ingestion, skin and/or eye contact



1-2 Dichlorethene (and isomers)	0-500 in soil Component of waste product in tank	PID with 11.7eV bulb	OSHA: PEL = 200 ppm ACGIH: TLV/TWA = 200 ppm NIOSH: IDLH = 1000 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact
2-Methylnapthalene	0-500 in soil Component of waste product in tank	Solid Sorbent Tube Or PID with 11.7eV bulb	OSHA: PEL = 10 ppm ACGIH: TLV/TWA = 0.5 ppm NIOSH: IDLH = NA	Inhalation, ingestion, skin and/or eye contact
Polyaromatic Hydrocarbons (PAHs/petroleum pitch) (covers PAH related analytes listed above)	0-500 in soil Component of waste product in tank	Semi-volatile Sorbent tubes with pre-filter PID with 10.6 eV bulb	OSHA: PEL = 0.2 mg/M3 ACGIH: TLV/TWA = 0.2 Mg/M3 IDLH = 80 mg/M3 (CA)	Inhalation, ingestion, skin and/or eye contact
Dibenzofuran	0-500 in soil Component of waste product in tank	NA – solid	NA	May cause, eye, skin and lung irritation

Chemicals Brought Onsite

The use of chemical products onsite will follow the requirements set forth in OSHA 29 CFR 1910.1200 (OSHA’s Hazard Communication Standard), applicable Federal, State and Local regulations and the project procedure provided in this HASP. The potential hazards associated with these products will be mitigated through site specific training, administrative controls (e.g. labeling and storage) and use of the prescribed PPE.

Safety Data Sheets (SDS) for all chemicals brought onsite, will be available for review in OSC’s field office at the project site. Chemical products shall be labeled which shall include, product name, manufacturers name, hazard warning, identifier and hazard pictogram.

The following table provides exposure guidelines for common hazardous chemicals that may be brought to the site, if required, for use during this project. The HSO will be notified before any new chemicals (chemicals not listed on the below table) are brought onsite.



HAZARD SUMMARY FOR CHEMICALS BROUGHT ONSITE					
Substance	Route of Entry	Exposure Symptoms	Treatment	8 Hour TWA	STEL and IDLH
Diesel Fuel	<ul style="list-style-type: none"> • Skin contact • Eye contact • Inhalation • Ingestion 	<ul style="list-style-type: none"> • Harmful if comes in contact with or is absorbed throughout the skin. • Contact may cause skin and eyes irritation. • Prolonged or repeated exposure may cause liver or blood forming organ damage. • May cause skin irritation or dermatitis. 	<ul style="list-style-type: none"> • <u>Eyes</u>: Irrigate immediately. • <u>Skin</u>: Flush with soap and water. • <u>Inhalation</u>: Remove victim to fresh air and provide respiratory support if needed. • <u>Ingestion</u>: Seek medical attention. 	300 ppm	STEL: 500 ppm
Grease, Oil and Hydraulic Fluids	<ul style="list-style-type: none"> • Skin contact • Eye contact • Inhalation • Ingestion 	<ul style="list-style-type: none"> • May be slightly irritating to skin and eyes. • Inhalation may cause headaches. • Ingestion could result in nausea and vomiting. 	<ul style="list-style-type: none"> • <u>Eyes</u>: Irrigate immediately. • <u>Skin</u>: Flush with soap and water. • <u>Inhalation</u>: Remove victim to fresh air and provide respiratory support if needed. • <u>Ingestion</u>: Seek medical attention. 	N/A	N/A
Gasoline Petroleum Distillates	<ul style="list-style-type: none"> • Skin contact • Eye contact • Inhalation • Ingestion 	<ul style="list-style-type: none"> • Acute: Central nervous system effects. Chemical pneumonitis if aspirated into the lungs. • Chronic: Benzene is a confirmed carcinogen. Long term exposure caused kidney and liver cancer in rats/Chemical. 	<ul style="list-style-type: none"> • <u>Eyes</u>: Irrigate immediately. • <u>Skin</u>: Flush with soap and water. • <u>Inhalation</u>: Remove victim to fresh air and provide respiratory support if needed. • <u>Ingestion</u>: Seek medical attention. 	300ppm	500ppm STEL

GENERAL PHYSICAL HAZARDS AND STANDARD PROTECTIVE MEASURES

(See Attachment I, AHA for more specific detail):

Activity: All general work activities (manual ground laboring, operating equipment, supervising, inspecting).

Potential Hazard: noise, slips, trips and falls, struck by, pinched, falling debris, shock, heat/cold stress

Procedures to Mitigate Hazard: Minimum standard site required PPE (Level D ANSI rated hard hat, eye protection, safety boots, high visibility traffic vest or equivalent clothing, cut/abrasion resistant gloves. Hearing protection (when “you need to raise your voice to hear yourself talk”) is required whenever using powered hand tools, when operating heavy equipment with no enclosed cab or near loud noise sources. Inspect work area for hazards, overhead power lines, obstructions, slip, trip, fall hazards, uneven surfaces, and vermin. Manage work area; flag, mark, delineate and cover, identify with appropriate hazard warning signs. Clearly label open pits, wells and other fall hazards (soft barricade 15 feet back, hard barricade 2 feet back). Practice extreme caution in all work



areas including vegetation covered areas. Watch footing during equipment access/egress and when moving through the work area, walk with purpose, pick feet up and setup down, keep hands out of pockets, use handrails, stay on designated paths, and don't take short cuts through the site. Avoid stepping or standing on uneven or unsteady surfaces. In high heat situations stay well hydrated. Personnel will adhere to the heat and cold stress precautions provided in this HASP. All employees have stop work responsibility and authority for safety concerns.

Activity: *Manual Material Handling*

Potential Hazard: Strain, pinched, struck by, lacerations,

Procedures to Mitigate Hazard: Hands and feet clear of pinch points, standard site required PPE and gloves with hazard exposure (i.e. barrier gloves), Observe the OSC lifting program (50 lbs maximum on this project). Use good body mechanics when lifting, lift objects with your legs and not your back, keep the back straight and object lifted the power zone. Do not twist, pick your feet up and turn. Utilize equipment whenever possible - forklift, drum cart or other appropriate equipment. Seek assistance if it is needed.

Activity: *General traffic from operations (heavy equipment, trucks, pedestrian, etc.)*

Potential Hazard: Struck by, crush, fire, and burn

Procedures to Mitigate Hazard: Standard site required PPE. Traffic barricades and directional signs provide ground spotters/flagman equipment traffic, with high visibility, traffic vests or equivalent clothing. Minimum 35 ft. clearance from heavy equipment operations, leveling, compacting, separating and loading out. Develop and implement a traffic control program when site activities occur adjacent to non-OSC vehicular traffic.

Activity: *Site maintenance, materials storage and house keeping*

Potential Hazard: Slip, trip, fall, fire, burn, chemical hazards, eye, skin, struck by

Procedures to Mitigate Hazard: Personnel will properly store all equipment. Remove all scrap material from the work area and place in designated storage/lay down areas for disposal. Delineate work areas and identify with appropriate Hazard Warning Signs. Handling of materials per products SDS and developed proper storage of all flammable and combustible materials; > 20 feet from ignition sources or protected with ½ hour fire barrier (indoors). Likewise, all flammable/combustible liquid will be segregated from the ignition source >20 ft. Store all hazardous materials in approved containers. Keep all solvent wastes, oily rags and liquids in fire resistant containers. One 20 lb. ABC Extinguisher should be provided in storage areas (within 75 ft. away no closer than 20 ft.).

Activity: *Operation of hand and or power tools*

Potential Hazard: Eye, hand, face, foot injuries, electrocution, noise, fire, burn.

Procedures to Mitigate Hazard: Tool use per Mfg.'s guidelines. Inspect tools before use; verify that guards and safety devices are in place before, during and after operation. Only use a power tool that you have been trained. Use GFCI plugged in at source for all corded tools. Red tag and remove all defective tools from service. Maintain and inspect the tools per the manufacturer's recommendations. All personnel will utilize the proper eye protection and hearing protection.



Activity: *Operating Heavy Equipment* (Excavators, Compactors, Dozers, Skid Steers, Rough Terrain Fork Trucks, Powered Aerial Platforms and Trucks).

Potential Hazard: Struck by, caught between, crushed, rollover, fire, burn

Procedures to Mitigate Hazard: Equipment operation only by trained and authorized operators. Before use, any machinery or mechanized equipment will be inspected by a competent person and certified to be in safe operating condition. OSC will designate competent persons to be responsible for the inspection of machinery and equipment, daily and during use, to ensure its safe operating condition. Any machinery found to be unsafe will be dead lined; its use will be prohibited until the unsafe conditions have been corrected. Inspection of the machine/equipment will be conducted at the beginning of each shift, during which the equipment may be used, to determine that the brakes and operating systems are in proper working condition. All inspections will be documented. Only designated personnel, with appropriate training and authorization shall operate machinery and mechanized equipment. Any observed equipment deficiencies, that will affect their safe operation, will be corrected before continuing operations. A controlled work zone shall be established for demolition, sorting and loading operations. Likewise, a trained ground spotter shall be provided to assure personnel stay clear when an operator's rear view is obstructed. Dust control measures (active water misting during intrusive activities with water hose or equivalent misting equipment). Utilize the appropriate warning signs and backup alarms. All site personnel working near heavy machinery will use reflective clothing (i.e. vests) to alert operator of their whereabouts. See appropriate AHA for details (hoisting, heavy equipment operation, etc.).

Activity: *Excavating and Working in Excavations:*

Potential Hazard: Cave in, collapse, chemical exposure, struck by, entrapment

Procedures to Mitigate Hazard: Per OSHA requirements, provide protective systems of trenches when deeper than 5 feet and entry is necessary. Inspect the excavations/trenches regularly for changing conditions. Ensure that the material from the excavations/trenches is being placed away from the edge, to prevent cave-ins and pit (instability (> 2 feet back). Backfill the excavations as require by the approved contract requirements, to minimize the number of open excavations and control zones.

All excavation work shall be supervised by a competent person who will determine what protective measures are required, what those controls will be and how they will be implemented (testing, monitoring, benching, sloping, shoring, means of egress, dewatering, etc.). The competent person will inspect the excavations and controls to ensure reinforced structures are barricaded or marked, with barricade tape or traffic cones, during active excavations. If an excavation must remain open prior to backfill, those excavations must be fenced or barricaded (> 6 ft. from edge). Compliance with OSHA 29 CFR 1926 Subpart P will be maintained.

Atmosphere monitoring will be conducted prior to entry and during work activities in excavations/trenches.

Activity: *Working around or near utilities* (Utilities hazards overhead and or underground).

Potential Hazard: Stored Energy Hazards (electrical, gas, water, sewer, etc.).

Procedures to Mitigate Hazard: Request utility mark out, notify FPO utility authority a minimum of three days prior to performing any intrusive or demolition activities. Prior to work beginning, ensure that all utility lines are not energized. Stay a minimum of 10-feet away from energized lines.



Activity: *Servicing equipment.*

Potential Hazard: Uncontrolled release of hazardous energy (electrical, mechanical, kinetic, pressure, heat, chemical, any type of stored or potential energy).

Procedures to Mitigate Hazard: The lock-out/tag-out procedure provided in this HASP will be followed when working on machines and equipment in which the unexpected energizing / start-up of the machines or equipment, or release of stored energy could cause injury to employees.

Activity: *Working from elevated heights (> 6 feet) with an open edge to the next lowest.*

Potential Hazard: Fall

Procedures to Mitigate Hazard: Not anticipated for this project however, all work from elevated heights shall be performed as supervised by a competent person. In all cases proper fall protection shall be utilized; personal fall restraint systems. Maintain 100% tie-off.

BIOLOGICAL HAZARDS

Bites and Stings

Animal bites or stings are usually irritants that cause localized swelling, itching and minor pain and can be handled with first aid treatment. The bites of certain snakes, lizards and spider can contain sufficient poison to warrant medical attention. Diseases, that may require medical attention, can be transmitted from some animal bites. Examples are rabies (mainly from dogs, skunks, raccoons and foxes), Lyme disease (transmitted from ticks) and encephalitis (transmitted from mosquitoes).

Personnel with known allergic reactions to bee stings should carry the appropriate medication and must notify the Director HS&E and HSO of his/her condition prior to reporting for work at the site.

Ticks, Chiggers and Lyme disease

Ticks and chiggers may be present in vegetated areas during the spring, summer and fall seasons. Preventative measures include protective clothing that covers the entire body, tucking pant legs into boots or socks and tucking a long-sleeved shirt into pants; head/hair protection; and the use of insect repellent containing DEET on all exposed areas and coveralls. Project personnel should check their bodies thoroughly for ticks and should bathe soon after returning home. Remove any ticks carefully, using a gentle firm, tugging motion with fine tweezers. **Do not kill the tick before it has been removed.** Save the tick (place in zip lock bag for freezing and lab test) and monitor their bites, checking for a rash and any other symptoms for up to eight weeks after the bite. If site employees feel they have been bitten they should notify the HSO immediately.



Snakes

If project personnel encounter a potentially dangerous snake – stop work, remove yourself and other workers from the immediate area and notify the Superintendent. The supervisor will contact an appropriate site representative to request that the hazard be removed. Do not re-enter the work area until you have been cleared by the HSO to do so.

Toxic Plants

Poison Ivy, poison sumac and poison oak may be present during the spring, summer and fall seasons. Avoid contact with these plants. If a project worker has come in contact, the affected area should be washed thoroughly with soap and cool water. Notify the HSO immediately.

Bloodborne Pathogens

29 CFR 1910.1030 requires that all first aid responders who may come in contact with potentially infectious materials be trained and protected from exposure. Furthermore, there is a risk for any site employee to be exposed from discarded needles and/or contaminated sharps.

All employees on this project will;

- Avoid contact with any blood or potentially contaminated object;
- Use caution when picking up or moving objects (stones, brush, debris, etc.);
- Wear leather gloves and not touch suspect objects; and
- Contact the HSO who will contact the PARSONS manager to remove suspect objects.

In addition to the above requirements, the following will apply;

- All personnel will be required to receive bloodborne pathogen awareness training.
- No eating, drinking, smoking, or applying lip balm will be permitted in the designated work, decontamination and first aid areas.
- All first aid kits will be equipped with the proper PPE (i.e. gloves, CPR shields and respirators).
- If a garment (gloves included) is contaminated by blood, or other potentially infectious materials, the garment(s) will be removed as soon as possible.
- After an exposure incident, a confidential medical evaluation and follow-up will be conducted and immediately available to the employee. The HSO will coordinate all medical arrangements.

Radiological Hazards

No radiological hazards are expected during this project.



SITE SECURITY

All onsite personnel and visitors will be required to sign-in and sign-out, at the project support trailer, before entering designated work sites. OSC will maintain, onsite, all records of site access. Visitors will be required to be knowledgeable of and conform to this HASP, prior to accessing work zones. Vehicular traffic will be permitted in the designated parking area as permitted by the owner. Access to the controlled work and traffic zones is restricted to authorized vehicles only.

SITE LAYOUT

See project work plan submitted separately.

BUDDY SYSTEM

Working alone is prohibited. All field personnel will be assigned a co-worker who will watch for hazards or problems his/her co-worker might encounter. Communication between employees must be maintained always. Workers will pre-determine hand signals, or other means of emergency signals, for communication when respiratory protection or distance makes communication difficult. Visual contact must remain between the two co-workers; they must remain near each other in order to assist in case of an emergency.

SITE COMMUNICATIONS PLAN

Each work crew, operator and manager will be equipped with a two-way radio. In the event of an emergency, and two-way radio communication is not available, oral and visual safety signals have been established to protect project personnel. These signals will be presented to personnel for all phases of operation before conducting any task. These safety signals will ensure quick communication during adverse or emergency situations. Examples of established signals, and their meanings, are provided below.

Visual Signal	Indication
Hand gripping throat	Out of air; can't breathe
Wave hands over head from side to side	Attention: stand by for next signal
Swing hands from the direction of person receiving the signal to directly overhead and through a circle	Come here
Pointed finger with extended arm	Look in that direction
Grip partner's wrist with one or both hands	Leave the area immediately
Hand on top of head	Need assistance
Thumbs up	Ok, I'm alright, I understand
Thumbs down	No, negative
Audio Signal	Indication
Short blast of air or vehicle horn	Caution look here
Three long blasts of air or vehicle horn	Leave the area



PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE will be selected, used, maintained and stored in accordance with OSHA 29 CFR 1926 Subpart E, and applicable manufacturer recommendations. Engineering, administrative and/or work practice controls to minimize hazards will be implemented where feasible, followed by PPE.

MINIMUM LEVELS OF PROTECTION

Level D personal protective equipment that is to be worn always by project personnel at the site includes;

- ANSI approved safety glasses with side shields;
- Leather safety boots (ANSI or ASTM)
- Rubber boots w/wet hazards or disposable booties
- Hardhat (ANSI Rated)
- High visibility vest or equivalent high visibility clothing
- Appropriate clothing (long sleeve shirts and pants) and Tyvek coveralls as required
- Gloves (leather always), nitrile as required
- Hearing protection (around powered equipment or using powered hand tools)
- Tick protection when working near water or when grubbing

Modified D PPE will be used when the possibility of dermal hazardous chemical contact, but not inhalation exposure exists and includes;

- The above minimum PPE
- Mono-goggles with face shield in chemical splash situations
- Impermeable chemical barrier gloves (i.e., nitrile) if handling contaminated material
- Coated disposable coveralls (Tyvek or equivalent) if exposure to hazardous chemicals exists
- Face shield and safety glasses with work where the potential for flying debris hazards is present (i.e., chipping, grinding, steel on steel impact activities)

Level C PPE, (*not anticipated for this project*) will be used if there is the possibility of inhalation of hazardous concentrations (or unknown concentrations) of vapors or fumes at or above OSHA PELs.

Level C PPE includes;

- Modified level D PPE
- Air purifying respirator (half-face)
- Appropriate filtering media (particulate, mercury, organic, or combination cartridge)

NOTE: OSC employees are given the option of using an air purifying respirator for voluntary use.

Level B is not anticipated for this project but may be made available if necessary.



Levels D and Modified Level D are the only anticipated PPE during this project. These minimum levels of protection are considered preliminary and may change based upon initial exposure assessment and routine assessments as work progresses. No change to the specified level of protection will be made without the approval of the HSO and in agreement with the Director HS&E and PARSONS.

SELECTION OF PROTECTION LEVELS

PPE will be used when project and support activities involve known, or suspected, contamination; when vapors, gases or particulates may be generated by site activities; or when direct contact with skin may occur. Respirators protect the lungs against airborne toxicants. Chemical resistant clothing protects skin from contact with harmful and absorbable chemicals.

Level D: Protection will be used when no airborne contaminant exposure is likely and job functions do not require the use of respiratory equipment or chemical resistive clothing. The equipment for this level of protection is described above and is expected to be the minimum for the project.

Level D Modified: Protection will be modified when additional contact hazards have been identified such as splash hazards and contaminated or nuisance dust. See the description above.

Level C: Protection that will be provided when airborne contaminants have been identified and which require the use of air purifying respiratory equipment to keep exposures below health-based limits. Examples of respiratory protection for this project are half or full-face air purifying respirators with appropriate cartridges (i.e. P-100 cartridges for lead particulate, Black Organic Vapor – VOC, Brown/Gold Acid Gas, etc.). Likewise, excavation work may require an approved P100/vapor combination cartridge.

Level B: Protection that will be provided when the highest level of respiratory protection is needed with partial body or skin protection. Equipment for this level of protection will include a minimum of the following:

- SCBA, PAPR or airline respirator depending on contaminate and situation
- Chemical resistant protective clothing for hazards identified.
- Hardhat or helmet for hazards identified.
- Chemical resistant gloves with liners for hazards identified.
- Chemical resistant safety shoes or boot covers for hazards identified.

Level C and B are not expected for this project.



HEARING PROTECTION

Project personnel will be provided hearing protection and required to use it whenever conducting tasks where exposures may exceed 90 dB as indicated in the following table;

Equipment	Sound Level at Operator		TWA, dBA
	Average, dB	Range	
<i>Earth Moving:</i>			
Front End Loader	88	85-91	
Back Hoe	86.5	79-89	
Bull Dozer	96	89-103	
Roller	90	79-93	
Scraper	96	84-102	
Excavator	86	83-92	89.6*
Truck	96	89-103	
Paver	101	100-102	
 <i>Power Units:</i>			
Generators	<85		
Compressors	<85		
 <i>Impact:</i>			
Pile Driver (diesel/pneum.)	98	82-105	
Pile Driver (gravity)	82.5	62-91	
Pneumatic Breaker	106	94-111	
Hydraulic Breaker	95.5	90-100	
Pneumatic Chipper	109		
 <i>Other Equipment</i>			
Compactor/Vibrator	94.5	85-98	86.1
Compressed Air Blower	104		
Power Saw	88.5	78-95	
Electric Drill	102		



Noise Standards	Noise Level
OSHA (at worker's ear)	90 dB (A) TWA
Day Time Community (at property line)	65 dB (A)

*Open windows

OSC has monitored sound levels for various tasks and operations conducted during the project to both verify that the levels cited above are accurate and to serve as exposure indicators. Sound levels have been measured for each task or operation reasonably expected of having noise levels that could result in exposures above 90 dB as an 8-hr. TWA. Regardless of the results however, OSC employees will be required to use hearing protection under pre-defined conditions.

Hearing protection will be required whenever an employee is either using a powered tool or working near loud noises (excavators, sheet driving, or working in heavy equipment with windows open). Hearing protection may be obtained from the HSO. Each employee is responsible for wearing hearing protection when required. Replacements may be obtained from the HSO, if necessary. Employees are encouraged to use hearing protection voluntarily if communications are not compromised.

RESPIRATORY PROTECTION (NOT ANTICIPATED FOR THIS PROJECT)

Project personnel may be required, if necessary, to use respiratory protection to reduce their exposure to airborne hazardous substances. The standard requirements that determine the selection and use of respirators depend on the hazards present. Respirators will also be made available, at the project work area, for emergencies.

Only respirators that are approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupation Safety and Health (NIOSH) are allowed. Use must follow the regulatory requirements set forth by OSHA 29 CFR 1910.134 and OSHA 29 CFR 1926.103.

OSC employees may voluntarily use a filtering facepiece in conditions when respiratory protection is not mandatory. Employees that are medically cleared to use an APR may wear any type respirator voluntarily.

Medical Clearance & Fit Testing

All personnel, which are assigned to tasks where a respirator is needed, must have prior medical clearance. Medical evaluations and fit testing are provided by OSC. Fit test records and all project personnel medical documentation will be filed and maintained onsite, by the HSO.



Medical limitations and restrictions will be strictly enforced. No employee will be permitted to use a respirator if he/she has any facial abnormality or facial hair that may affect the fit or seal of their respirator

Training

All personnel who are required to wear a respirator will receive training (in addition to required annual training) from the HSO on the use, maintenance, proper care and inspection of their respirators. Attendance at all training will be documented. Attendance records will be maintained onsite by the HSO and will be available for inspection upon request.

Inspection

All respirators to be used at the jobsite will be inspected for damage by the employee, prior to use. After they are trained, every employee will be responsible for inspection of their own respirator. The following elements will be inspected;

- Tightness of the connections
- Face piece
- Headbands
- Inhalation valve
- Cartridge or filter fittings
- Signs of deterioration

Any malformation, distortion, missing parts, cracks, etc. in the respirator will cause the equipment to be deemed useless until a qualified technician can properly repair the respirator. If necessary, a new respirator will be issued.

Respirator Type

The type of respirator, and who is required to wear them, will be identified on a task specific level by the HSO, in consultation with the Director HS&E, based on the type of work that will be performed and the potential for exposure to airborne contaminants.

Standard Procedure for Use

All personnel will adhere to the following standard operating procedure for respirator use;

- Carefully inspect the respirator prior to entering potentially contaminated work areas
- Conduct positive and negative pressure leak tests each time the respirator is to be used
- Do not remove the respirator in contaminated work areas
- Wear a respirator with straps inside disposable garment hood (if equipped)



Cleaning and disinfecting

Any reusable respirator must be cleaned after each use. The steps required to clean a respirator after use are;

- Remove the cartridge and headbands
- Disassemble all respirator parts
- Wash all parts, except for the cartridge and headband, in a cleaner-disinfectant solution or use soap and hot water
- Rinse all parts completely in clean, warm water
- Air dry in a clean, sanitary area
- Re-assemble the respirator
- Store the cleaned respirator in a sealed bag.

Storage

Respirators will be stored in a sealed bag to protect against dust, sunlight, extreme temperature, moisture and abrasives. Inhalation holes will be covered with duct tape immediately after leaving a contaminated area. The tape will be left on until the respirator is donned for the next entry into a contaminated area. This tape will prevent any contaminants from being dislodged from the cartridge. Respirators should be stored so that the face piece and exhalation valve will rest in a normal position and function will not be impaired by the elastic setting in an abnormal position. The respirator should not be hung to store or air dried by its straps.



STANDARD OPERATING PROCEDURES (SOPs)

General

- Ensure that all safety equipment and protective clothing is kept clean and well maintained.
- Ensure that all prescription eyeglasses are safety glasses and are compatible with respirators. No contact lenses are allowed at this Project site.
- Ensure that all disposable or reusable gloves are approved by the HSO
- Respirator filters will be changed daily.
- At the end of each day, decontaminate or dispose of all PPE used onsite. The HSO is responsible for ensuring decontamination before PPE reuse.
- All Project personnel will have vision or corrected vision to at least 20/40 in one eye.
- Onsite personnel that are found to be disregarding any provision of this HASP will be barred, at the request of the HSO, from this Project.
- Do not reuse disposable outerwear such as coveralls, gloves and boots. Used disposable outerwear will be removed upon leaving the exclusion zone and placed inside disposable containers that are provided for this sole purpose. The containers will be stored at the project site, at the designated staging area, and OSC will coordinate with PARSONS for the proper disposal of these materials at the completion of the project.
- When working, immediately replace protective coveralls that have become torn or badly soiled.
- Eating, drinking, smoking, chewing gum and tobacco use shall be in designated areas.
- All personnel must thoroughly wash their hands, face and forearms prior to using the facilities, eating, drinking and smoking.
- NO alcohol, drugs (without prescriptions) or firearms will be allowed onsite at any time.

All personnel who are on medication with a safety-sensitive affect will report it to the HSO, prior to work start-up, The HSO will require a letter from the individual's personal physician stating what limitations, if any; the medication may impose on the individual.



EXCAVATION SAFETY (*NOT ANTICIPATED FOR THIS PROJECT*)

OSC maintains strict procedure for soil excavations. The safety of all employees during these operations depends on the soil structure and stability, contamination, weather conditions, buried utilities and structures and superimposed loads.

When excavating within a wet, sandy area, or if the area has been backfilled at any time, it is likely to be very unstable. All personnel working in these conditions must be cautious and provide extra sloping, if possible. A change in weather conditions, such as heavy rain or snow, can loosen the soil and increase the risk of a collapse. If the area of excavation is prone to collapse precautions, such as covering the area, should be taken. Heavy equipment or materials should be kept as far away as possible from the excavation area because they can also increase the risk of collapse. All excavated soil should be removed from the rim of the area and contained if possible.

An excavation competent person must be on site anytime entry into an excavation is necessary. Any person entering an excavation must be trained in the hazards and safe work practices of excavations.

To eliminate the impact on buried pipelines or cables, before any excavation begins OSC personnel will notify all utility companies to locate their lines. If such a hazard exists, the lines will be carefully marked (potting, hand digging, etc.) prior to the start of the excavation activities.

When deeper than five feet, to prevent collapsing soil the excavation must be sloped, shored or somehow contained before any personnel may enter. A ladder will be provided for employees who are working in depths for more than four feet and spacing between will not exceed 25 feet. The ladder will not be removed until all employees have exited the excavation site.

All excavation sites will be inspected daily by an OSC designated competent person. All activity will cease if the competent person, site superintendent, and/or the HSO find the site hazardous. The competent person will make an inspection any time there is a change in conditions (i.e., weather, water, heavy equipment operation, etc.).

EXTERIOR PRECAUTIONS

OSC requires that all exterior structures (sidewalks, bridges, etc.) be protected and clear of excavated materials. Sidewalks will be shored to carry a load of at least 125 pounds/sf. Planks, which are being used for temporary walkways, will be laid parallel to the length of the walkway and will be fastened together. If possible, guard rails or fences will be erected to protect employees and vehicle traffic from the edge of excavation sites.



LOCKOUT/TAGOUT POLICY

For repairs or maintenance, equipment will be locked out. This procedure ensures the health and safety of all personnel by deactivating any movable, electrical or pressurized equipment. This policy applies to all machinery or equipment that can be moved either using electrical power, hydraulic power, compressed air, steam or energy stored in springs/suspension devices. Damaged tags will be placed on all movable equipment and machinery.

Only project personnel and supervisors are authorized to lockout machinery/equipment. Every employee is responsible for his/her own equipment and nobody else is permitted to remove a lock or tag except the authorized employee. Any violation of this policy is cause for strict disciplinary action.

Lockout Procedures

Lockout devices are used to prevent the accidental re-energizing of equipment.

De-energizing Circuits and Equipment: Disconnect the circuits and equipment, to be worked on, from all electrical sources and release stored energy that could accidentally re-energize equipment.

Application of Locks and Tags: Only authorized personnel are allowed to place a lock and tag on each disconnecting – means used to de-energize the circuits or equipment before the work begins. A lock prevents unauthorized personnel from re-energizing the equipment or circuits. A tag prohibits unauthorized operation of the disconnecting device.

Verification of De-energized Condition of Circuits/Equipment: Prior to work on equipment, OSC requires that a “qualified” employee verify that the equipment is de-energized and cannot be restarted. This is typically done by a visible break in the conductors (i.e. air gap) of one foot or more.

Re-energizing Circuits and Equipment: Before circuits or equipment are re-energized, the following steps must be taken in the following order:

- A “qualified” employee conducts tests and verified that all tools and devices have been removed.
- All exposed employees are warned to stay clear of the circuits and equipment.
- Authorized personnel will remove their own locks and tags.
- The HSO will conduct a visual inspection of the area to be sure all employees are clear of the circuits and equipment.



ELECTRICAL

Only qualified and authorized personnel may work on or around electrical equipment. OSC personnel are not permitted to work on energized lines or equipment. Live or hot work must be contracted to a qualified third party unless specific authorization is given by the OSC President or Director HS&E. The following shall be observed;

- The working space around all electrical equipment will be large enough to permit access to all parts of the equipment. The working space will never be used for the storage of other materials so that immediate access can be gained.
- Only NEC certified electrical tools may be used.
- A ground fault circuit interrupter (GFCI) shall be utilized with all portable electric tools; plugged in at the source and tested prior to use. All electrical equipment shall be properly grounded or guarded (double insulated tools, GFCI).
- Single phase electrical tools must be plugged into properly grounded receptacles.
- The use of extension cords is discouraged. If their use is necessary, extension cords must never be used in traffic areas where they may be a hazard, or where they may become unplugged. Extension cords will always be grounded.
- Any energized electrical equipment, operating at 50 volts or higher, must be protected by a cabinet or other approved enclosure with warning signs that are immediately visible.

FALL PROTECTION

All work from elevated heights > 6 ft. with an open edge to the next lowest level shall be performed as supervised by a competent person. In all cases proper fall protection systems shall be utilized as determined by the competent person for fall protection; restraint systems (PFRS, guard rails, and warning lines (restricted for unprotected edge work where traditional systems are not practical).

Whenever possible, fall restraint shall be used over fall arrest. OSC observes a policy of 100% tie-off at all times.



INCIDENT PREVENTION PROCEDURES

SAFETY TASK ANALYSIS CARD

The Safety Task Analysis Card (STAC) process is a required component of all OSC projects. The STAC is a pre-printed, bi-fold card that must be completed by each employee at least once per week. The card is used by the employee as a reference tool throughout their work shift. STAC card observations are used to address new work tasks and/or potential hazards.

STAC's are used in addition to safe work permits and/or approved work procedures. The STAC is designed to be an ongoing learning tool. By breaking jobs into small parts, workers can identify hazards and eliminate or control them. It is intended as a tool to help employees make observations and correct fellow employee at risk behaviors.

The STAC must be completed by each employee at least once per week. This is the minimum requirement. Project personnel found participating in or observing risky actions without submitting a properly completed STAC will be re-trained on the need to do so.

Project supervisors and/or the HSO will review submitted STACs with employees during tailgate safety meetings and identify corrective actions.

FIRE PREVENTION AND PROTECTION

Emergency response and contingency procedures provided this HASP will be in effect throughout all phases of work. Included are firefighting equipment, alarm systems, the location of the closest fire departments and procedures for handling fire emergencies. Firefighting equipment will be inspected on a regular basis, maintained in proper working condition and will be in an accessible place, at the site, at all times.

All heavy equipment will be equipped with a fire extinguisher.

Fire extinguishers will be immediately available when working with or near combustible or flammable items.

A fire extinguisher, rated 2A or greater, will be provided for every 3,000 sf of protected building area, or major fraction thereof, on every floor and they will be placed no more than 100 feet from any point within the building. Fire extinguishers will be placed adjacent to stairways in multi-story buildings. This condition is not expected on the project.



SITE HOUSEKEEPING

The following housekeeping guidelines apply at this site:

- All excess material and debris will be kept clear from all working areas.
- Combustible materials will be removed at regular intervals and all wastes will be properly disposed of at frequent intervals.
- Containers will be provided for the collection and separation of all discarded materials and refuse. Covers and identification will be provided for all containers used for flammable or harmful substances.

MECHANICAL EQUIPMENT

The following guidelines apply when dealing with the inspection and operation of all mechanical equipment;

- All vehicles and equipment, used on the site, must be checked at the beginning of each shift to assure that all parts that affect safe operation are in proper working condition and are free from defects. An inspection form must be completed and filed with the HSO.
- Personnel will not be permitted to operate equipment when there is an obstructed view to the rear or sides, unless there is a spotter.
- Employees will not work or walk under or between any equipment that had parts which are suspended or held aloft unless/until the parts are substantially blocked to prevent falling and shifting.
- Hydraulic leaks must be addressed immediately by stopping the equipment, preventing further leaking and cleaning any hydraulic fluid spills/leaks. Notify the HSO immediately for proper corrective actions to be determined.

HIGH PRESSURE WASHERS

OSC requires that only trained and authorized personnel operate high pressure washers. This policy is intended to protect both **OSC** employees as well as any property where the equipment will be used. The following guidelines apply:

- The lance must always be pointed at the specific work area.
- Personnel will remain at least 25 feet away from the washer; and the item being washed.
- Care should be taken to ensure the proper footing of the operator.
- The operator will wear the following personal protective equipment: Hard hat with face shield, goggles, safety boots with metal foot and shin guards, hearing protection, PVC rain or chemical resistant suit and heavy gloves; as well as any additional equipment to protect against chemicals, as needed.
- OSC requires that all operators be trained in the emergency shutdown procedures and general equipment maintenance of high-pressure washers.



- Under no circumstances will an operator be allowed to make modifications to a power washer while on a job.

VEHICLE AND EQUIPMENT SAFETY

Only trained and qualified personnel may operate equipment and vehicles. This policy is intended to protect all employees and client properties. The guidelines for this policy are as follows;

- Each unit is to be inspected prior to its use on site and then inspected periodically depending on the equipment involved and the manufacturer's specifications.
- No repair work, or refueling, will be done while the vehicles or equipment are in operation. The engine is to be turned off and all buckets, blades, gates or booms must be lowered to the ground, or a substantial support.
- Equipment backup alarms must be operational and audible over the surrounding noise levels. If this is not the case, an assistant must be assigned to the operator and he/she will be required to clear the way.
- Only authorized personnel are permitted to ride in company vehicles and equipment.
- Under no circumstances will an employee be permitted to get on or off a moving vehicle.
- Operators must wear the following PPE: Boots/sturdy work shoes, ear protection devices when the noise level is excessive (see hearing protection section), heavy work gloves. Hardhats and safety eyewear with side shields are required whenever outside of an enclosed cab. Safety glasses and hearing protection are required when cab windows are open.
- The operator must wear seatbelts at all times.
- To ensure the proper visibility all windshields, side windows, mirrors and lights will be cleaned as often as necessary.

Trucks

The following guidelines apply to truck operators;

- A current driver's license must be carried always
- Drivers will check loaded material to ensure against loss or shifting during transit
- All DOT regulations will be followed
- When towing trailers, safety chains (grade 70) must be in used
- Non-OSC drivers must receive site-specific instructions upon arrival such as remaining in the truck, where to tarp loads, required PPE if allowed to exit truck, proper entry procedures, etc.

Heavy Equipment



OSC has the following requirements for operating front end loaders, excavators, dozers and tractors;

- Prior to their use onsite, the equipment's brakes, cables and hoses must be checked and in good working order.
- When the equipment is moving, all blades, buckets and bowls will be carried close to the ground but high enough to avoid any obstacles on the ground. If not in motion, they must be lowered to the ground or to a substantial support.
- No employees are permitted to ride on a boom, bucket, bowl or any other heavy equipment extension.
- All safety equipment must be properly installed, and in good working condition, before a piece of equipment will be used on this project.

SANITATION

Except for mobile crews having transportation readily available, all work sites will have toilets provided that adhere to the following requirements: One toilet for 20 or less employees; one toilet seat and one urinal per 40 employees; if there are 200+ employees, one toilet seat and one urinal per 50 workers.

Adequate washing/showering facilities will be provided on site where there are harmful substances, and they will be in close proximity to the site. An acceptable supply of portable water will be provided onsite, and it will be clearly marked as such. Portable water containers will have tightly sealed tops and a tap.

DAILY INSPECTIONS

The HSO will monitor jobsite hazard mitigation through inspections at the start and throughout each workday. Results of these daily inspections will be recorded on a daily safety log and provided to PARSONS as needed.

Any safety violations will be recorded and corrected by the Project Manager. All observed safety violations will be immediately corrected, explained to the person responsible, and reviewed at the next safety meeting. If an employee has excessive violations of the site safety rules, it will be grounds for disciplinary action which could lead to; termination of OSC personnel or expulsion if an onsite subcontractor personnel.



INCIDENT REPORTING

OSC will prepare and maintain (on site) incident reports that include corrective actions. These reports will be provided to PARSONS within 48 hours of the incident and as needed. Each incident report will be reviewed by the OSC Director HS&E. Verbal notification shall be within 2 hours.

Any occupational incident, which results in the death of one or more employees will be reported to OSHA within 8 hours. The inpatient hospitalization an employee and all amputations or loss of an eye will be reported within 24 hours. All such incidences will be reported by OSC to the nearest OSHA Area Director during normal business hours or at the National Hotline (800-321-OSHA (6742)).

In addition to OSC's internal reporting requirements, Honeywell requires all incidents (adverse events) to be investigated and based on the severity, requires notification of the incident within specified timelines. Adverse events are divided into three tiers: Tier 1 events are the most significant and serious events, followed by Tier 2, which are significant events but not as serious as Tier 1 events, and Tier 3 events are essentially all other events that do not meet the criteria for Tier 1 or Tier 2 events. Tier 1 events are to be reported within 2 hours, Tier 2 events are to be reported within 24 hours, and Tier 3 events are to be reported when possible.

Adverse events include the following:

Tier 1:

- A release to air, water or soil that has an actual or potential off-site adverse environmental impact.
- One or more on-site fatalities;
- Three or more employees, contractors or visitors admitted to a hospital;
- Any off-site fatalities, injuries, or harmful exposures resulting from Honeywell products or operations;
- Any security incident that may be immediately dangerous to life or property, including fires, explosions, bomb threats, chemical release, radiation release, release of a biological or chemical agent (aerosolized or gaseous form);
- Suspicious materials, package or letter that poses immediate risk to employees and has been;
- Government representatives alleging or suggesting criminal non-compliance of any kind;
- Receipt or notice of any regulatory agency directive or other type of injunctive device designed to curtail or restrict operations; and,
- Community injuries or diagnoses of illnesses allegedly associated with a company-related incident, event or release to air, water or soil.

Tier 2:

- Employee or contractor lost workday injuries/illnesses.



- Employee, contractor or visitor recordable injuries/illnesses (Criteria: “Honeywell Global Recordkeeping Requirements”).
- An environmental excursion that does not also trigger Tier 1 reporting.
- A release to air, water or soil that only narrowly avoided an adverse environmental impact or had the potential to be an excursion.
- Discovery of potential or actual evidence of contaminated groundwater from current or former operations that does not otherwise meet the definition of a Tier 1 Event.
- Suspicious activities in or around Honeywell facilities or processes that may present a potential security risk.
- Allegations of previously unknown health/safety/environmental effects caused by products, processes, emissions or discharges (Reference: Risk Management and Reporting (Pstew-3)).
- Written notification from a governmental agency alleging non-compliance of any kind.
- Proposal or imposition of an HSER fine, penalty or corrective action.
- Receipt of a non-routine request for information from a governmental agency.
- A non-routine regulatory agency inspection.
- Audits (Peer review, Self-assessments, SBU, Third party findings and recommendations)
- Significant community activism or adverse media coverage not associated with an episodic event.
- A product recall imposed by a regulatory agency.
- Transportation-related event that results in Tier 2 impacts.
- Notice of an allegation from a third party or regulatory agency of environmental impacts from operations on current or formerly operated Honeywell facilities.
- Demands, including voluntary agreements, to conduct a site investigation or remedial measures to respond to environmental impacts from operations on current or formerly operated Honeywell facilities.

Tier 3:

The following Tier 3 events shall be entered into the event tracking system within seven (7) calendar days:

- On-site or off-site employee, contractor employee or visitor injuries/illnesses where first-aid treatment or evaluation is provided by a Medical or Para-Medical Professional.
- A regulatory agency inspection (which is not a Tier 1 or Tier 2 Event and may still be underway) with no notice of fine, penalty or corrective action.

Adverse events must be reported to the PM, the PARSONS engineering and construction manager, the RM, as soon as possible following the event. All Tier 1 and Tier 2 adverse events must be investigated, and a written investigation report must be prepared and submitted to the Honeywell Event Reporting System.



MEDICAL SURVEILLANCE

MEDICAL EXAMINATIONS

OSC field personnel are provided with a thorough, initial medical examination to assess fitness for the project and to provide baseline health data for subsequent reference. Examinations are conducted by a qualified health care provider and repeated annually (unless abnormal test results, annual “questionnaire” answers or other problems dictate more frequent observation). A copy of the physician’s statement certifying each employee’s ability to work at task specific operations will be maintained in the project file by the HSO.

During the medical examination employees will be evaluated for their ability to wear respiratory protection. This evaluation will include, at a minimum, an examination of the cardiopulmonary system; including forced vital capacity (FVC) and forced expiratory volume C 1 second (FEV 1.0). When indicated by the physician, other tests of the respiratory and cardiovascular systems will be performed on the basis of an individual’s past history, findings of the above below evaluation, and/or the type of equipment the individual may be required to use.

Following is an example of a baseline yearly medical examination:

Medical Monitoring Protocol				
Exam Components	Baseline	Annual	Interim	Exit
Vital Signs	Yes	Yes	Yes	Yes
Vision Screening (Includes Peripheral and Color)	Yes	Yes	Yes	Yes
Urine Drug Screen	Yes	Yes	As needed	As needed
DOT hearing	Yes	Yes	No	Yes
Spirometry	Yes	Yes	Yes	Yes
Chest X-Ray (asbestos work only)	Yes	3	No	3
Review of History	Yes	Yes	Yes	Yes
Physical Exam	Yes	Yes	Yes	Yes
Notes: Only do an X-ray if not done within the last 12 months Only do an X-ray if not done within the last 3 years For medical indications only				



NOTE: Any employee who develops a lost time injury or illness, during the period of this contract will be evaluated by the OSC medical consultant. The project supervisor will be provided with a written statement that indicated the employee's fitness and ability to return to work, signed by the medical consultant prior to allowing the employee to re-enter the work zone.

AIR MONITORING:

Lower Explosive Limit (LEL) monitoring will be conducted around each tank containing coal tar prior to beginning work each day and when coal tar is being handled. Concentrations greater than 10% of the LEL will result in work stopping immediately for further evaluation. When LEL concentrations are zero, the HSO shall determine the need for additional monitoring.

Volatile Organic Compound monitoring (breathing zone) shall be performed when odors are detected. Monitoring will be conducted using a MultiRAE Lite with a 11.7 lamp. Work resulting in readings of 0.6 ppm TWA after four hours shall stop and the OSC Director, HSE contacted for further evaluation.

CONFINED SPACE ENTRY PROCEDURES (*NOT ANTICIPATED FOR THIS PROJECT*)

The following guidelines outline the minimum acceptable criteria that will be utilized by **OSC** and subcontractor personnel for all confined space entry operations.

All project specific confined space entries will be thoroughly reviewed by the designated HSO. Confined Space Permits shall be issued and approved in conjunction with the PARSONS Project Manager. Personnel entering and working in confined spaces will be required to adhere to the OSHA Permit-Required Confined Space Standard 29 CFR 1926.1200 and the OSHA General Duty Clause. Affected project personnel are instructed in these OSHA regulations as part of the OSC employee training program.

The HSO will be responsible for reviewing the applicable entry protocol with the field team, prior to confined space entry.

DEFINITIONS

CONFINED SPACE: There are two types of confined spaces: permit required and non-permit required. OSHA's "PRCS Evaluation Procedures and Decision Flow Chart" will be used to evaluate the potential for permit require confined space.

PERMIT REQUIRED CONFINED SPACE (PRCS): The space contains, or has the potential to contain;

- A hazardous atmosphere. A hazardous atmosphere is defined as any space where the oxygen is below 19.5% or above 23.5%, combustible vapors are above 10% LEL, or high



toxic concentrations are present which may cause death, incapacitation or an impaired ability to self-rescue.

- The space contains a material that may engulf an entrant.
- The space has an internal configuration that may trap or asphyxiate entrants.
- The space contains any other serious health, safety or environmental hazard.

NON-PERMIT REQUIRED CONFINED SPACES: OSHA defined a non-permit required confined space as a PRCS in which all serious hazards have been eliminated. Non-permit required confined spaces will be re-evaluated by the HSO using the “PRCS Evaluation Procedure and Decision Flow Chart” (see attached) whenever they or their characteristics change in a way that could lead to reclassification as a PRCS.

PERSONNEL RESPONSIBILITIES

Entry Supervisors

OSC will designate an entry supervisor to oversee the confined space entry and ensure that personnel engaged in PRCS entry operations will comply with this procedure. Entry supervisors will:

- Verify that all tests, specified by the permit, have been conducted and that all procedure and equipment specified by the permit are in place before endorsing the permit and allowing the entry to begin.
- Terminate the entry and cancel the permit when the entry operations covered by the entry permit have been completed, or whenever a condition that is not allowed under the entry permit arises in or near the PRCS.
- Verify that rescue services are available and that the means for summoning them are operable.
- Remove all unauthorized individuals who enter, or attempt to enter, the PRCS during entry operations.
- Determine that the entry operations are consistent with the terms of the entry permit and that acceptable entry conditions are maintained.

Attendants

The entry supervisor will designate a qualified attendant for each PRCS operation. To be qualified, an attendant must know the hazards that authorized entrants may encounter during an entry (including information on the mode, signs and symptoms, and consequences of exposure) and must be aware of the behavioral symptoms of hazard exposure. Attendants will;

- Remain outside the PRCS during entry operations until relieved by another attendant.
- Warn all unauthorized entrants that they must stay clear of the PRCS, or that they must immediately exit if they have entered the PRCS.



- Inform the entry supervisor, if unauthorized personnel have entered the PRCS.
- Continuously maintain an accurate count of entrants in the PRCS and ensure that the means used to identify authorized entrants accurately identifies the entrants.
- Communicate with authorized entrants, as necessary, to monitor entrant status and to alert entrants of the need to evacuate the PRCS.
- Monitor the activities both inside and outside the PRCS.
- Immediately order evacuation of the PRCS if a prohibited condition is detected, the behavioral effects of hazard exposure in an authorized entrant are observed, or a situation outside the PRCS is found that could endanger the authorized entrants; or if the attendant cannot effectively and safely perform his/her duties and responsibilities.
- Perform non-entry rescues, as specified by the Confined Space Entry Permit; summon rescue and other emergency services as soon as it is determined that authorized entrants may need assistance to escape from PRCS hazards.

Attendants will NOT, under any circumstances;

- Monitor more than one occupied PRCS at any given time;
- Perform any duty that might interfere with their primary duty to monitor and protect the authorized entrant; or
- Enter the PRCS for rescue purposes.

Entrants

Authorized PRCS entrants will be identified on each Confined Space Entry Permit. Authorized entrants will;

- Know the hazards, including information on the mode, signs or symptoms, and consequences of exposure.
- Properly use the PPE provided for the PRCS entry.
- Communicate with the attendant, as necessary, so the attendant can monitor entrant status and alert entrants of any need to evacuate the PRCS.
- Evacuate the PRCS and alert the attendant whenever they recognize any warning signs or symptoms of exposure to a dangerous situation; or they detect a prohibited condition; or whenever the attendant or entry supervisor orders the evacuation; or when an evacuation alarm is activated.

TRAINING

All project personnel will be instructed not to enter PRCSs without the proper permit and without following the procedure and practices outline in this SOP and in the Confined Space Entry Permit. Personnel, who are required to enter a PRCS, or act as an attendant or entry supervisor, will be



trained to acquire the understanding, knowledge and skills necessary for the safe performance of their assigned responsibilities and duties.

Entrants will receive training on;

- The means and methods used to communicate with attendants; as well as the means attendants will use to notify them of emergencies.
- The operation of any specialized equipment that is expected to be used, including monitoring and rescue equipment.
- Evacuation signals and procedures; as well as the need for entrants to notify the attendant and evacuate the PRCS if they detect any dangerous conditions.

Attendants will receive training on:

- The procedures for monitoring inside and outside the PRCS and recognizing the conditions that might be hazardous to entrants;
- Procedures for communicating with entrants;
- Procedures for evacuating entrants from the PRCS and when evacuation is required;
- Procedures for controlling access to the PRCS;
- Their responsibility to remain outside the PRCS during entry, unless they are relieved by another attendant, and
- Non-entry rescue procedures.

Entry Supervisors will receive training on;

- Verifying that the Confined Space Entry Permit has been completed properly;
- Procedures for verifying that all tests specified by the Permit have been conducted;
- Requirements for verifying that all the procedures and equipment specified by the Permit are in place before allowing entry to begin;
- Procedures for determining if conditions are acceptable for entry;
- Authorizing entry operations, and
- Terminating entry.

All training will be conducted:

- Before the employee is first assigned confined space duties (initial training);
- Before a change in assigned duties;
- Whenever there is a change in permit space operations that presents a hazard about which employee has not previously been trained, and
- Whenever project management comment, involved regulatory officials, or the project engineer has reason to believe that there are inadequacies in the knowledge or use of these procedures.



When complete, training will be certified by the instructor. The certification will list the names of the personnel presenting and receiving training and the dates of training. Training certification documentation will be maintained as part of the Project file kept at the site and in the individual's personnel files in the home office.

PRCS ENTRY PROCEDURE

Atmospheric Testing

Before an employee enters any confined space, the entry supervisor will test the internal atmosphere with a calibrated, direct reading instrument to determine if acceptable entry conditions exist for the following conditions, in the given order:

<u>Condition</u>	<u>Acceptable Parameter(s)</u>
A. Oxygen Content	Above 19.5% and Below 23.5%
B. Flammable Gases and Vapors	Less than 10% LEL
C. Potential Toxic Air Contaminants	Below Action Levels for PPE

Continuous systems which cannot be isolated (i.e. sewers) or activities which generate significant airborne contaminants (i.e. welding) will be continuously monitored during entry, unless forced mechanical ventilation is used and has been shown to maintain an acceptable atmosphere.

Entry

The HSO will use the "PRCS Evaluation Procedures and Decision Flow Chart" to verify the presence of a PRCS. If it is determined that a PRCS does exist, the HSO will review the confined space entry procedures with entry personnel; post OSHA required danger signs at the entrances to the PRCS and notify Project personnel of the PRCS location(s); notify offsite emergency response services of the PRCS; and prepare a Confined Space Entry Permit.

Confined Space Permit

The entry supervisor will be responsible for completing the Confined Space Entry Permit. All items on the Permit must be completed. The entry supervisor will verify that all entry personnel are aware of the specific hazards that are associated with the PRCS; that all necessary safety equipment and materials are in place; that all emergency response procedures are in place; and that the pre-entry air monitoring results indicate acceptable entry conditions, before signing the permit.

Pre-entry Briefing



The entry supervisor will conduct a pre-entry briefing with the attendants and authorized entrants to discuss the requirements of the Permit and to ensure that all involved personnel understand their responsibilities and the specific hazards associated with the PRCS. A pre-entry briefing will be conducted, for each attendant and entrant, prior to entry and whenever new hazards are identified.

Entry Authorization

The entry supervisor will sign the Confined Space Entry Permit after the Permit has been completed, all safety equipment is in place, air monitoring results are acceptable, the pre-entry briefing has been conducted and the rescue procedures have been established. Once the permit has been signed:

- Entrants will wear all necessary safety and rescue equipment;
- The Permit will be posted at , or near, the PRCS entrance, and
- Entry procedures will begin.

Permit Exit and Cancellation

Each Entry Permit will be valid for one shift only. Expired and canceled Permits will be returned to the Site Superintendent who will file them with the Project documents. Permits will be canceled if;

- A new hazard is identified or encountered;
- An entrant is seriously injured and requires evacuation and/or rescue; or if
- A change in the scope of work required new activities which may create previously unanticipated hazards that could cause serious death or injury.

RESCUE/EMERGENCY RESPONSE

Offsite Rescue and Emergency Services

Offsite rescue and emergency service personnel will be informed by the HSO of the hazards they may confront when called to the jobsite to perform services. These services will be identified and notified prior to any entry. Entry will not be performed if emergency rescue services are not available. The rescue/emergency service personnel will be provided access to all permit spaces from which the rescue may be necessary, so that the emergency responders can develop appropriate rescue plans and conduct rescue operations.

Non-entry Rescue

Non-entry rescues, retrieval systems or methods will be used whenever an authorized entrant enters a PRCS, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant.



Each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level or above the entrant's head. Retrieval lines will be attached to a mechanical device or a fixed point outside the Permit space, in such a manner that rescues can begin as soon as the rescuer becomes aware of the necessity. The mechanical device will be ready to retrieve personnel from vertical PRCs more than five feet deep.

DECONTAMINATION PROCEDURES

Decontamination of equipment and personnel will be performed as necessary and as defined in the project scope. All equipment and personnel will be decontaminated before leaving the property.

Personnel and equipment decontamination procedures to be employed are summarized in the following subsections.

PERSONNEL HYGIENE AND DECONTAMINATION

Personnel will be made aware of any personal habit that may allow contaminants into or onto their body. All personnel will check that regularly worn PPE (i.e. hardhats and liners, eye protection, etc.) is clean and in good condition. A storage area for decontaminated PPE will be provided and used outside the contaminated zone. Any products used for personal consumption are prohibited in any work area. Break areas will be limited to specific areas where eating, drinking, smoking, etc. and the storage of these materials will be allowed.

A typical personnel decontamination sequence is presented below.

- Step 1: Scrape the gross contamination from boots and outer gloves. Wash them using soap in a water solution and rinse with water into a designated container in the contamination reduction zone.
- Step 2: Remove the tape from and around boots and outer gloves and deposit in a collection drum (if disposable) or store on a rack (if reusable). Remove the over boots and outer gloves and place in a collection drum (if disposable) or wash and place on a rack (if reusable).
- Step 3: Remove respirator cartridge and place in a collection drum.
- Step 4: Remove disposable coveralls and place in a collection drum. Remove boots and store in an appropriate location. Remove disposable inner gloves and dispose of them in a collection drum.
- Step 5: Remove hardhat and safety glasses: Decontaminate as necessary (wash with sanitizing solution [MSA sanitizing solution or equivalent], rinse with potable water and allow to dry at the end of each day).
- Step 6: Remove respirator, if used, and deposit in a plastic liner. Avoid touching face with fingers. Respirators will be washed in a sanitizing solution (MSA sanitizer or equivalent), rinsed with portable water and allowed to air dry at the end of each day.



- Step 7: Thoroughly wash and rinse any exposed skin with water and biodegradable soap using bucket 1. Rinse in bucket 2. Re-rinse in bucket 3. Shower and launder all personal clothing as soon as possible upon completing daily activities.

Personnel hygiene, hand and face washing, following decontamination will take place in the project support area.

EQUIPMENT DECONTAMINATION

The HSO will be responsible for inspecting decontaminated vehicles, equipment and material contaminated work areas, to ensure proper decontamination. The users and HSO will verify that each piece of equipment utilized in the exclusion zone has been properly decontaminated.

Decontamination personnel will be required to use Modified Level D PPE as specified in this HASP. The standard operating procedure for the use of high-pressure washers, also provided, will be strictly followed to prevent injury.

HEAVY EQUIPMENT DECONTAMINATION

As a general practice, equipment, such as excavators, bulldozers, etc. will remain within the work zone for the duration of the excavation activities. This ensures the minimization of the potential migration of contaminants outside the project limits. In addition, the sequence of excavation has been designed to avoid the movement of machinery and personnel over areas within the work zones that have been excavated.

Generally heavy equipment, and large materials used in potentially contaminated areas equipment, will be decontaminated as outlined below;

- Conduct gross removal of solids at point use.
- Degrease as necessary.
- Move to the equipment decontamination pad for decontamination via pressure washing.
- Collect and handle resultant liquids/solids.

TOOLS AND SMALL EQUIPMENT DECONTAMINATION

Tools and smaller equipment that may have come in contact with potentially contaminated materials will be decontaminated using the procedures outlined below;

- Flush and wipe components to remove debris and other gross contamination.
- Clean with potable water and non-phosphate detergent (i.e. Alconox) using a brush or high-pressure washer, as necessary, to remove particulate matter and surface films.
- Rinse thoroughly with potable water.



- Allow to air dry for as long as possible.

NON-DISPOSABLE SAMPLING EQUIPMENT

Non-disposable sampling equipment that may have come into contact with potentially contaminated materials will be decontaminated prior to collecting each sample as follows;

- Clean with potable water and non-phosphate detergent using a brush, if necessary, to remove all visible foreign matter.
- Rinse thoroughly with potable water.
- Rinse thoroughly with de-ionized water.
- Visually inspect the openings and treads for solid materials.
- Allow to air dry as long as possible on a clean polyethylene sheet or aluminum foil.

DISPOSAL OF DECONTAMINATION WASTES

All equipment and solvents used for decontamination will be decontaminated or disposed of properly through PARSONS. All aqueous liquids generated in the personnel and equipment decontamination process will be collected, characterized and appropriately disposed of. All disposable PPR will be containerized in drums and properly disposed of.



EMERGENCY EQUIPMENT and FIRST AID REQUIREMENTS

Emergency and first aid equipment to be maintained onsite will include the following;

- Approved, portable, emergency eye wash units in accordance with ANSI Standard Z358.1
- At least one industrial first aid kit will be provided and maintained at an easily accessible, uncontaminated location chosen by the HSO. Additional first aid kits will be provided as needed
- First aid and CPR kit locations will be specifically marked by the HSO and stocked with adequate water and other supplies necessary to cleanse and decontaminate burns, wounds or lesions.
- 10#A: B: C type dry chemical fire extinguishers will be provided at all project site locations where flammable materials present a fire risk. Mobile equipment will be equipped with 2-pound extinguishers.

Agencies and medical facilities that need to be contacted in the event of an onsite emergency, as well as directions to the nearest hospital, are identified at the beginning of this HASP. The tables stating the emergency contact information and hospital location will be posted in a prominent location(s) onsite.

If a site worker becomes injured or ill, Red Cross/American Heart Association recommended first aid procedures shall be followed. First aid, or other appropriate initial reactions, will be provided by the certified first aid technician that is closest to the incident.

NOTE: When protective clothing has been grossly contaminated during an incident, contaminants may be transferred to the treatment personnel or the wearer and cause injuries. Unless severe medical problems have occurred simultaneously with splashes, protective clothing should be washed off as quickly as possible and removed. If the worker can be moved, he/she will be taken to the personnel decontamination station where decontamination procedures, additional first aid or preparation for transport to the hospital will be accomplished. In the event that the victim could not be decontaminated, the rescue service provider must be notified of the situation.

If the injury to the worker is of a chemical nature, the procedures listed below are to be followed;

Eye Exposure: If contaminated solids or liquids get into the eyes, wash eyes immediately using large amounts of water while lifting the lower and upper eyelids occasionally. Wash for at least 15 minutes. Obtain medical attention.

Skin Exposure: If contaminated solids or liquids get on the skin, promptly wash the contaminated skin using soap and water. Immediately obtain medical attention.

Respiratory Exposure: Immediately move the victim to fresh air. Obtain immediate medical attention.

Ingestion Exposure: Identify what contaminant was swallowed. Follow the appropriate procedure described in the SDS and obtain medical attention as soon as possible.



NOTE: Any person who is transported to the hospital for treatment related to an exposure injury will take with them the appropriate information (i.e. SDSs) on the chemical to which he/she has been exposed. SDSs for known or suspected chemicals to exist onsite will be stored in OSC's project field office and maintained by the HSO.



MEDICAL EMERGENCY RESPONSE

REPORTING AN EMERGENCY

The HSO will immediately notify the Site Superintendent stating the points that are listed under a minor injury. However, with a major emergency the HSO must state that this is a major emergency. Concurrently the HSO must direct that 911 be called if not already done so. The Site Superintendent will react as follows:

- Call OSC's Corporate Director HS&E
- Call fire department (if necessary)
- Call police
- Call PARSONS Project Manager

PRE-PLANNING

All work will be coordinated with the PARSONS Project Manager. Arrangements for emergency services will be made prior to initiating onsite operations. Emergency response procedures will be covered as part of the project training.

EMERGENCY CHAIN OF COMMAND

In the event of an emergency, personnel will immediately notify the HSO, using available communications. The HSO will assess the situation and take appropriate action which can include ceasing all work; ordering evacuation of the work zone; requesting emergency medical treatment; and/or administering first aid.

WEATHER

In the event of severe weather (lightning, high winds, etc.), the HSO will notify project personnel. As the storm approaches, all work will stop, loose object will be secured, and site personnel will take shelter at a location pre-arranged by the HSO. After the severe weather has passed, and prior to work startup, the HSO will inspect the site for hazards.

Lightning – Any visual sighting of lightning will result in stopping outside work activities. Work will not commence until 30 minutes after the last observed strike.

High Winds – Winds higher than 30 mph will cause all exterior hoisting and lifting to cease. Crane operators have the authority to stop lifts at lower wind speeds based on their discretion.



Project Tornado Shelter (not anticipated for this project) - To be determined with initial hazard exposure assessments and site mobilization. All reasonable efforts should be made to access this location in the event of a tornado. Recognizing imminent tornado signs include seeing an unusually dark sky, possibly with some green or yellow clouds. You may hear a roaring or rumbling sound like a train, or a whistling sound like a jet. Large hail may also be falling. You may be able to see funnels, or they may be hidden by rain or hail.

Listen to the radio for tornado warnings during bad thunderstorms. If a tornado warning is issued, don't panic. Instead, listen and look. Quickly but calmly follow directions for getting to shelter. Take cover. Indoors you should go down into the basement and crouch down under the stairs, away from windows. Do not take an elevator. If you can't get to a basement, go into a closet or bathroom and pull a mattress over you or sit underneath a sturdy piece of furniture on the ground floor near the center of the building. Pull your knees up under you and protect your head with your hands. A bad place to be in a tornado is in a building with a regular freestanding roof such as a gymnasium, arena, auditorium, church or shopping mall. If you are caught in such a building, take cover under something sturdy. More than half of tornado deaths occur in mobile homes. If a tornado threatens, get out and go to a building with a good foundation, or lay down in a ditch away from vehicles and other objects.

If you are driving, get to a shelter, lie down in a ditch or seek cover up under the girders of an overpass or bridge. Stay as close to the ground as you can. Protect your head and duck flying debris. Stay away from metal and electrical equipment because lightning accompanies tornadoes.

If you have time before the tornado strikes, secure objects such as garbage cans and lawn furniture which can injure people. While most tornado damage is a result of the violent winds, most injuries and deaths actually result from flying debris.

SPILL CONTAINMENT PROCEDURES

The purpose of this section is two-fold; to prevent and control accidental discharge of polluting materials to surface soils and waterways (or groundwater); and to minimize and abate the hazards to human health and the environment from hazardous waste releases to air, soil or surface water. These procedures will be reviewed with project personnel prior to startup and thereafter as necessary during regular weekly HS&E meetings and daily briefings.

EMERGENCY NUMBERS

The names and phone numbers of emergency services and offices to be contacted in the event of a spill, or any other onsite emergency, is provided in the Contact Information portion located at the beginning of this HASP. These phone numbers will be posted by the HSO in prominent positions throughout the Project site.



DEFINITIONS

For the purposes of this plan, spoils are defined as any material that is accidentally or intentionally leaked, pumped, poured, dumped or emitted onto the ground, surface water, groundwater or air. All spilled material will be considered hazardous; cleaned up following the established spill response procedures; and reported as required.

Spills will be categorized as: Priority 1 or Priority 2.

Priority 1 Spills: Result in a significant release of contamination into the air, or onto the ground, outside the exclusion zone.

Priority 2 Spills: Result in minor spill, less than five (5) gallons and not reportable, which can be easily cleaned up.

POTENTIAL SOURCES and PREVENTATIVE MEASURES

The contracted work has potential spill sources. These include, but are not limited to:

Potential Spill Source	Preventative Measure(S)
Transporting waste material to selected on and offsite disposal facilities	In general PARSONS will be require to verify that all transportation vehicles used in support of this contract are equipped with the appropriate spill response equipment, and that the drivers have received the proper spill response training and maintain all their require federal and state licenses and certifications. Loads will be secured, tied down and covered, and transport vehicles will be checked prior to release from the site.
Re-fueling onsite equipment	OSC will prohibit the long term storing of diesel fuel. OSC will limit the amount of fuel kept onsite to only that required for weekly equipment usage.
General spill prevention requirements	Easily accessible spill response stations will be set up containing absorbent pillows, floor dry, shovels and brushes to be used in the event of a spill. The location will be known to all project personnel.

SPILL RESPONSE PROCEDURES

Initial Containment and Response

In the event of a spill, the following initial containment and response procedure must be implemented immediately.

- **Administer first aid to injured person(s).** Any employee that observes a spill will act immediately to remove and /or protect the injured person from a life-threatening situation. First aid and/or decontamination procedure will be implemented as appropriate.
- **Warn other persons and/or vehicles of the hazard.** Personnel will act to prevent any unsuspecting persons from coming in contact with the spilled materials by alerting nearby people and by obtaining assistance of other personnel who are familiar with spill control and clean up training.



- **Stop the spill at the source, if possible.** Without taking unnecessary risks, personnel will attempt to stop the spill at the source. This may involve activities such as up-righting a drum, closing a valve or temporarily sealing a hole with a plug. **OSC** personnel will not expend more than a brief effort, prior to notifying the HSO.
- **Notify the HSO.** Using available onsite communication systems, or other rapid communication procedures, the HSO will be notified of the spill, including information on the material spilled, quality, personnel injuries and immediate life-threatening hazards. The HSO will notify the PARSONS representative and emergency contacts immediately (See Emergency Contact List).

NOTE: If a flammable liquid is involved in the spill, remove all ignition sources and monitor for explosive conditions with an LEL meter during cleanup. Also, remove any surrounding materials that might chemically react with the spill materials.

Spill Containment

The HSO will make a rapid assessment of any spill at the site; apply the appropriate HS&E considerations to the use of PPE in the spill release zone; and direct primary containment measures. Depending on the nature of the spill, primary containment measures may include, but are not limited to;

- Constructing a temporary containment berm to control the horizontal flow of the spill using absorbent pads, booms, sandbags, sand and/or other inert materials
- Placing drums under the leak to collect the spilling material before it flows onto the ground
- Digging a sump, installing a polyethylene liner and diverting the spilled material to the sump
- Transferring the material from its original container to another container

Spills that occur between the project site and the offsite disposal facility will be initially contained by the driver using on-board spill response equipment.

Spill Cleanup

The HSO and PARSONS Project Manager will develop an incident-specific spill clean-up plan for Priority 1 spills that will take into consideration the associated hazards, quantity of spilled material, disposal methods and costs. The incident specific spill clean-up plan will be reviewed for acceptance by the PARSONS representative and/or other Federal, State or Local oversight personnel. Once approved, the spill clean-up plan will be implemented under the direct supervision of the OSC site superintendent.

Generally, all visually detectable spills, leaks or releases of fuel oil will be collected and cleaned up using absorbent pads, booms, sandbags, sand and/or other inert materials as practicable using the response procedures outline below.



Spill Type	Response
Waste oil on the ground	Contain the spill and excavate the visually contaminated soils. Containerize, sample for classification purposes and dispose offsite.
Building/paved surfaces	Contain the spill. Power wash the contaminated are(s). Collect and containerize the resultant wastewater for onsite treatment.
Vehicle	Power wash the vehicle. Collect, contain and treat the resultant decontamination fluids.
Heavy Equipment hydraulic fluid leak	Stop equipment immediately. Clean up spill and/or leaking fluid. Contact HSO for repair approach.
Waste from truck spilled on roadway	Contain the spilled material. Collect, containerize and remove the spilled material. Sample for waste classification purposes. Dispose of material offsite.

Post-spill Inspection

The HSO, site superintendent and PARSONS representative will jointly inspect the spill site to determine that the spill has been cleaned up to the satisfaction of all involved parties.

Reporting

In the event of a spill incident, the HSO will immediately contact the site superintendent and PARSONS Representative; initiate the emergency procedure steps that are provided in this HASP and complete a Spill Report for submittal to the PARSONS project Representative.

OSC will be responsible for reporting any Priority 1 spills immediately following the incident. A written report will be submitted within seven days after the telephone call reporting the incident. The written report will include the item spilled, quantity, identification and manifest numbers, whether the amount spilled is EPA/State/District reportable, exact location of occurrence, containment procedures used, anticipated clean-up and disposal procedures and disposal of spill residue.



HEAT/COLD STRESS

HEAT

The HSO will visually monitor the Project personnel for signs of heat overexposure. The HSO will be responsible for implementing the following program when the ambient air temperature exceeds 85 ° F (heat stress monitoring).

Symptoms

Weakness, dizziness, fainting, nausea, headaches, cool and clammy skin, profuse sweating, slurred speech, weak pulse and dilated pupils.

Procedure

Personnel who wear PPE allow their body heat to be accumulated with and elevation of the body temperature. Heat, heat exhaustion and heat stroke can be experienced which, if not remedied, can threaten health and life. A current edition of the American Red Cross Standard First Aid book or equivalent will be maintained onsite at all times so that the HSO and all personnel will be able to recognize the symptoms of heat emergency and be capable of controlling them.

When PPE is worn (especially level C) the suggested guidelines for ambient temperature and maximum wear time per excursion are as follows:

<u>Ambient Temperature (° F)</u>	<u>Maximum Wear Time Per Excursion (Minutes)</u>
Above 90	15
85 - 90	30
80 - 85	60
70 - 80	90
60 - 70	120
50 - 60	180

One method for measuring the effectiveness of employees' rest-recovery regime is by monitoring their heart as follows:

- During a 3-minute period, count the pulse rate for the last 30 seconds of the first minute, the last 30 seconds of the second minute and the last 30 seconds of the third minute.
- Double that count.
- If the recovery rate during the last 30 seconds of the first minute is at 110 beats per minute or less and the deceleration between the first, second and third minute is at least 10 beats/minute, the work recovery regime is acceptable. If the employee's rate is above the specified, longer rest period is required, and accompanied by and increased intake of fluids.



COLD

Whole body protection will be provided to all Project personnel who will have prolonged exposure to cold air. The HSO will use the equivalent chill temperature when determining the combined cooling effect of wind and low temperatures on exposed skin or when determining the proper clothing insulation requirements. The following clothing will be used as deemed necessary, by the HSO.

Appropriate underclothing (wool or other cloth)

Outer coats that repel wind and moisture

Face, head and ear coverings

Extra pairs of socks

Insulated safety boots

Wool glove liners or wind and water repellent gloves

Personnel who are working in continuous cold weather are required to warm themselves on a regular basis in the onsite trailer. Drinks will be provided to personnel to prevent dehydration. The HSO will follow the work practices and recommendations for cold stress threshold limit values as stated by the current edition of the Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices by the American Conference of Governmental Industrial Hygienists, or equivalent cold stress prevention methods.



LOGS, REPORTS and RECORDKEEPING

The following reports will be prepared and submitted as indicated below. Copies of the field logs, permits and forms required for this Project are provided in Attachment 1.

<u>Type</u>	<u>Frequency</u>
AHA Pre-plan for High Risk Work	Prior to start of work
Employee Daily Safety Brief Site Log	Daily, minimum
Air Monitoring Reports	N/A
Incident Report	As required, within 48 hours

The above logs and reports will be prepared by the HSO, or the designated representative, at the frequency noted above. Completed logs and reports will be maintained stored on site in the project field office. Copies shall be provided to the PARSONS Project Manager.

Hot Work Permit Procedures (Welding, Cutting, Open Flame Work & Sparking)

OSC will follow specific procedures to assure all hot work activities, welding, burning, cutting, sparking and other ignition source work is completed safely without incident (no fires, injuries or property damage). All hot work shall require an approved hot work permit issued by the OSC HSO prior to commencing work. The hot work permit shall define the minimum acceptable procedures and precautions that shall be taken for all phases of the hot work; prior to start of work, as well as during and after hot work is completed. A permit shall be issued daily for each specific location, type of hot work, protective measures, date, time duration and completion time. Hot work permits will be available for review by the PARSONS Project Manager. Completed and signed permits shall be returned to the HSO at the end of the workday. Copies of completed permits shall be maintained in the OSC field office for review.



Authorization of Equipment Operators

All heavy equipment operators working on site will be approved competent either through OSC's in-house program or through local labor union process. Training requirements for approval are as follows;

Heavy Equipment Operators

- Formal classroom with written qualification
- Determination of proficiency by a certified operator
- On-the-job mentoring for 40-hour minimum under a competent person

The formal classroom and mentoring may be adjusted based on an operator's previous experience. In addition, operators may need to obtain state-specific crane licenses/permits.

Crane Operators

- Formal classroom with written qualification
- Determination of proficiency by a certified operator
- On-the-job mentoring for 80-hour minimum under a competent person

The formal classroom and mentoring may be adjusted based on an operator's previous experience. In addition to the certification, operators may need to obtain state-specific licenses/permits.



ATTACHMENT I: Forms



ACTIVITY HAZARD ANALYSIS (AHA)

Activity:
Project:

Date:
Revision: 0

Work Plan Summary:

PREREQUISITES		
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS



ACTIVITY HAZARD ANALYSIS (AHA)

ACTIVITY	POTENTIAL HAZARD	PROTECTIVE METHODS AND CONTROLS
	•	• •
		•

Special Notes and Instructions: This AHA shall be reviewed by all project employees prior to commencing work and as warranted by; AHA revisions, safe work observations and improvement measures. All employees have the authority to stop work for safety concerns.



EMPLOYEE DAILY SIGN IN SHEET

DAY: _____ DATE ____/____/____

PROJECT NAME: _____

				CHECK OFF TRADE CLASSIFICATION			
	Workers Name [Print]	TIME IN	TIME OUT	OPERATOR	LABORER	BURNER	PROJECT SUPERVISION
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

DESCRIPTION OF TODAY'S WORK ACTIVITIES:



SUBCONTRACTOR DAILY SIGN IN SHEET

DAY: _____ DATE ____/____/____

PROJECT NAME: _____

Company Name: _____

				CHECK OFF TRADE CLASSIFICATION			
	Workers Name [Print]	TIME IN	TIME OUT	OPERATOR	LABORER	ASBESTOS HANDLER	PROJECT SUPERVISION
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

DESCRIPTION OF TODAY'S WORK ACTIVITIES:

CO-WORKER OBSERVATIONS

- COMPLACENT
- REPETITIVE MOTION
- POOR LIFTING POSTURE
- REACHING/STRETCHING
- TWISTING
- NEEDS ASSISTANCE
- OPERATOR NOT TRAINED
- BALANCE TRACTION
- BENDING
- LIFTING TOO MUCH

DISCUSSED WITH CO-WORKER? **Y** **N** (Circle one)

OTHER/COMMENTS: _____



SAFETY TASK ANALYSIS CARD

NAME: _____

DATE: _____

PROJECT: _____

TASK (i.e. Burning, Equipment Operating, Lifting Etc.)

DID YOU REVIEW A JSA? **Y** **N** (Circle One)

WHAT PPE IS REQUIRED?

- HARD HAT
- SAFETY SHOES
- SAFETY GLASSES
- HI-VIS VEST
- FALL PROTECTION
- RESPIRATOR

HAVE YOU INSPECTED YOUR
EQUIPMENT & PPE?

Y **N**
(Circle one)

HAVE YOU TRAINED FOR
THE TASK?

Y **N**
(Circle one)

DO YOU BELIEVE ALL HAZARDS HAVE
BEEN ADEQUATELY ADDRESSED?

Y **N**
(Circle one)



Daily Equipment Inspection

Contractor: _____

Checked By: _____

Type of Equipment: _____

Date: _____

Items Inspected/Maintained Daily	Mn	Tu	Wd	Th	Fri	St	Sn	Remarks/Service
As equipped check condition of tires or tracks								
Check all hoses/hydraulics/air								
Grease all fittings as required								
Check fluids(coolant, oil/hydraulic)								
Check brake function/steering and linkage								
Check for physical damage (welds, covers/guards)								
Check emergency brakes/stops/lockouts								
Check horn & backup alarm								
Safety belt (seated equip.)/tie-off point(man lifts)								
Check all windows and mirrors (if equipped)								
Check warning decals (legible in place)								
Equipment Warm-up (check instruments/indicator lights)								
Check control levers for proper operation								
Is Maintenance schedule current (see next scheduled maintenance hours)								

NOTES:



Powered Aerial Lift Inspection Form (Inspect Applicable Items Per Type of Lift)

CONTRACTOR							
RENTAL COMPANY							
JOBSITE							
INSPECTED BY (PRINT NAME)							
MAKE (Fuel Type) /SERIAL OR UNIT No.							
DATE (S) \angle WEEK ENDING							
ITEMS (= SATISFACTORY, X = NEEDS ATTENTION, NA = Not Applicable for type of lift)	MON	TUE	WED	THU	FRI	SAT	SUN
Brakes							
Operating Controls Labeled							
Operating and Emergency Controls							
Fuel System							
Guards and Handrails							
Entrance Gate (Safety Chain, Bar or Gate)							
Batteries							
Load Charts & Labels							
Muffler/Exhaust Pipes							
Operating Manual							
Engineered Tie Off Points							
Tires, Wheels or Tracks, Outriggers							
Cylinders, Lines, Hoses, Wires (air, fluid leaks, electrical wires cables intact)							
Loose, Missing/Damaged Parts, Physical Condition							
Air System Leaks Signs of Damage							

REMARKS:



Daily Safety Brief

Focused Safety Topic – _____
Attach focused safety topic material or use back of page for additional space "See Attached or Reverse" →

Summary of today's activities, identified hazards and protective measures.

ACTIVITIES: _____

EQUIPMENT REQUIRED: _____

HAZARDS (circle, highlight or list): Traffic Struck by Caught Between/Pinched Head Eye Hand/Arm/Leg/Foot
Slips/Trips/Falls Overhead/Drop Collapse/Cave-In Stored Energy Electrical/Shock Impalement Fire Weather Heat
Cold Asphyxiation CO Lung Irritants Dust Asbestos LOPC Chemical PCB CO VOC's Gas Lightning Noise
Vermin/Pests Rollover Other: _____

PROTECTIVE MEASURES (circle, highlight or list): See Hot Work Permit See Confined Space Permit See AHA
STAC MSDS Guards Barricades GFCI PPE Signs Spotter Alarms Warning Line Life Line Net Seat Belts ROP
Shoring/Bracing Inspect "Auth. Stop Work" Fire Ext. Water/Misting Controlled Work Zone Ventilation Add Lighting
Cones Covers De-energize Lockout/Tagout Air Gap Heat/Cold Stress Monitoring, Air Monitoring, Other/Remarks:

APPROVED PPE REQUIRED (circle, highlight or list): Hardhat Safety Glasses Foot Protection Gloves
High Visibility Vest or Equivalent High Visibility Clothing Hearing Protection Face Shield Mono-Goggles Respirator
Special Protective Clothing (Burning Jacket & Shield, Gloves, Boots) Personal Fall Arrest/Restraint System Welding Hood
Life Vest Metatarsals, Other: _____

Participants Print Name	Participants Print Name	Participants Print Name

Safety Talk Give by: _____ DATE: _____

Project/Location: _____



INCIDENT REPORT

Document Revision 6/16/15

GENERAL INFORMATION

Project Name: _____

Project Address: _____

Site Manager: _____ Phone No. _____ Work Shift: _____

Date of Incident: _____ Time: _____

Type of Incident: Injury Property Damage Spill Fire Other: _____

AFFECTED EMPLOYEE OR PROPERTY OWNER INFORMATION

Employee/Owner Name: _____

Date of Birth: _____ Male/Female: _____

Address: _____

Department: _____ Years/date Employed: _____

MEDICAL INFORMATION (NA If Not Applicable)

Name and Address of Doctor: _____

Hospital and Phone Number: _____

Substance Abuse Testing: As a result of this incident, was this employee?

Substance Abuse Tested? Yes No Alcohol Tested? Yes No

Was this a First Aid only incident? Yes No

Has the Employee returned to work? Yes No If Yes, Date: _____

INCIDENT DESCRIPTION (Facts and Findings)

What activity or task was performed at time of incident? (Please be specific, what was the employee doing, identify equipment or material the employee was using.)



JOB SAFETY INSPECTION AND AUDIT

LOCATION/PROJECT:

Date:

Audit and Inspection Report by:

OSC Summary of Findings and Improvement Measures:



JOB SAFETY INSPECTION AND AUDIT

DESCRIPTION	YES	NO	N/A	COMMENTS/ACTIONS
SAFETY ADMINISTRATION, POSTINGS, FIRST AID & EMG RESPONSE				
1. OSHA 300A form posted between February 1 and April 30				
2. LABOR POSTINGS (ALL IN ONE FEDERAL & STATE)				
3. Emergency Phone number for the nearest medical center posted				
4. Safety Briefs/Talks & AHA's current and up to date.				
5. Work areas properly delineated (barricaded) and hazard warning signs				
6. Appropriate First Aid Supplies and Trained Personal Available				
7. Training Documentation Complete (40 Hour, OSC BASIC 10/OSHA 10, NYS Asbestos Hard Card Supervisors/Handlers)				
HOUSEKEEPING				
1. Work area neat, debris picked up and free of trip hazards				
2. Projection and impalement hazards eliminated/protected (removed,				
3. Waste containers provided and used				
4. Passageways and walkways clear				
5. Cords and leads off of the floor				
6. Spill Kit Available & Stocked				
FIRE PREVENTION				
1. Adequate firefighting equipment (hoses, extinguishers, fire blanket)				Need additional fire extinguishers (Minimum 2A Rating).
2. Appropriate Flammable and Combustible Storage				
3. "No Smoking" signs posted and enforced near flammables				
ELECTRICAL AND CONTROL OF HAZARDOUS ENERGY				
1. Extension cords with bare wires or missing ground prongs taken out of				
2. Ground fault circuit interrupters being used				
3. Terminal boxes accessible and equipped with required covers				
4. Temporary Lighting (Guarded, Covered, No Exposed Sockets)				Corrected, light guard/cage closed, open sockets plugged.
5. Equipment wiring				Corrected, Romex connector for hot water tank missing.
6. Proper Hazardous Energy Controls (LOTO, Air Gapping, Blanks)				
HAND, POWER & POWDER-ACTUATED TOOLS				
1. Hand tools inspected regularly				
2. Guards in place on equipment				
3. Right tool being used for job at hand				



JOB SAFETY INSPECTION AND AUDIT

DESCRIPTION	YES	NO	N/A	COMMENTS/ACTIONS
4. Operators of powder-actuated tools are licensed				
FALL PROTECTION				
1. Safety guard rails properly installed and inspected.				
2. Employees exposed to fall hazards are protected (PFAS 100% Tie-off Guards, Covers, Nets)				Observed Burner torch cutting duct work from step ladder properly tied off. Observed abatement worker installing hard barricade on 2 nd floor
3. Employees below protected from falling objects (Toe Boards or Guards)				Area barricaded from entry below with spotter.
LADDERS				
1. Straight Ladders extended at least 36 inches above the landing, proper				
2. Ladders inspected & properly use (secured, proper angel, type)				
3. Ladders with split or missing rungs taken out of service (tagged out)				
4. Stepladders used in fully open position				
SCAFFOLDING				
1. All scaffolding inspected daily by a competent person				
2. Erected on sound rigid footing				
3. Tied to structure as required				
4. Guardrails, intermediate rails, toe boards and screens in place				
5. Planking is sound and sturdy				
6. Baseplates and mudsills in place				
7. Proper access provided				
8. Employees below protected from falling objects				
FLOOR & WALL OPENINGS				
1. All floor or deck openings are planked over or barricaded				
2. Perimeter protection is in place				
3. Deck planks are secured				
4. Materials stored away from edge				
TRENCHES, EXCAVATION & SHORING				
1. Competent person on hand				
2. Excavation proper protective system (shored or sloped/benched)				
3. Materials and spoil piles are stored at least two feet from trench				
4. Ladders provided every 25 feet in trench > 4 ft depth				
5. Equipment safe distance from edge of trench or excavation				



JOB SAFETY INSPECTION AND AUDIT

DESCRIPTION	YES	NO	N/A	COMMENTS/ACTIONS
6. Warning system in place if operator cannot see edge of trench				
MATERIAL HANDLING & HAZARD COMMUNICATION				
1. Materials are properly stored or stacked				
2. Employees are using proper lifting methods				
3. MSDS/SDS Available/Proper Containers & Labels Noted				
4. Chemical Products properly used and stored per MSDS/SDS				
WELDING & BURNING				
1. Gas cylinders stored upright, securely, and in good condition				
2. Proper separation (20 ft) between fuels & oxygen or fire barrier				
3. Burning/welding/cutting goggles or shields are used				
4. Fire extinguishers are nearby (< 75ft)				
5. Equipment & Hoses are in good condition. Flash arrestor equipped.				
RIGGING, HOISTING/LIFTING & PLACING ACTIVITIES (HOISTS, CHAINFALLS, CRANES & FORK TRUCKS)				
1. Proper setup of lifting/hoisting equipment, controlled work zone established, swing radius barricaded & spotter provided				Observed proper lifting of metal debris box by rough terrain fork truck to upper level for load out of copper wire.
2. Operator familiar with load chart (lifting capacity, weight of load <75% Max capacity of lifting/hoisting equipment & rigging components)				
3. Proper communication (radio communication, hand signals)				
4. Equipment & rigging inspected. Hoisting/Rigging by competent person.				
5. Employees kept from under suspended loads				
6. Chains and slings inspected (ANSI rated & properly tagged).				
7. Pick plan available and reviewed with crew				See AHA
8. Competent operator, rigger and flagman				
POWERED EQUIPMENT (Earth Moving, Fork Trucks, Aerial Lifts, ATV's)				
1. Equipment Physical Condition, daily inspection current with equipment (Guards, Lights, Glass/Cage, Tires/Tracks, Lights, Frame)				
2. Operational and Safety Controls Functional				
3. Proper Operation and Use Observed				

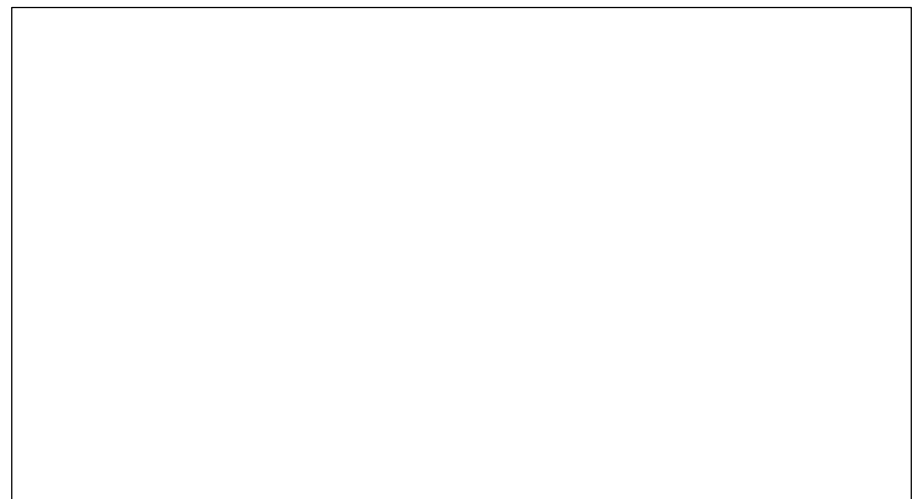


JOB SAFETY INSPECTION AND AUDIT

DESCRIPTION	YES	NO	N/A	COMMENTS/ACTIONS
4. Operators Manual Available and Inspection Check List Available with Equipment				
PERSONAL PROTECTIVE EQUIPMENT				
1. Proper Head Protection used given task (ANSI Rated Hard Hats, Properly Worn)				
2. Proper Eye Protection given task (ANSI Rated Eye and Face Protection)				
3. Required Respirators given task (Proper Use, Care, Training & Medical)				
4. Proper Hearing protection is being worn as required (NR Rating)				
5. High-visibility vests or equivalent high vis clothing are being worn				
6. Proper Hand, Foot, Leg, face & Skin Protection given task (Gloves, Safety Boots, Chaps, Metatarsals, Clothing - FR, Chemical)				
ABATEMENT				
1. Decontamination unit properly installed and functioning (Shower, Filtration, Dirty Room, Clean Room & Waste Out).				
2. Proper negative air established, # units, monometer, backup units, temporary power, lighting, GFCI, exhaust, barricades & waste storage				
3. Containment properly installed (air locks, EMG egress, hazard signs)				
4. Proper abatement methods observed (PPE, Wet Methods & Handling)				
5. Entry exit log in use and properly completed				
6. Supervisors log and inspections current				

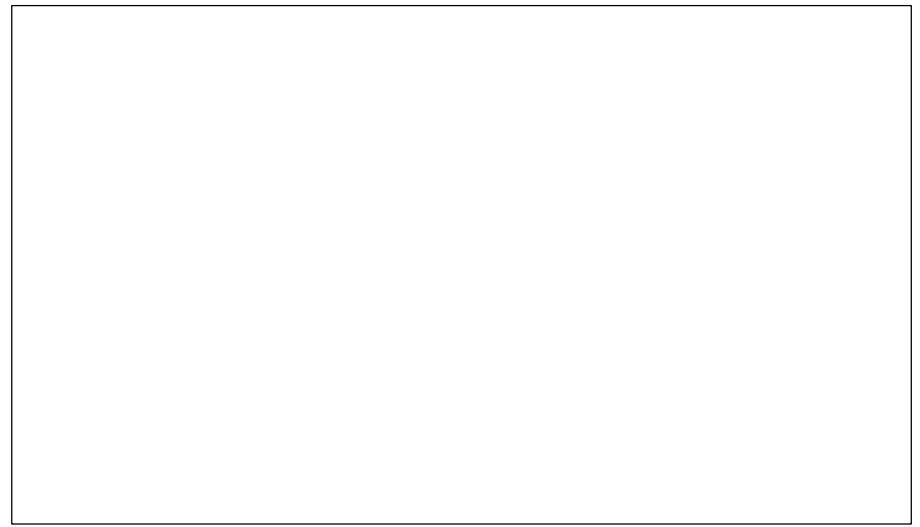
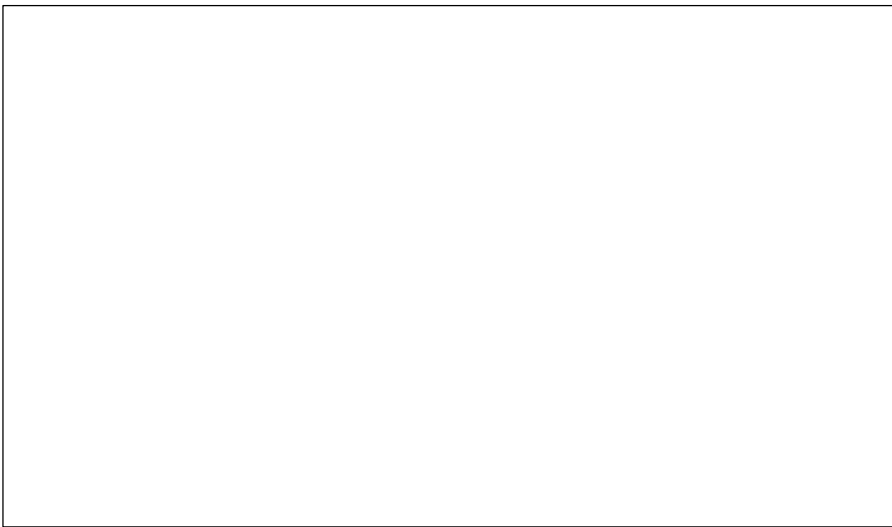
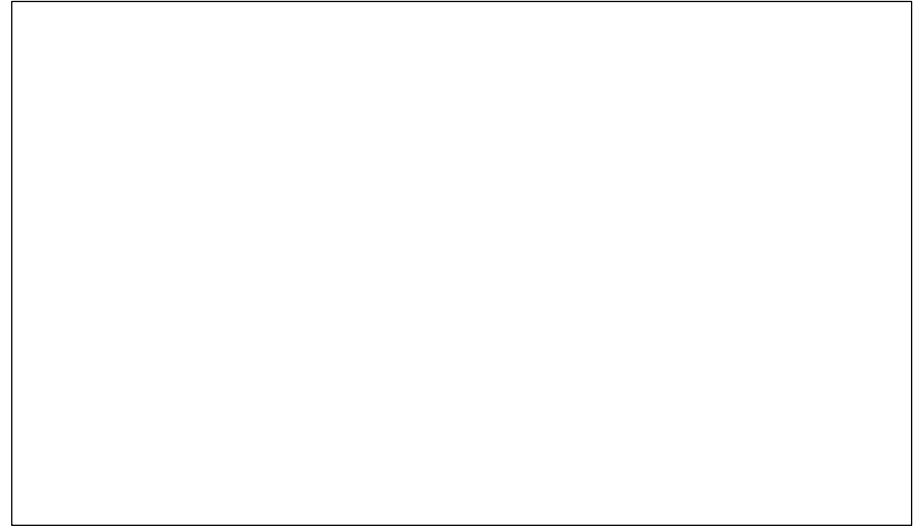
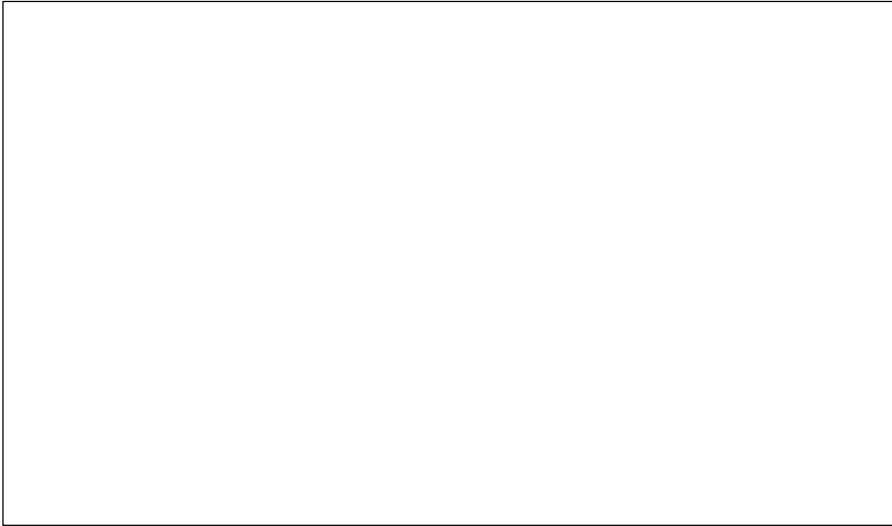


Select Site Photos





Select Site Photos Continued



ATTACHMENT II RESERVED: Site-Specific Activity Hazard Analysis

(To be revised and re-inserted as needed)



ACTIVITY HAZARD ANALYSIS (AHA)

Activity: Asbestos removal
Project: Tonawanda Coke Tank Demolition

Date:
Revision:

Work Plan Summary:

PREREQUISITES

EQUIPMENT TO BE USED/SITE ENTRY	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<p>THIS AHA TO BE PREPARED BY ABATEMENT CONTRACTOR</p>		

ACTIVITY	POTENTIAL HAZARD	PROTECTIVE METHODS AND CONTROLS

Special Notes and Instructions: This AHA shall be reviewed by all project employees prior to commencing work and as warranted by; AHA revisions, safe work observations and improvement measures. All employees have the authority to stop work for safety concerns.

AHA Review and Training Acknowledgement:



ACTIVITY HAZARD ANALYSIS (AHA)

Activity: Tank de-watering & contents removal
Project: Tonawanda Coke

Date: August 2019
Revision: 0

Work Plan Summary: Pump water from tank, remove solid contents, clean for demolition

PREREQUISITES		
EQUIPMENT TOOLS TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Gas and diesel water pumps 2” and 6” Hoses 2” and 6” Excavator with bucket Power washer PPE: Hard hat, coated coveralls, safety shoes, hearing protection, leather and nitrile gloves, high visibility clothing, face shield and goggles 4-gas PID meter	Daily per manufacturer Daily Daily per manufacturer Daily per manufacturer Daily Calibrated per manufacturer	Only trained personnel familiar with the pumps, excavator competent person, and power washer will be permitted to operate the equipment.



ACTIVITY HAZARD ANALYSIS (AHA)

ACTIVITY/STEP	POTENTIAL HAZARD	PROTECTIVE AND CONTROL MEASURES
Hooking up hoses, draining hoses, and pumping water	<ul style="list-style-type: none"> • Contact with contaminated water • Fire • Leaks • Hearing damage • Eye exposure • Inhalation • Slips Trip and Falls • Strains and sprains • Pinch points 	<ul style="list-style-type: none"> • Wear modified Level D PPE and protective gloves. Wear face shield, nitrile gloves, and poly coated coveralls • Turn off pumps and allow cooling before refueling. • Secure all hose connections to prevent leaks and prevent exposure/spills Visually inspect all hoses and fittings before starting the pump. Check caps and tanks for cracks and leaks. • Wear hearing protection • Eye wash/shower in place for emergency use • Monitor VOCs with PID • Keep walkways clear • Use buddy system when moving objects over 50# • Good hand and body placement • Keep out of line of fire
Remove solid tank contents	<ul style="list-style-type: none"> • Struck by 	<ul style="list-style-type: none"> • Do not approach excavator without eye contact of operator. Stay out of swing radius/line of fire. Delineate unsafe work zone around operation
Tank cleaning with power washer (in situ or on decon pad TBD)	<ul style="list-style-type: none"> • Slips, trips, falls • Pinch points • Laceration • Carbon monoxide exposure • Fire 	<ul style="list-style-type: none"> • PPE: Coated coveralls, goggles, face shield, gloves, hearing protection • Personnel to remain at least 25 feet away from the washer when in use. • Never point wand at skin. Keep away from nozzle. DANGEROUS • Power washer to be located downwind of tank • Fire extinguisher in area of power washer at all times.



ACTIVITY HAZARD ANALYSIS (AHA)

ACTIVITY/STEP	POTENTIAL HAZARD	PROTECTIVE AND CONTROL MEASURES
Refueling of equipment	<ul style="list-style-type: none">• Fire• Spills• Fire	<ul style="list-style-type: none">• Shutdown equipment during refueling.• Allow equipment to cool down before refueling.• Refuel from OSHA-compliant portable fuel container.• Personnel performing the refueling operation will exercise caution to avoid spillage. Place pads on the ground to prevent contact from drips and spills while refiling• Spill kits will be kept near the refueling operations.• Prior to fueling, personnel shall bond the equipment to fueling container.• A 10 lb. fire extinguisher will be in the immediate area during refueling operations.



ACTIVITY HAZARD ANALYSIS (AHA)
Heavy Equipment Operation

Activity: Heavy Equipment Operation & Dirt Moving
Project: Tonawanda Coke Tank Demo

Date: Dec 2018
Revision: 0

PREREQUISITES		
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Heavy Equipment: Excavators, Loaders, Dozers, Skid Steer, Rollers, etc. 5 – 20 lb. ABC Dry Chemical Fire Extinguishers.	Daily heavy equipment inspection prior to operation. Complete and turn in OSC inspection form to site superintendent. Deficiencies must be corrected prior to operation. Inspect all PPE equipment and extinguishers prior to operation/work.	Trained employees per the site HASP. OSC authorized and competent designated equipment operators
WORK ACTIVITY	POTENTIAL HAZARD	PROTECTIVE AND CONTROL MEASURES
Equipment operations; <ul style="list-style-type: none"> • Material handling • Grading • Rolling/compacting, • Excavating, moving & loading • Hauling 	<ul style="list-style-type: none"> • Struck by • Roll over • Crush, • Fire/burn • Caught between 	<ul style="list-style-type: none"> • Only OSC authorized and qualified personnel shall operate equipment. • Complete and submit daily inspections on the “Daily Equipment Inspection Checklist.” • Back up alarms must be functional. • Equipment in need of repair, defective, or unsafe in any way, shall be taken out of service. Equipment shall not be placed back into service until repaired and inspected by competent person/operator. • UFPO clearance and mark out of underground utilities (see below). • Weather assessment for acceptable working conditions, no high winds, excessive rain, snow, ice or lighting/thunder. • Equipment, setup and operation and inspection by company trained and authorized operator. Step and walk with purpose, watch where you are placing your feet (pick them up and set them down). Use machine grips, rails and footsteps when accessing and leaving equipment (3 points of contact). • Ground personnel shall be kept clear of operating equipment and make eye contact with operator before entering line-of-fire.



ACTIVITY HAZARD ANALYSIS (AHA)

Heavy Equipment Operation

		<ul style="list-style-type: none"> • Spotters must be used when moving into blind-spots or when overhead obstructions are present (see OSC Spotter Policy). • Personnel shall not pass under operating equipment attachments at any time, whether loaded or not. • Loads shall be lowered, and power shut off when equipment is left unattended. • Only stable, safely arranged loads, which do not exceed the equipment capacity, shall be handled.
	<ul style="list-style-type: none"> • Collision with personnel/property 	<ul style="list-style-type: none"> • The operator shall slow down and sound the horn in areas of reduced visibility. Safe speeds shall be maintained. Speed shall be reduced in high traffic areas and across rough roadways.
	<ul style="list-style-type: none"> • Driving off elevated surface 	<ul style="list-style-type: none"> • A safe distance shall be maintained from any edge such as berms, platforms or loading docks. If not visible to the operator, a spotter shall be used. • Seatbelts shall be worn when equipment is in operation.
Operation and refueling.	<ul style="list-style-type: none"> • Fire • Splash/eye contact 	<ul style="list-style-type: none"> • Fire extinguishers shall be mounted on all powered mobile equipment as well as 20 lb ABC dry chemical in refueling area, w/ spill kit. • Splash shield shall be worn when handling liquid fuels. • Equipment shall be shut-off prior to refueling. • Flammable fuel containers must be grounded and bonded before fueling. • No smoking or spark sources shall be allowed near refueling or battery maintenance areas.
	<ul style="list-style-type: none"> • Electric shock 	<ul style="list-style-type: none"> • No work may be performed within 20 ft of energized electrical lines. • Contact OSC superintendent if any work is to be conducted within 20ft of an energized electrical source.



ACTIVITY HAZARD ANALYSIS (AHA)
Heavy Equipment Operation

Hand shoveling to uncover buried lines

- Slip, trip fall
- Struck by
- Strain
- Electrocutation
- Fire, burn

- Use care during foot travel, and clear the area of slip and trip hazards, cover holes, make use of barricades, and guard rails as appropriate
- Use good body mechanics when lifting and manual material handling; keep back straight, lift with legs, don't twist. Observe lifting limits & keep dead lifts < 40 lbs., get help when you need it, use the equipment.
- When hand auger is required, use proper hand auguring techniques – do not over-force any auguring – auger using a smooth and easy pace – avoid contacting subsurface materials when not wearing protective clothing – leather work gloves with hand auger – nitrile gloves when touching potentially contaminated materials
- UFPO identified lines shall be carefully hand shoveled (remove material in flat and angled layers without straight down picking to damage buried line, excavator digging is prohibited in these areas (UFPO mark outs & flagging/buried line tape).



**ACTIVITY HAZARD ANALYSIS (AHA)
Enhanced Equipment Decontamination**

Date: August, 2019
Revision No. 2

Activity: Decontamination of Equipment

Work Plan Summary:

The need for this extended procedure shall be determined by the superintendent in conjunction with the project manager and client representative. Setup up controlled work zone for decontamination work area and containment system for collecting wash and rinse from decontamination process. The following double wash rinse process shall be followed:

1. First Wash – cover with (wipe, brush or spray) phosphate detergent and scrub with brush and pad, 1 minute per square foot
2. First Clean water rinse - 1 gallon per square foot
3. Second wash – cover with hexane solvent (small hand spray bottle or brush), scrub or brush, 1 minute per square foot
4. Second rinse – wet entire surface with clean hexane solvent for 1 minute.

PREREQUISITES

EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Excavator w/attachments Various hand tools (shovels, rakes) ABS Dry Chemical Fire Extinguisher PPE – ANSI approved hard hat, safety glasses and face protection (face shield). Disposable poly coated tyvek coverall or equivalent disposable protective clothing. Hard toed rubber safety boots or equivalent protective footwear, impermeable cut resistant gloves or equivalent (Kevlar or Nitrile). Hearing protection as needed, Eye wash and washing station.	Work area inspection and work process inspection by competent person. Replace any defective equipment from use. Inspect hand tools, corded tools, GFCI, PPE, and extinguisher daily prior to use. Replace any defective PPE, extinguishers and tools. Daily equipment inspection (per MFG guidelines) prior to use by authorized and trained operator. Repair and or replace any defective equipment prior to use.	Trained operator and laborer. Site required training per SHSP. OSHA applicable training requirements (1926.20 - 1926.21); hazard awareness training, medical clearance, fit test/training for respirator use, and AHA review prior to start of the job. Use of detergent solvent.

WORK ACTIVITY	POTENTIAL HAZARD	PROTECTIVE AND CONTROL MEASURES
Establish controlled work zone for decontamination work and install collection system.	Slip, trip, fall, struck by, pinched, traffic, heat stress, cold stress, fire, burn, strain.	<ul style="list-style-type: none"> • Trained/authorized employees and site required modified level D PPE as defined above. Inspect equipment and tools before each use as required. Traffic spotter provided during loading, unloading operations and setup (back alarm equipped vehicles). • Fire extinguisher in immediate work area. Heat stress, drink before you get thirsty, stay well hydrated, heat stress monitoring per OSC HASP. Cold stress (< 30 degrees), dress in layers, recognize early symptoms – blue discolored tone, lips fingernails, shivering, and lethargic behavior. Take frequent breaks out of the cold and seek warm shelter. Maintain the buddy system, no one works alone, always working within line of sight of supervisor, all employees have stop work authority. Observe good body mechanics when lifting get help when needed, use equipment. Keep work area clear and uncluttered, free of debris and trip hazards.



**ACTIVITY HAZARD ANALYSIS (AHA)
Enhanced Equipment Decontamination**

Date: August, 2019
Revision No. 2

Activity: Decontamination of Equipment

WORK ACTIVITY	POTENTIAL HAZARD	PROTECTIVE AND CONTROL MEASURES
Washing and rinsing 1 st and 2 nd .	Slip, trip, fall, struck by, pinched, traffic, heat stress, cold stress, chemical, eye, skin, hazards,	<ul style="list-style-type: none">• Trained/authorized employees and site required modified level D PPE as defined above. Inspect equipment and tools before each use as required. Product use per SDS (see attached)• All decontamination to be done in prepared location (equipment decon pad or waste decon pad)
Special Notes and Instructions: This AHA shall be reviewed by all project employees prior to commencing work and as warranted by; AHA revisions, safe work observations and improvement measures. All employees have the authority to stop work for safety concerns. Any questions concerning the content of this AHA contact OSC Safety, Donald Dustin 716-560-7542.		

Field Notes:



**ACTIVITY HAZARD ANALYSIS (AHA)
Enhanced Equipment Decontamination**

Activity: Decontamination of Equipment

Date: August, 2019
Revision No. 2

AHA Review and Training Acknowledgement:

Employees print name, sign and date in spaces provided below.

PRINT NAME	SIGNATURE	DATE



ACTIVITY HAZARD ANALYSIS (AHA)

Activity: General Procedures & Mobilization
Project: Tonawanda Coke Tank Demolition

Date: August 2019
Revision: 1

Work Plan Summary: Standard procedures & administrative controls

PREREQUISITES		
EQUIPMENT TO BE USED/SITE ENTRY	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<p>Project specific equipment: excavators and/or loaders, skid steers, forklifts, dozers, aerial lift</p> <p>PPE: Hard hat, safety glasses w/side shield, safety shoes with boot covers or rubber over boots in wet conditions, gloves, including barrier/nitrile, hearing protection, splash shield as needed, coated disposable coveralls</p>	<p>All equipment shall be inspected before use per manufacturer's specification. Inspections shall be documented and maintained on site.</p> <p>PPE shall be inspected daily.</p>	<p>Any equipment operator must be OSC certified competent for each specific class of equipment.</p> <p>Per OSC HASP</p>



ACTIVITY HAZARD ANALYSIS (AHA)

ACTIVITY	POTENTIAL HAZARD	PROTECTIVE METHODS AND CONTROLS
General Construction Related Activities (see task specific AHA for detailed procedures)	<ul style="list-style-type: none"> Lack of training 	<ul style="list-style-type: none"> All site workers will have completed OSHA 40-hour HAZWOPER training with yearly updates. Worker will be trained prior to performing new activities. OSC will hold daily tailgate safety meetings prior to starting each shift. New employees will be assigned a mentor per OSC Short Service Employee Program
	Stress/strain when lifting	<ul style="list-style-type: none"> Workers will be instructed in safe lifting techniques (i.e., back straight, bend at knees, load close to body, lift smoothly, and do not twist. Workers will utilize material handling devices such as forklifts, come-along, etc. Two workers will be required for manual lifts of over 50 pounds. Workers are encouraged to get help with any lift that appears excessive or awkward. Split heavy loads into smaller loads whenever possible. Make sure the path of travel is clear prior to the lift.
	Refueling of equipment	<ul style="list-style-type: none"> Shutdown equipment during refueling. Allow equipment to cool down before refueling. Refuel from OSHA-compliant portable fuel container. Personnel performing the refueling operation will exercise caution to avoid spillage. Spill kits will be kept near the refueling operations. A 10 lb. (minimum) fire extinguisher will be located in the immediate area during refueling operations.
	Injuries associated with hand tools	<ul style="list-style-type: none"> Tools shall be carried in a safe and proper manner. Tools shall not be carried up a ladder by hand; tools should be raised or lowered in a tool bag. Defective tools shall be tagged immediately and removed from service. Tools shall be used correctly and only for their intended purpose. Hand tools to be inspected for mushroomed heads, broken/cracked handles, or loose heads prior to use. Clean tools after every use when used in the regulated area to minimize contamination
General Construction Related Activities (see task specific AHA for detailed procedures)	Injuries associated with power tools	<ul style="list-style-type: none"> Worker will inspect tools and electrical cords before use. Defective tools will be tagged and removed from service. A GFCI will protect all electrical cords and tools. Portable generators of 5kW or larger, if used, will be grounded. Electrical tools shall be unplugged when changing attachments or performing maintenance. Electric tools with missing ground prongs, cut or frayed cords shall be removed from service. Electric tools used in highly conductive locations, such as where employees may contact water, shall be approved for use in these locations. Pneumatic tools shall be disconnected, and air pressure released before repairs are made. Extension cords shall be inspected prior to and after use. Damaged cords will be tagged and taken out of service.



ACTIVITY HAZARD ANALYSIS (AHA)

Heavy equipment operations	<ul style="list-style-type: none">• Operators are to know where the operations manual is kept for each piece of machinery they will use (typically in job trailer).• Operators will inspect machinery before use and complete the Daily Inspection checklist.• All operators will be certified for equipment operation.• Use three-point contact when climbing onto equipment.• All heavy equipment will be equipped with a functional backup alarm.• Operators will be instructed to maintain visual contact with personnel working in the immediate equipment area.• Passengers will be prohibited from equipment.• Seat belts shall be used in accordance with manufacturer's specifications.• Fire extinguishers will be mounted on all equipment.• Hearing protection will be worn by equipment operators when working in open cab equipment, or when doors/windows are open.
Chemical exposure	<ul style="list-style-type: none">• SDSs are required for all chemicals brought to the site.• The SDS book will be kept at the field office trailer and will be available to all employees.
Airborne dust exposure	<ul style="list-style-type: none">• OSC will use wet methods when activities occur to prevent airborne dust from being generated or when visible dust has been generated. If dust become visible, workers will notify the supervisor.• Workers will work-up wind whenever intrusive activities occur to minimize exposure (body or inhalation) to airborne dust.• Workers are to follow good hygiene procedures to prevent skin exposure and to prevent incidental ingestion of any contaminated materials.
Ingestion exposure	<ul style="list-style-type: none">• Wear barrier gloves (nitrile or latex) when working with contaminated soil, hardware, equipment, or water.• Replace torn or damaged gloves immediately. Use proper technique when removing contaminated gloves• Always wash face and hands before eating, drinking or touching the mouth area.
Medical emergencies	<ul style="list-style-type: none">• Maintain at least one person on each shift who has first aid, cardiopulmonary resuscitation and bloodborne pathogens training.• Ensure radio or phone communications capabilities area available to summon emergency response or report spills/ releases.• Ensure all personnel are familiar with emergency procedures and egress routes.• For emergency call 911

Special Notes and Instructions: This AHA shall be reviewed by all project employees prior to commencing work and as warranted by; AHA revisions, safe work observations and improvement measures. All employees have the authority to stop work for safety concerns.



ACTIVITY HAZARD ANALYSIS (AHA)

Activity: Install sediment controls
Project: Tonawanda Coke Tank Demolition

Date: August 2019
Revision: 1

Work Plan Summary: Install project erosion and sediment controls using filter sock

PREREQUISITES

EQUIPMENT TO BE USED/SITE ENTRY	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Filter sock material in 100-foot roll Skid steer PPE: Level D	NA Inspected before use per manufacturer's specification. PPE shall be inspected daily.	NA Equipment operator must be OSC certified competent for each specific class of equipment. Per OSC HASP

ACTIVITY	POTENTIAL HAZARD	PROTECTIVE METHODS AND CONTROLS
Handling filter sock	Stress/strain when lifting Slips, trips, falls Struck by	<ul style="list-style-type: none"> • Use safe lifting techniques (i.e., back straight, bend at knees, load close to body). Two for manual lifts of over 50 pounds, make sure the path of travel is clear prior to the lift. • Check work area for hazards and unsmooth walking surface. Avoid distractions. • Maintain eye contact and communication with skid steer operator. Use spotter when operator's view is blocked. Stay out of line-of-fire

Special Notes and Instructions: This AHA shall be reviewed by all project employees prior to commencing work and as warranted by; AHA revisions, safe work observations and improvement measures. All employees have the authority to stop work for safety concerns.



ACTIVITY HAZARD ANALYSIS
Sediment Control

ACTIVITY: Sediment control
DATE: 8/15/19

Date: August 2019
Revision: 0

WORK PLAN SUMMARY: Trench, install, and back fill silt fence, install filter sock, put in stakes

PREREQUISITES		
EQUIPMENT TOOLS TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Ditchwitch trencher Mini excavator Hand tools Skid steer Mapping	OSC pre-use inspection OSC pre-use inspection Visual inspection OSC pre-use inspection	OSC designated competency OSC designated competency OSC designated competency



ACTIVITY HAZARD ANALYSIS
Sediment Control

ACTIVITY/STEP	POTENTIAL HAZARD	PROTECTIVE AND CONTROL MEASURES
Haul material to specific location on site with skid steer	<ul style="list-style-type: none"> • Pinch points • Struck by / Line of Fire • Slips trips and falls • Loss of elevated load / Rollover • Injury due to lack of training • Equipment noise • Equipment fires • Blind spot injuries • Struck by from excavator • Swing radius • Inclement weather 	<ul style="list-style-type: none"> • Communication between Ground crew and equipment operator • Body placement / know your surroundings / Eye Contact with operator - bucket or blade is locked out and secured. • Seatbelts to be used to manufacturers specifications at all time. No cell phone use or texting at any time while operating equipment. • 3 points of contact to enter - exit equipment • Maintain lowest possible lift prior to travel • OSC operators to be certified / evaluated prior to equipment operation – Certs will be submitted to Honeywell / Jacobs • Hearing protection will be worn by operators in open cab equipment or when doors and windows are propped in the open position • Fire Extinguishers to be equipped and certified in all equipment with monthly Inspections. Additional ABC 20 lb. fire Extinguisher shall be placed near the work area. Monthly inspections to be completed and reviewed • Eye contact and communication with equipment operator and utilize equipment spotter when necessary. Functional backup alert system on all equipment required • Manage non-essential / untrained personnel from entering the swing radius of any moving equipment • Refer to AHA General



ACTIVITY HAZARD ANALYSIS
Sediment Control

ACTIVITY/STEP	POTENTIAL HAZARD	PROTECTIVE AND CONTROL MEASURES
Trenching, digging, hand clearing surfaces for silt fence	<ul style="list-style-type: none"> • Buried utilities • Equipment failure • Property damage • Obstacles • Subsurface structures, findings • Line of fire • Swing radius • Uneven terrain • Trip hazards • Open trench • Pedestrians • Communication 	<ul style="list-style-type: none"> • ALL PARTIES MUST REVIEW AND UNDERSTAND UTILITY MARK OUT REPORT BEFORE ANY SUBSURFACE WORK BEGANS • Daily Inspection performed before use – while in operation operators will monitor, gauges, and look for indications of failure to hydraulic hoses and guards • Stay clear of all heavy equipment in your work area. If you can relocate do so, until work is complete • Use spotters when the operator’s visibility is impaired, or equipment is approaching congested areas or blind corners. As needed. • Review the Blood hound utility information – if the trencher or mini E • Keep clear of moving parts on equipment stay clear of chance of flying debris or line of fire • Do not stand directly in front of the trencher or either side follow all operating • If the chain needs to be cleaned with a shovel shut off the trencher and lock it out • Keep 20 ft away from any part of the equipment • Plan your path, make sure you have proper footing before carrying or walking in uncleared areas • Pick up your feet walk with purpose, remove any trip hazards needed to be safe • Secure your work area with a delineated barrier or spotter to keep unauthorized personnel out • Personnel not covered under the AHA are not permitted in the work area • Use your radios, keep everyone aware of upcoming hazards you have prepared for during your task.
Installing silt fence	<ul style="list-style-type: none"> • Splinters • Pinch points • Sprains and strains • Ergonomics • Trip hazards • punctures • Tight/remote areas • Damaged materials • Biologicals 	<ul style="list-style-type: none"> • Wear leather gloves while handling wooden stakes • Watch hand placement when swinging hammer to post • Position yourself correctly with firm grip on hammer • Keep feet planted firmly use fabric to hold stake in place • Again, plan your path keep footing clear while carrying materials or tools • Stakes have pointed edges keep them away from your body and keep points to the ground • Give yourself as much space as possible when swinging hammer if area is congested take small swings with the hammer • Weathered or rotten stakes may be in your bundle please keep an eye out for them replace when needed or discard bundle and notify supervisor immediately



ACTIVITY HAZARD ANALYSIS
Sediment Control

ACTIVITY/STEP	POTENTIAL HAZARD	PROTECTIVE AND CONTROL MEASURES
Backfilling trench line/burying silt fabric	<ul style="list-style-type: none"> • Incorrect install • Sprains and strains • Dehydration • Trips and falls • House keeping 	<ul style="list-style-type: none"> • Make sure the silt fence stakes are installed correctly, water flow goes against the fabric then stakes are driven behind • Proper ergonomics when shoveling fill material back into trench, use equipment properly and when possible let the machine do the work • Take breaks make sure you stay hydrated, watch out for your fellow man ask when the last time was you had a water. • Keep all tools and equipment clear and free of debris, your work area must be clutter free as well. Housekeeping is a must with all task
Refueling Equipment	<ul style="list-style-type: none"> • Ignition source • Fire • Leaks due to faulty container • Slips, Trips, Falls • Spills 	<ul style="list-style-type: none"> • Shutdown equipment during refueling. • Allow equipment to cool down before refueling. • Refuel from OSHA-compliant portable fuel container. • Personnel performing the refueling operation will exercise caution to avoid spillage. • Spill kits will be kept near the refueling operations. • Prior to fueling, personnel shall bond the heavy equipment to fueling equipment. • A minimum 10 lb. (minimum) fire extinguisher will be located in the immediate area during refueling • Spill kit



ACTIVITY HAZARD ANALYSIS (AHA)

Activity: Tank Demolition
Project: Tonawanda Coke

Date: August 2019
Revision: 1

Work Plan Summary: Load existing soil pile material into trucks for off-site disposal

PREREQUISITES		
EQUIPMENT TO BE USED/SITE ENTRY	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Excavators equipped with bucket	All equipment shall be inspected before use per manufacturer's specification. Inspections shall be documented and maintained on site.	Any equipment operator must be OSC certified competent for each specific class of equipment.
Over-the-road haul trucks (subcontractor). Trucks to be equipped with ground level tarping system and pre-lined	Trucks shall be inspected before leaving site for loose material that may become dislodged off site.	Each driver upon initial site entry shall be instructed on safety requirements, signals, and traffic controls
PPE: Hard hat, high visibility clothing, safety glasses w/side shield, safety shoes with boot covers or rubber over boots in wet conditions, gloves, hearing protection.	PPE shall be inspected daily.	PPE basic training



ACTIVITY HAZARD ANALYSIS (AHA)

ACTIVITY	POTENTIAL HAZARD	PROTECTIVE METHODS AND CONTROLS
Truck arrives on-site and goes through bed lining inspection	Collision with object Collision with pedestrian Driver distraction/injury Liner not installed properly Fall	<ul style="list-style-type: none">• Site shall be laid out in advance for truck maneuvering and traffic controls• All site personnel shall have hi-visibility clothing• Driver shall be instructed on site rules; remain in truck except designated area, PPE, signals• OSC to inspect bed for proper liner installation• Maintain 3-points of contact on ladder during inspection
Truck loading	Collision with object Material spill	<ul style="list-style-type: none">• Spotter to direct truck as needed (i.e., blind spot, tight maneuvering/quarters)• Excavator operator to signal truck for correct position and when load is completed
Truck tarping	Fall Struck by	<ul style="list-style-type: none">• Only ground-level tarp system to be used. Driver to maintain 3-points of contact entering & exiting cab.• Tarping and pre-departure inspection only to be done in designated area•
		<ul style="list-style-type: none">•

Special Notes and Instructions: This AHA shall be reviewed by all project employees prior to commencing work and as warranted by; AHA revisions, safe work observations and improvement measures. All employees have the authority to stop work for safety concerns.



ACTIVITY HAZARD ANALYSIS (AHA)

AHA Review and Training Acknowledgement:

Employees print name, sign and date in spaces provided below.

PRINT NAME	SIGNATURE	DATE



ACTIVITY HAZARD ANALYSIS (AHA)

Activity: Tank Demolition
Project: Tonawanda Coke

Date: August 2019
Revision: 1

Work Plan Summary: Activities, hazards and associated hazard control with respect to the cleaning and demolition of storage tanks

PREREQUISITES		
EQUIPMENT TO BE USED/SITE ENTRY	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Project specific equipment: excavators equipped with mechanical shears & grapple. Hand saw for cold cuts.	All equipment shall be inspected before use per manufacturer's specification. Inspections shall be documented and maintained on site.	Any equipment operator must be OSC certified competent for each specific class of equipment.
Aerial lifts. Users to be equipped with fall restraint.	Pre-use inspection (daily) per manufacturer	Per manufacturer on lift. Fall protection.
PPE: Hard hat, high visibility clothing, safety glasses w/side shield, safety shoes with boot covers or rubber over boots in wet conditions, gloves, hearing protection. For power washing will upgrade to coated disposable coveralls, rubber boots, nitrile gloves, and face shield w/goggles	PPE shall be inspected daily.	PPE basic training
4-gas MultiRAE lite	Unit must be calibrated per manufacturer	Per manufacturer



ACTIVITY HAZARD ANALYSIS (AHA)

ACTIVITY	POTENTIAL HAZARD	PROTECTIVE METHODS AND CONTROLS
Work zone preparation	Slips, trips, and falls Vermin Struck by Inhalation contaminants Skin contact	<ul style="list-style-type: none"> • Walk work area slowly and without distraction. • In high vegetation use stick to probe ahead. Remain upright and make noise. • Delineate work zone and mark out traffic patterns. Use spotters. • Monitor tank air for VOCs per HASP • Use barrier gloves (w/leather) when handling contaminated material
Fueling of equipment	Splash Burns Fire Spill	<ul style="list-style-type: none"> • Use face shield with PPE • Shutdown equipment during refueling. • Allow equipment to cool down before refueling, refuel from OSHA-compliant container. Have fire extinguisher (10 lb. minimum) available. • Spill kits will be kept near the refueling operations.
Cold cut openings in tank roof from aerial for shear access	Fall from basket Shock Vapor inhalation/explosion Hand injury Debris in eye Noise exposure Dropped items	<ul style="list-style-type: none"> • Use fall restraint (harness with tether). Do not lean outside of basket. Keep feet on platform • Assure power tool is grounded and plugged to GFCI. Check electric power cord. No work within 10-feet of overhead power lines • Monitor tank for LEL and VOC levels. See HASP for action limits. • Use leather gloves. Tie off cord to relieve weight. • Use face shield and safety glasses with side shields • Use hearing protection • Barricade area below aerials. Tie off hand tools to basket.
Shear cut tank using excavators	Struck by Fire/explosion Dropped items/hydraulic failure Noise exposure	<ul style="list-style-type: none"> • Maintain eye contact with operator, do not approach within 35-feet, use spotters • Before shearing check interior tank atmosphere for LEL • Never get below boom/stick, stay outside swing radius. Do not approach until load is on ground or decontamination pad • Use hearing protection near excavators. Operators use hearing protection if doors/windows of cab are opened



ACTIVITY HAZARD ANALYSIS (AHA)

Special Notes and Instructions: This AHA shall be reviewed by all project employees prior to commencing work and as warranted by; AHA revisions, safe work observations and improvement measures. All employees have the authority to stop work for safety concerns.

AHA Review and Training Acknowledgement:

Employees print name, sign and date in spaces provided below.

PRINT NAME	SIGNATURE	DATE

ATTACHMENT III: Safety Data Sheets



Safety Data Sheet (SDS)

Date Prepared/Revised: 1/6/2015 Version no.: 02 Supersedes: (9/11/2014)

1.) Identification of the Mixture and of the Company

Product identifier: **Aervoe Construction Marking Paint - Aerosol**

Product name: **Construction Marking Paint**

Fluorescent Colors	Non-Fluorescent Colors	16 oz. I.A.C.
246 Red	251 Black	261 Red
247 Orange	252 Yellow	262 Yellow
248 Green	254 Blue	263 Blue
249 Pink	255 White	265 Orange
250 Blue	256 Red	267 White
253 Yellow	257 Orange	270 Fluorescent Red
283 Red-Orange	258 Hi Vis Yellow	272 Fluorescent Orange
	259 Green	274 Fluorescent Green
	260 Purple	275 Fluorescent Red/Orange
		279 Fluorescent Pink

Relevant identified uses of the substance: Designed to adhere to most surfaces, including pavement, gravel, and soil.

Uses advised against: Do not apply if surface is wet, or if rain is imminent within 4 hours of application.

CAS No:	Not Applicable (mixture)
EC No:	Not Applicable (mixture)
Index No:	Not Applicable (mixture)
Manufacturer/Supplier:	Aervoe Industries Incorporated
Street address/P.O. Box:	1100 Mark Circle
Country ID/Postcode/Place:	Gardnerville, Nevada 89410
Telephone number:	001 (0) 1-775-782-0100
e-mail:	mailbox@aervoe.com
National contact:	Aervoe Industries Incorporated
For Product Information:	001 (0) 1-800-227-0196
Emergency telephone number:	001 (0) 1-800-424-9300 (CHEMTREC – 24 hrs)
	English Language Service

2. Hazards identification

Classifications

Physical Hazards: Aerosol - Category 1
 Flam. Gas. 1
 Press. Gas
 Flam. Liq. 2

Health Hazards: Car 1B
 Muta 1B
 Asp Tox. 1



Safety Data Sheet (SDS)

Date Prepared/Revised: 1/6/2015 Version no.: 02 Supersedes: (9/11/2014)

Eye Irrit. - 2
Rep. 2
Skin. Irr. 2
STOT SE3

Environmental Hazards: Aquatic Chronic 2

Labeling

Signal Word: Danger

Hazard Statements: H220 – Extremely flammable gas
H222 – Extremely flammable aerosol
H225 – Highly flammable liquid and vapour.
H229 - Pressurized container: may burst if heated
H304 – May be fatal if swallowed and enters airways.
H315 – Causes skin irritation.
H319 – Causes serious eye irritation.
H336 – May cause drowsiness or dizziness.
H340 – May cause genetic defects
H350 – May cause cancer
H361 – Suspected of damaging fertility or the unborn child .
H373 – May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements: P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use
P210 - Keep away from heat/sparks/open flames/hot surfaces - no smoking
P211 - Do not spray on an open flame or other ignition source
P251 - Pressurized container: Do not pierce or burn, even after use
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P262 - Do not get in eyes, on skin, or on clothing
P264 - Wash ... thoroughly after handling
P280 - Wear protective gloves/eye protection/face protection

P303+P361+P353 - If on skin or hair, remove/takeoff immediately all contaminated clothing. Rinse skin with water/shower.
P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F
P501 - Dispose of contents/container in accordance with local/regional/national/international regulation



Safety Data Sheet (SDS)

Date Prepared/Revised: 1/6/2015 Version no.: 02 Supersedes: (9/11/2014)



Symbols/Pictograms:

3. Composition / Information on Ingredients

Composition

Chemical	Synonyms	CAS Number	EINECS Number	Weight Percent	Hazard Category	H-Code
Hydrocarbon Propellant	LPG	68476-86-8	270-705-8	10-30%	Press. Gas Flam. Gas 1 Carc. 1B Muta. 1B	H220 H350 H340
Hexane	n-Hexane	110-54-3	203-777-6	5-10%	Flam. Liq. 2 Repr. 2 Asp. Tox. 1 STOT RE 2 * Skin Irrit. 2 STOT SE 3 Aquatic Chronic 2	H225 H361f *** H304 H373 ** H315 H336 H411
Aliphatic Petroleum Distillates	Solvent Naphtha	64742-89-8	265-192-2	5-10%	Carc. 1B Muta. 1B Asp. Tox. 1	H350 H340 H304
Aliphatic Petroleum Distillates	Solvent Naphtha	64742-88-7	265-191-7	1-5%	Asp. Tox. 1	H304
Aliphatic Petroleum Distillates	Solvent Naphtha	8032-32-4	232-453-7	1-5%	Carc. 1B Muta. 1B Asp. Tox. 1	H350 H340 H304
Non-fluorescent colors also contain:						
Acetone	Propanone	67-64-1	200-662-2	1-5%	Flam. Liq. 2 Eye Irrit. 2 STOT SE 3	H225, H319, H336



Safety Data Sheet (SDS)

Date Prepared/Revised: 1/6/2015 Version no.: 02 Supersedes: (9/11/2014)

Other Product Information

Chemical Identity: Mixture

4.) First Aid Measures

General Advice:	If symptoms persist, always call a doctor.
Inhalation First Aid:	Remove victim to fresh air and provide oxygen if breathing is difficult. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention immediately.
Skin Contact First Aid:	Wash with soap and water. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse.
Eye Contact First Aid:	If contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids open. Get medical attention immediately.
Ingestion First Aid:	If swallowed, wash out mouth with water provided the person is conscious. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Most Important Symptoms/Effects:	Exposure may cause slight irritation to the skin, eyes, and respiratory tract. Excessive exposure may cause central nervous system effects.

5. Fire Fighting Measures

Flammable Properties:	Aerosol
Auto Ignition Temperature:	Not Available
Suitable extinguishing media:	Carbon dioxide, dry chemical, water spray.
Unsuitable extinguishing media:	None known
Special hazards arising from the substance or mixture:	None known
Hazardous combustion products:	Carbon dioxide, Carbon monoxide
Fire & Explosion Hazards:	Closed Containers may rupture due to the buildup of pressure from extreme temperatures.
Precautions for fire-fighters:	Use water spray to cool containers exposed to heat or fire to prevent pressure build up. In the event of a fire, wear full protective clothing and NIOSH- approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

PERSONAL PRECAUTIONARY MEASURES:



Safety Data Sheet (SDS)

Date Prepared/Revised: 1/6/2015 Version no.: 02 Supersedes: (9/11/2014)

- 1) Follow personal protective equipment recommendations found in section 8.
- 2) Maintain adequate ventilation.

SPILL CLEAN-UP PROCEDURES:

- 1.) Evacuate unprotected personnel from the area.
- 2.) Remove sources of ignition if safe to do so.
- 3.) Pickup spilled materials using non-sparking tools and place in an appropriate container for disposal.
- 4.) Contain spill to prevent material from entering sewage or ground water systems.
- 5.) Always dispose of waste materials in accordance with all EU, National and Local Regulations.

7. Handling and Storage

Handling:

Flammable Aerosol, use in a well ventilated area.
 Do not use near sources of ignition.
 Do not to eat, drink and smoke while working with this material.
 Wash hands after use.

Conditions for safe storage, including any incompatibilities:

Store out of direct sunlight.
 Storage Temperature: 32° to 120°F (0° to 49°C).
 No known incompatibilities.

8. Exposure Controls / Personal Protection

Appropriate engineering controls:

Ensure adequate ventilation. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.
 Keep away from sources of ignition.
 Take precautionary measures against static discharge.

Personal Protection:

Eye & face protection devices such as safety glasses, safety goggles or face shield are recommended.

Skin protection

Wear the appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection:

Use only in an adequately ventilated area. For unknown vapor concentrations use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA).

Hazardous Ingredient	CAS Number	ACGIH TLV (TWA)	ACGIH TLV (STEL)	OSHA PEL (TWA)	OSHA PEL (STEL)



Safety Data Sheet (SDS)

Date Prepared/Revised: 1/6/2015 Version no.: 02 Supersedes: (9/11/2014)

Aliphatic Petroleum Distillates	64742-88-7	N/AV	N/AV	N/AV	N/AV
Aliphatic Petroleum Distillates	64742-89-8	N/AV	N/AV	N/AV	N/AV
Hydrocarbon Propellant	68476-86-8	N/AV	N/AV	N/AV	N/AV
Aliphatic Petroleum Distillates	8032-32-4	200ppm	300ppm	200ppm	N/AV
Hexane	110-54-3	50ppm	N/AV	500ppm	N/AV
Acetone	67-64-1	500ppm	750ppm	1000ppm	N/AV

***Values are based on the 2014 Guide to Occupational Exposure Values by ACGIH**

9. Information on Basic Physical and Chemical Properties

Appearance: Color varies by product.	Odor: Hydrocarbon Odor
Odor Threshold: N/AV	pH: Not Applicable (solvent Base)
Melting Point: N/AV	Freezing Point: N/AV
Initial Boiling Point: N/AV	Boiling Point Range: N/AV
Flash Point: <0° F (-18° C)	Evaporation Rate: Faster than n-Butyl Acetate
Flammability Solid/Gas: Flammable gas	LEL: 0.9% UEL: 13%
Vapor Pressure: N/AV	Vapor Density: Heavier Than Air
Relative Density: N/AV	Solubility: Negligible
Partition Coefficient: n-octanol/ water: N/AV	Auto-ignition Temperature: N/AV
Decomposition Temperature: N/AV	Viscosity: N/AV
Explosive Properties: N/AV	Oxidizing Properties: N/AV

10. Stability & Reactivity

Possibility of hazardous reactions: Hazardous polymerization will not occur under normal conditions

Chemical stability: Stable under normal conditions

Conditions to avoid: Heat and ignition sources

Incompatible materials: Strong Oxidizing Agents

Hazardous decomposition products: Will not occur

11. Toxicological Information

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart and blood

Routes of exposure: Eyes, skin, ingestion, and/or inhalation

Acute toxicological data:

(Acetone) Acute oral LD50: 5800mg/kg(rat)



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Eye irritation data:	(Acetone) LC50: 21000 ppm / 8 hr (rat) (Hexane) LD50: 2870 mg/kg (Rat-Oral) N/AV
Skin irritation/sensitization/absorption data:	N/AV
Reproductive toxicity data:	N/AV
Mutagenicity data:	Muta 1B
Symptoms associated with physical contact:	N/AV
Acute/chronic effects from short/long term exposure:	Irritating to skin. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. Not expected to be a skin sensitizer.
Known reportable carcinogens via the following agencies:	
NTP:	N/AV
IARC:	IARC3:Classification not possible from current data
OSHA:	TLV-A4

* Petroleum distillates may contain chemical carcinogens in limited quantities (< 0.01%). These quantities are determined by the supplier/fraction/purity of the distillate during the manufacturing process. Chemicals that may be present within distillates are listed on California's prop 65 list such as ETHYLBENZENE, BENZENE, and TOLUENE.

12. Ecological Information

Ecotoxicity: **No Data Available**
Persistence and degradability: **No Data Available**
Bioaccumulative potential: **No Data Available**
Mobility in soil: **No Data Available**
Results of PBT and vPvB assessment: **No Data Available**
Other adverse effects: **No Data Available**

13. Disposal Considerations

Waste Disposal: Dispose of material in accordance with EU, national and local requirements. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or



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laws governing your location.

Product / Packaging disposal: Dispose of packaging in accordance with federal, state and local requirements, regulations and/or laws governing your location.

14. Transportation Information

US DOT

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Reference 49 CFR 172.101

IMDG

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Reference IMDG code part 3

IATA:

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols, Flammable	2.1	Not Applicable	Not Applicable	Reference IATA Dangerous Goods Regulation

15. Regulatory Information

Workplace classification:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200). The Occupational Safety and Health Administration's interpretation of the product's hazard to workers.

SARA Title 3:

Section 311/312 Categorizations (40 CFR 372): This product is a hazardous chemical under 29 CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability physical hazard. Superfund Amendment and Reauthorization Act (SARA) category. SARA requires reporting any spill of any hazardous substance.

TSCA status: All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

WHMIS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the (M)SDS contains all of the information required by the CPR.

PROP 65 (CA): WARNING: This product may contain chemicals know to the state of California to cause cancer, birth defects or other reproductive harm.

16. Other Information



Safety Data Sheet (SDS)

Date Prepared/Revised: 1/6/2015 Version no.: 02 Supersedes: (9/11/2014)

This SDS has been completed in accordance with GHS Rev04 (2011): U.S OSHA, CMA, ANSI, Canadian WHMIS standards, and European Directives.

Date of Preparation/Revision: 1-6-2015
Supersedes: (9/11/2014)

To the best of our knowledge, the information contained herein is believed to be accurate. However, the above data does not imply any guarantee or warranty of any kind, expressed or implied. The final determination of the suitability of any material is the sole responsibility of the user. All materials made present un-known hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards existing.



Safety Data Sheet

Material Name: Diesel Fuel, All Types

SDS No. 9909
US GHS

Synonyms: Ultra Low Sulfur Diesel; Low Sulfur Diesel; No. 2 Diesel; Motor Vehicle Diesel Fuel; Non-Road Diesel Fuel; Locomotive/Marine Diesel Fuel

*** Section 1 - Product and Company Identification ***

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Liquids - Category 3
Skin Corrosion/Irritation – Category 2
Germ Cell Mutagenicity – Category 2
Carcinogenicity - Category 2
Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)
Aspiration Hazard – Category 1
Hazardous to the Aquatic Environment, Acute Hazard – Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

DANGER

Hazard Statements

Flammable liquid and vapor.
Causes skin irritation.
Suspected of causing genetic defects.
Suspected of causing cancer.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking
Keep container tightly closed.
Ground/bond container and receiving equipment.

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Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands and forearms thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/mist/vapours/spray.

Response

In case of fire: Use water spray, fog or foam to extinguish.
IF ON SKIN (or hair): Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
If swallowed: Immediately call a poison center or doctor. Do NOT induce vomiting.
IF exposed or concerned: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep cool.
Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
68476-34-6	Fuels, diesel, no. 2	100
91-20-3	Naphthalene	<0.1

A complex mixture of hydrocarbons with carbon numbers in the range C9 and higher.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

First Aid: Skin

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and the area of the body burned.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

Safety Data Sheet

Material Name: Diesel Fuel, All Types

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First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, and other gaseous agents.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Unsuitable Extinguishing Media

None

Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

* * * Section 6 - Accidental Release Measures * * *

Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Caution, flammable vapors may accumulate in closed containers.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Safety Data Sheet

Material Name: Diesel Fuel, All Types

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Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards

None

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame! No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks."

Incompatibilities

Keep away from strong oxidizers.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Component Exposure Limits

Fuels, diesel, no. 2 (68476-34-6)

ACGIH: 100 mg/m³ TWA (inhalable fraction and vapor, as total hydrocarbons, listed under Diesel fuel)
Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Diesel fuel)

Safety Data Sheet

Material Name: Diesel Fuel, All Types

SDS No. 9909

Naphthalene (91-20-3)

ACGIH: 10 ppm TWA
15 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 10 ppm TWA; 50 mg/m³ TWA
NIOSH: 10 ppm TWA; 50 mg/m³ TWA
15 ppm STEL; 75 mg/m³ STEL

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

*** Section 9 - Physical & Chemical Properties ***

Appearance:	Clear, straw-yellow.	Odor:	Mild, petroleum distillate odor
Physical State:	Liquid	pH:	ND
Vapor Pressure:	0.009 psia @ 70 °F (21 °C)	Vapor Density:	>1.0
Boiling Point:	320 to 690 °F (160 to 366 °C)	Melting Point:	ND
Solubility (H₂O):	Negligible	Specific Gravity:	0.83-0.876 @ 60°F (16°C)
Evaporation Rate:	Slow; varies with conditions	VOC:	ND
Percent Volatile:	100%	Octanol/H₂O Coeff.:	ND
Flash Point:	>125 °F (>52 °C) minimum	Flash Point Method:	PMCC
Upper Flammability Limit (UFL):	7.5	Lower Flammability Limit (LFL):	0.6
Burning Rate:	ND	Auto Ignition:	494°F (257°C)

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Safety Data Sheet

Material Name: Diesel Fuel, All Types

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Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products

Keep away from strong oxidizers.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

* * * Section 11 - Toxicological Information * * *

Acute Toxicity

A: General Product Information

Harmful if swallowed.

B: Component Analysis - LD50/LC50

Naphthalene (91-20-3)

Inhalation LC50 Rat >340 mg/m³ 1 h; Oral LD50 Rat 490 mg/kg; Dermal LD50 Rat >2500 mg/kg; Dermal LD50 Rabbit >20 g/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Contact with eyes may cause mild irritation.

Potential Health Effects: Ingestion

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Potential Health Effects: Inhalation

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This material has been positive in a mutagenicity study.

Carcinogenicity

A: General Product Information

Suspected of causing cancer.

Safety Data Sheet

Material Name: Diesel Fuel, All Types

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Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

B: Component Carcinogenicity

Fuels, diesel, no. 2 (68476-34-6)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (listed under Diesel fuel)

Naphthalene (91-20-3)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)

IARC: Monograph 82 [2002] (Group 2B (possibly carcinogenic to humans))

Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Single Exposure

This product is not reported to have any specific target organ general toxicity single exposure effects.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ general toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Fuels, diesel, no. 2 (68476-34-6)

Test & Species

96 Hr LC50 Pimephales promelas 35 mg/L [flow-through]

Conditions

Naphthalene (91-20-3)

Test & Species

96 Hr LC50 Pimephales promelas 5.74-6.44 mg/L [flow-through]

96 Hr LC50 Oncorhynchus mykiss 1.6 mg/L [flow-through]

96 Hr LC50 Oncorhynchus mykiss 0.91-2.82 mg/L [static]

96 Hr LC50 Pimephales promelas 1.99 mg/L [static]

Conditions

Safety Data Sheet

Material Name: Diesel Fuel, All Types

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96 Hr LC50 Lepomis macrochirus	31.0265 mg/L [static]
72 Hr EC50 Skeletonema costatum	0.4 mg/L
48 Hr LC50 Daphnia magna	2.16 mg/L
48 Hr EC50 Daphnia magna	1.96 mg/L [Flow through]
48 Hr EC50 Daphnia magna	1.09 - 3.4 mg/L [Static]

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

*** Section 13 - Disposal Considerations ***

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 14 - Transportation Information ***

DOT Information

Shipping Name: Diesel Fuel

NA #: 1993 Hazard Class: 3 Packing Group: III

Placard:



*** Section 15 - Regulatory Information ***

Regulatory Information

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Naphthalene (91-20-3)

CERCLA: 100 lb final RQ; 45.4 kg final RQ

SARA Section 311/312 – Hazard Classes

Acute Health
X

Chronic Health
X

Fire
X

Sudden Release of Pressure
--

Reactive
--

Safety Data Sheet

Material Name: Diesel Fuel, All Types

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SARA SECTION 313 - SUPPLIER NOTIFICATION

This product may contain listed chemicals below the de minimis levels which therefore are not subject to the supplier notification requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372. If you may be required to report releases of chemicals listed in 40 CFR 372.28, you may contact Hess Corporate Safety if you require additional information regarding this product.

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Fuels, diesel, no. 2	68476-34-6	No	No	No	Yes	No	No
Naphthalene	91-20-3	Yes	Yes	Yes	Yes	Yes	No

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Additional Regulatory Information

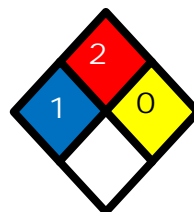
Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Fuels, diesel, no. 2	68476-34-6	Yes	DSL	EINECS
Naphthalene	91-20-3	Yes	DSL	EINECS

*** Section 16 - Other Information ***

NFPA® Hazard Rating

Health	1
Fire	2
Reactivity	0



HMIS® Hazard Rating

Health	1*	Slight
Fire	2	Moderate
Physical	0	Minimal

*Chronic

Safety Data Sheet

Material Name: Diesel Fuel, All Types

SDS No. 9909

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Literature References

None

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet



SAFETY DATA SHEET

131 Neutra™ Fuel Stabilizer

Section 1. Identification

GHS product identifier : 131 Neutra™ Fuel Stabilizer

Other means of identification : Not available.

Product type : Liquid.

Identified uses

Fuel additive for gasoline, diesel and biodiesel fuels.

Supplier's details : Schaeffer Mfg. Company
102 Barton Street
Saint Louis, Missouri 63104
Tel: 314-865-4100
Fax: 314-865-4107
Toll Free: 1-800-325-9962
E-Mail: safety@schaefferoil.com
Web: <http://www.schaefferoil.com>

Emergency telephone number (with hours of operation) : +1 314 865-4105 (24-hour response number)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2

GHS label elements

Hazard pictograms



Signal word : Warning

Hazard statements : Flammable liquid and vapor.
Causes serious eye irritation.
Causes skin irritation.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Wash hands thoroughly after handling.

Section 2. Hazards identification

Response	: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	: Store in a well-ventilated place. Keep cool.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Butan-1-ol	10 - 30	71-36-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: Flush contaminated skin with plenty of water. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: Causes serious eye irritation.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: Causes skin irritation.
Ingestion	: Irritating to mouth, throat and stomach.

Section 4. First aid measures

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet or water-based fire extinguishers.

- Specific hazards arising from the chemical** : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

- Special protective actions for fire-fighters** : Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Butan-1-ol	ACGIH TLV (United States, 6/2013). TWA: 20 ppm 8 hours. NIOSH REL (United States, 4/2013). Absorbed through skin. CEIL: 150 mg/m ³ CEIL: 50 ppm OSHA PEL (United States, 2/2013). TWA: 300 mg/m ³ 8 hours. TWA: 100 ppm 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Clear.
Odor	: Amine-like.
Odor threshold	: Not available.
pH	: 9.5 to 10.7
Melting point/ Dropping Point	: Not available.
Boiling point	: 64.44 to 92.22°C (148 to 198°F)
Flash point	: Closed cup: 38°C (100.4°F) [Pensky-Martens.]
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: 0.2 kPa (1.5 mm Hg) [room temperature]
Vapor density	: >1 [Air = 1]
Relative density	: 0.896
Solubility	: Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials and reducing materials. Slightly reactive or incompatible with the following materials: organic materials, acids and alkalis.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Butan-1-ol	LC50 Inhalation Vapor	Rat	24000 mg/m ³	4 hours
	LD50 Dermal	Rabbit	3400 mg/kg	-
	LD50 Oral	Rat	790 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Butan-1-ol	Eyes - Severe irritant	Rabbit	-	0.005 mL	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-

Sensitization

There is no data available.

Carcinogenicity

There is no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Butan-1-ol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
Inhalation : No known significant effects or critical hazards.
Skin contact : Adverse symptoms may include the following:
 irritation
 redness
Ingestion : No known significant effects or critical hazards.

Section 11. Toxicological information

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	7232.4 mg/kg
Dermal	31127 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Butan-1-ol	Acute EC50 1983000 to 2072000 µg/l Fresh water Acute LC50 1910000 µg/l Fresh water	Daphnia - Daphnia magna Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	48 hours 96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Butan-1-ol	1	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.




Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Butan-1-ol	71-36-3	Listed	U031

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN1993	FLAMMABLE LIQUIDS, N. O.S. (Contains Butan-1-ol) RQ (Butan-1-ol)	3	III		This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity. Reportable quantity At all time please check for possible RQ (Reportable Quantities)
IMDG Class	UN1993	FLAMMABLE LIQUIDS, N. O.S. (Contains Butan-1-ol)	3	III		-
IATA-DGR Class	UN1993	FLAMMABLE LIQUIDS, N. O.S. (Contains Butan-1-ol)	3	III		-

PG* : Packing group

AERG : 128

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) PAIR: Naphthalene
 TSCA 8(a) CDR Exempt/Partial exemption: Not determined
 United States inventory (TSCA 8b): All components are listed or exempted.
 Clean Water Act (CWA) 307: Phenol; Naphthalene; Ethylbenzene
 Clean Water Act (CWA) 311: P-cresol; M-cresol; Xylenol; O-cresol; Phenol;
 Naphthalene; Xylene; Ethylbenzene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
O-cresol	0.1 - 1	Yes.	1000 / 10000	-	100	-
Phenol	0 - 0.1	Yes.	500 / 10000	-	1000	-

SARA 304 RQ : 96153.8 lbs / 43653.8 kg [12870.7 gal / 48720.8 L]

SARA 311/312

Classification : Fire hazard
 Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Butan-1-ol	10 - 30	Yes.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Butan-1-ol	71-36-3	10 - 30
Supplier notification	Butan-1-ol	71-36-3	10 - 30

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Butan-1-ol

New York : The following components are listed: Butan-1-ol

Section 15. Regulatory information

- New Jersey** : The following components are listed: Distillates (petroleum), hydrotreated heavy naphthenic; Butan-1-ol
- Pennsylvania** : The following components are listed: Butan-1-ol
- California Prop. 65**

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
Naphthalene	Yes.	No.	Yes.	No.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability :** 2 **Physical hazards :** 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability :** 2 **Instability :** 0

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US Tariff Heading Number : 3811.90.0000

Schedule B Code : 3811.90.0000

History

Date of issue mm/dd/yyyy : 05/15/2014

Version : 1

Revised Section(s) : Not applicable.

Prepared by : KMK Regulatory Services Inc.

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SAFETY DATA SHEET

SDS ID NO.: 0298MAR019
Revision Date: 05/22/2015

1. IDENTIFICATION

Product Name: Marathon Petroleum Premium AW II Hydraulic Oil
Synonym: Premium AW II ISO 32 Hydraulic Oil; Premium AW II ISO 46 Hydraulic Oil; Premium AW II ISO 68 Hydraulic Oil; Premium AW II ISO 100 Hydraulic Oil; ISO 32 Premium AW II Hydraulic Oil; ISO 46 Premium AW II Hydraulic Oil; ISO 68 Premium AW II Hydraulic Oil; ISO 100 Premium AW II Hydraulic Oil
Chemical Family: Hydrocarbon Mixture
Recommended Use: Hydraulic Fluid.
Use Restrictions: All others.

Supplier Name and Address:
MARATHON PETROLEUM COMPANY LP
539 South Main Street
Findlay, OH 45840

SDS information: 1-419-421-3070
Emergency Telephone: 1-877-627-5463

2. HAZARD IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute aquatic toxicity	Category 3
Chronic aquatic toxicity	Category 3

Hazards Not Otherwise Classified (HNOC)

Not applicable

Label elements

EMERGENCY OVERVIEW

Harmful to aquatic life with long lasting effects

Appearance Clear Liquid

Physical State Liquid

Odor Petroleum

Precautionary Statements - Prevention

Avoid release to the environment

Precautionary Statements - Response

Not applicable

Precautionary Statements - Storage

Not applicable

Precautionary Statements - Disposal

Dispose of contents/container at an approved waste disposal plant

Additional Information

Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Lube oil is a complex mixture of highly refined lubricating base stocks and additives.

Composition Information:

Name	CAS Number	Weight %
Solvent Refined, Hydrotreated Heavy Paraffinic Distillate	64742-54-7	98-99
2,6-di-tert-butylphenol	128-39-2	0.1-1

4. FIRST AID MEASURES

First Aid Measures

General advice

In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

Inhalation:

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). If symptoms occur get medical attention.

Skin Contact:

Wash skin with plenty of soap and water. If irritation or other symptoms occur get medical attention. Wash contaminated clothing and clean shoes before reuse. Any injection injury from high pressure equipment should be evaluated immediately by a physician as potentially serious (See NOTES TO PHYSICIAN).

Eye Contact:

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Get medical attention if irritation persists.

Ingestion:

Rinse mouth out with water. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Keep affected person warm and at rest. If symptoms develop, seek medical attention.

Most important signs and symptoms, both short-term and delayed with overexposure

Adverse Effects:

Preexisting skin conditions and/or respiratory disorders may be aggravated by exposure to this product.

Indication of any immediate medical attention and special treatment needed

NOTES TO PHYSICIAN:

SKIN: Leaks or accidents involving high-pressure equipment may inject a stream of material through the skin and initially produce an injury that may not appear serious. Only a small puncture wound may appear on the skin surface but, without proper treatment and depending on the nature, original pressure, volume, and location of the injected material, can compromise blood supply to an affected body part. Prompt surgical debridement of the wound may be necessary to prevent irreversible loss of function and/or the affected body part. High pressure injection injuries may be **SERIOUS SURGICAL EMERGENCIES**.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

For small fires, Class B fire extinguishing media such as CO₂, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

The product is not combustible per the OSHA Hazard Communication Standard, but will ignite and burn at temperatures exceeding the flash point.

Hazardous combustion products

Smoke, carbon monoxide, and other products of incomplete combustion.

Explosion data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Special protective equipment and precautions for firefighters

Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Use water spray to cool exposed surfaces from as far a distance as possible. Keep run-off water out of sewers and water sources.

NFPA: Health 1 Flammability 1 Instability 0 Special Hazards -

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep public away. Isolate and evacuate area. Shut off source if safe to do so.

Protective Equipment: Use personal protection measures as recommended in Section 8.

Emergency Procedures: Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.

Environmental precautions: Avoid release to the environment. Avoid subsoil penetration.

Methods and materials for containment: Prevent further leakage or spillage if safe to do so.

Methods and materials for cleaning up: Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Recover and return free product to proper containers.

7. HANDLING AND STORAGE

Safe Handling Precautions: Avoid contact with skin, eyes and clothing. Do not swallow. Avoid breathing vapors or mists. Use good personal hygiene practices. Wash thoroughly after handling. Use personal protection measures as recommended in Section 8. Do not cut, drill, grind or weld on empty containers since explosive residues may remain. Refer to applicable EPA, OSHA, NFPA and consistent state and local requirements.

High-pressure injection of any material through the skin is a serious medical emergency even though the small entrance wound at the injection site may not initially appear serious. These injection injuries can occur from high-pressure equipment such as paint spray or grease or guns, fuel injectors, or pinhole leaks in hoses or hydraulic lines and should all be considered serious. High pressure injection injuries may be **SERIOUS SURGICAL EMERGENCIES** (See First Aid Section 4).

Storage Conditions: Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store away from incompatible materials.

Incompatible materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	ACGIH TLV	OSHA PELs:	OSHA - Vacated PELs	NIOSH IDLH
Solvent Refined, Hydrotreated Heavy Paraffinic Distillate 64742-54-7	Mineral oil, highly/severely refined, inhalable fraction 5 mg/m ³ TWA	-	-	-
2,6-di-tert-butylphenol 128-39-2	-	-	-	-

Notes: The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.

Engineering measures: Local or general exhaust required when using at elevated temperatures that generate vapors or mists.

Personal protective equipment

Eye protection: Use goggles or face-shield if the potential for splashing exists.

Skin and body protection: Wear neoprene, nitrile or PVA gloves to prevent skin contact. Glove suitability is based on workplace conditions and usage. Contact the glove manufacturer for specific advice on glove selection and breakthrough times. Wear appropriate protective clothing.

Respiratory protection: Use an approved organic vapor chemical cartridge or supplied air respirators when material produces vapors that exceed permissible exposure limits or excessive vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 29 CFR 1910.134. Self-contained breathing apparatus should be used for fire fighting.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Clear Liquid
Color	Clear
Odor	Petroleum
Odor Threshold	No available data.

<u>Property</u>	<u>Values (Method)</u>
Melting Point / Freezing Point	No available data.
Initial Boiling Point / Boiling Range	No available data.
Flash Point	> 220 °C / > 428 °F (Cleveland Open-Cup)
Evaporation Rate	No available data.
Flammability (solid, gas)	Not applicable.
Flammability Limit in Air (%)	
Upper Flammability Limit:	No available data.
Lower Flammability Limit:	No available data.
Vapor Pressure	No available data.
Vapor Density	No available data.
Specific Gravity / Relative Density	0.86-0.88
Water Solubility	No available data.
Solubility in other solvents	No available data.
Partition Coefficient	No available data.
Decomposition temperature:	No available data.
pH:	No available data.
Autoignition Temperature	No available data.
Kinematic Viscosity	≥ 28.8 mm ² /s @ 40°C / 104°F (ASTM D445)
Dynamic Viscosity	No available data.
Explosive Properties	No available data.
Softening Point	No available data.
VOC Content (%)	0.12-37.7 (w/w)
Density	No available data.
Bulk Density	Not applicable.

10. STABILITY AND REACTIVITY

<u>Reactivity</u>	The product is non-reactive under normal conditions.
<u>Chemical stability</u>	Stable under recommended storage conditions.
<u>Possibility of hazardous reactions</u>	None under normal processing.
<u>Hazardous polymerization</u>	Will not occur.
<u>Conditions to avoid</u>	Sources of heat or ignition.
<u>Incompatible materials</u>	Strong oxidizing agents.
<u>Hazardous decomposition products</u>	None known under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Potential short-term adverse effects from overexposures

Inhalation	Overheating may produce vapors which may cause respiratory irritation, dizziness and nausea.
Eye contact	Exposure to vapor or contact with liquid may cause mild eye irritation.
Skin contact	Prolonged or repeated exposure may cause dermatitis, folliculitis or oil acne.
Ingestion	May cause irritation of the mouth, throat and gastrointestinal tract.

Acute Toxicological data

Name	Oral LD50	Dermal LD50	Inhalation LC50

Solvent Refined, Hydrotreated Heavy Paraffinic Distillate 64742-54-7	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.5 mg/l (Rat) 4 h
2,6-di-tert-butylphenol 128-39-2	> 5000 mg/kg (Rat)	> 10 g/kg (Rabbit)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

This product is considered to have a low order of acute and chronic oral and dermal toxicity.

Adverse effects related to the physical, chemical and toxicological characteristics

Signs & Symptoms Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.

Sensitization Not expected to be a skin or respiratory sensitizer.

Mutagenic effects None known.

Carcinogenicity Cancer designations are listed in the table below.

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
Solvent Refined, Hydrotreated Heavy Paraffinic Distillate 64742-54-7	Mineral oil, poorly/mildly refined Suspected Human Carcinogen (A2) Mineral oil, highly/severely refined, inhalable fraction Not Classifiable (A4)	Mineral oil, untreated or mildly treated Carcinogenic to humans (1) Mineral oil, highly refined Not Classifiable (3)	Mineral oil, poorly/mildly refined Known to be human carcinogen	Not Listed
2,6-di-tert-butylphenol 128-39-2	Not Listed	Not Listed	Not Listed	Not Listed

Reproductive toxicity None known.

Specific Target Organ Toxicity (STOT) - single exposure Not classified.

Specific Target Organ Toxicity (STOT) - repeated exposure Not classified.

Aspiration hazard Not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicity Harmful to aquatic life with long lasting effects.

Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Solvent Refined, Hydrotreated Heavy Paraffinic Distillate 64742-54-7	-	96-hr LC50 = 5000 mg/L Rainbow trout	-	48-hr EC50 = 1000 mg/L Daphnia magna
2,6-di-tert-butylphenol 128-39-2	-	-	-	48-hr EC50 = 0.45 mg/l Daphnia magna

Persistence and degradability No information available.

Bioaccumulation Contains component(s) with the potential to bioaccumulate.

Mobility in soil No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Description of Waste Residues

No information available.

Safe Handling of Wastes

Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required.

Disposal of Wastes / Methods of Disposal

The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

Methods of Contaminated Packaging Disposal

Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (49 CFR 172.101):

UN Proper shipping name:	Not Regulated
UN/Identification No:	Not applicable
Transport Hazard Class(es):	Not applicable
Packing group:	Not applicable

TDG (Canada):

UN Proper shipping name:	Not Regulated
UN/Identification No:	Not applicable
Transport Hazard Class(es):	Not applicable
Packing group:	Not applicable

15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b):	This product and/or its components are listed on the TSCA Chemical Inventory.
--	---

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product may contain component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Solvent Refined, Hydrotreated Heavy Paraffinic Distillate	NA
2,6-di-tert-butylphenol	NA

SARA Section 304: This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	CERCLA/SARA - Hazardous Substances and their Reportable Quantities
Solvent Refined, Hydrotreated Heavy Paraffinic Distillate	NA
2,6-di-tert-butylphenol	NA

SARA: The following EPA hazard categories apply to this product:

None

SARA Section 313: This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).

Name	CERCLA/SARA 313 Emission reporting:
Solvent Refined, Hydrotreated Heavy Paraffinic Distillate	None
2,6-di-tert-butylphenol	None

State and Community Right-To-Know Regulations:

The following component(s) of this material are identified on the regulatory lists below:

Solvent Refined, Hydrotreated Heavy Paraffinic Distillate

- Louisiana Right-To-Know: Not Listed.
- California Proposition 65: Not Listed.
- New Jersey Right-To-Know: Not Listed.
- Pennsylvania Right-To-Know: Not Listed.
- Massachusetts Right-To Know: Not Listed.
- Florida Substance List: Not Listed.
- Rhode Island Right-To-Know: Not Listed.
- Michigan Critical Materials Register List: Not Listed.
- Massachusetts Extraordinarily Hazardous Substances: Not Listed.
- California - Regulated Carcinogens: Not Listed.
- Pennsylvania RTK - Special Hazardous Substances: Not Listed.
- New Jersey - Special Hazardous Substances: Carcinogen
- New Jersey - Environmental Hazardous Substances List: Not Listed.
- Illinois - Toxic Air Contaminants: Present
- New York - Reporting of Releases Part 597 - List of Hazardous Substances: Not Listed.

2,6-di-tert-butylphenol

- Louisiana Right-To-Know: Not Listed.
- California Proposition 65: Not Listed.
- New Jersey Right-To-Know: Not Listed.
- Pennsylvania Right-To-Know: Not Listed.
- Massachusetts Right-To Know: Not Listed.
- Florida Substance List: Not Listed.
- Rhode Island Right-To-Know: Not Listed.
- Michigan Critical Materials Register List: Not Listed.
- Massachusetts Extraordinarily Hazardous Substances: Not Listed.
- California - Regulated Carcinogens: Not Listed.
- Pennsylvania RTK - Special Hazardous Substances: Not Listed.
- New Jersey - Special Hazardous Substances: Not Listed.
- New Jersey - Environmental Hazardous Substances List: Not Listed.
- Illinois - Toxic Air Contaminants: Not Listed.
- New York - Reporting of Releases Part 597 - List of Hazardous Substances: Not Listed.

Canada DSL/NDL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Canadian Regulatory Information: "This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the (M)SDS contains all the information required by the Controlled Products Regulations."

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
2,6-di-tert-butylphenol	D2B	1%

NOTE: Uncontrolled product according to WHMIS classification criteria.

16. OTHER INFORMATION

Prepared By Toxicology and Product Safety
Revision Date: 05/22/2015

Revision Note:

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



Safety Data Sheet

Material Name: Hess 10W30 Motor Oil

SDS No. 8957
US GHS

Synonyms: Valvoline Product Code 52670413

*** Section 1 - Product and Company Identification ***

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

*** Section 2 - Hazards Identification ***

GHS Classification:

Skin Corrosion/Irritation – Category 2
Specific Target Organ Toxicity – Category 3 (narcosis)
Carcinogenicity - Category 1B

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

WARNING

Hazard Statements

Causes skin irritation.
May cause cancer.
May cause drowsiness or dizziness.

Precautionary Statements

Prevention

Wash hands and forearms thoroughly after handling.
Wear protective gloves/protective clothing/eye protection.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.

Response

If on skin: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.
If exposed or concerned: Get medical advice/attention.
If inhaled: Remove person to fresh air and keep in a position comfortable for breathing. Call poison center or doctor if you feel unwell.

Safety Data Sheet

Material Name: Hess 10W30 Motor Oil

Storage

Store locked up.
Store in a well-ventilated place.
Keep container tightly closed.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 3 - Composition / Information on Ingredients ***

CAS #	Component	Percent
64742-65-0	Petroleum distillates, solvent dewaxed heavy paraffinic	83-93

Petroleum-based lubricating oil with detergent/dispersant engine oil package with zinc compounds.

*** Section 4 - First Aid Measures ***

First Aid: Eyes

If symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water while holding eyelids apart. If symptoms persist or there is visual difficulty, seek medical attention.

First Aid: Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

First Aid: Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

First Aid: Notes to Physician

Acute aspiration of large amounts of oil-laden material may produce a serious aspiration hazard. Patients who aspirate these oils should be followed for the development of long-term sequelae. Repeated aspiration of mineral oil can produce chronic inflammation of the lungs (i.e. lipid pneumonia) that may progress to pulmonary fibrosis. Symptoms are often subtle and radiological changes appear worse than clinical abnormalities. Occasionally, persistent cough, irritation of the upper respiratory tract, shortness of breath with exertion, fever, and bloody sputum occur. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities. Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: skin.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

See Section 9 for Flammability Properties.
Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. No special fire hazards are known to be associated with this product. Dense smoke may be generated while burning.

Safety Data Sheet

Material Name: Hess 10W30 Motor Oil

Hazardous Combustion Products

May form: carbon dioxide and carbon monoxide, oxides of sulfur, nitrogen and phosphorous, various hydrocarbons.

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, or gaseous extinguishing agent.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Unsuitable Extinguishing Media

None

Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

* * * Section 6 - Accidental Release Measures * * *
--

Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Caution, flammable vapors may accumulate in closed containers.

SMALL SPILL: Absorb liquid on vermiculite, floor absorbent or other absorbent material. Persons not wearing proper personal protective equipment should be excluded from area of spill.

LARGE SPILL: Prevent run-off to sewers, streams, or other bodies of water. If run-off occurs, notify authorities as required, that a spill has occurred. Persons not wearing proper personal protective equipment should be excluded from area of spill until clean-up has been completed.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Safety Data Sheet

Material Name: Hess 10W30 Motor Oil

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards

None

*** Section 7 - Handling and Storage ***

Handling Procedures

Handle as a combustible liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents.

Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks."

Incompatibilities

Avoid contact with: acids, halogens, strong oxidizing agents.

*** Section 8 - Exposure Controls / Personal Protection ***
--

Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Safety Data Sheet

Material Name: Hess 10W30 Motor Oil

Personal Protective Equipment: Hands

Not normally required. However, wear resistant gloves such as nitrile rubber to prevent irritation which may result from prolonged or repeated skin contact with product.

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Skin and Body

To prevent repeated or prolonged skin contact, wear impervious clothing and boots. Wear normal work clothing covering arms and legs.

Hygiene Measures

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Dry, clear and bright	Odor:	None
Physical State:	Liquid	pH:	ND
Vapor Pressure:	ND	Vapor Density:	ND
Boiling Point:	>425 °F (218.3°C) @ 760.00 mmHg	Melting Point:	ND
Solubility (H2O):	Negligible	Specific Gravity:	0.881 @ 60°F (16°C)
Evaporation Rate:	Slower than ethyl ether	VOC:	ND
Viscosity:	<= 3300.0 cps @ -20°C; 10.0 - 11.0 cst @ 100°C	Octanol/H2O Coeff.:	ND
Flash Point:	430 °F (221.1 °C)	Flash Point Method:	COC
Upper Flammability Limit (UFL):	ND	Lower Flammability Limit (LFL):	ND
Burning Rate:	ND	Auto Ignition:	ND

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

None

Incompatible Products

Avoid contact with: acids, halogens, strong oxidizing agents.

Hazardous Decomposition Products

May form: aldehydes, carbon dioxide and carbon monoxide, hydrogen sulfide, oxides of sulfur, nitrogen and phosphorus, toxic fumes, various hydrocarbons.

Safety Data Sheet

Material Name: Hess 10W30 Motor Oil

*** Section 11 - Toxicological Information ***

Acute Toxicity

A: General Product Information

Harmful if large amounts are swallowed.

B: Component Analysis - LD50/LC50

Petroleum distillates, solvent dewaxed heavy paraffinic (64742-65-0)

Inhalation LC50 Rat >4.7 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >5000 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause mild skin irritation. Prolonged or repeated contact may dry the skin. Symptoms include redness, burning, drying and cracking of the skin, and skin burns. Additional symptoms of skin contact include: acne. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

May cause mild eye irritation. Symptoms include stinging, tearing, and redness.

Potential Health Effects: Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

Potential Health Effects: Inhalation

It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposure limits.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This product is not reported to have any mutagenic effects.

Carcinogenicity

A: General Product Information

May cause cancer.

Used motor oil has been shown to cause skin cancer in laboratory animal continually exposed by repeated applications.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Single Exposure

This product is not reported to have any specific target organ general toxicity single exposure effects.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ general toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

Acute aspiration of large amounts of oil-laden material may produce a serious aspiration hazard.

Safety Data Sheet

Material Name: Hess 10W30 Motor Oil

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Petroleum distillates, solvent dewaxed heavy paraffinic (64742-65-0)

Test & Species	Conditions
----------------	------------

96 Hr LC50 Oncorhynchus mykiss	>5000 mg/L
--------------------------------	------------

48 Hr EC50 Daphnia magna	>1000 mg/L
--------------------------	------------

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

*** Section 13 - Disposal Considerations ***

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 14 - Transportation Information ***

DOT Information

Shipping Name: Not Regulated

*** Section 15 - Regulatory Information ***

Regulatory Information

Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

SARA Section 311/312 – Hazard Classes

<u>Acute Health</u>	<u>Chronic Health</u>	<u>Fire</u>	<u>Sudden Release of Pressure</u>	<u>Reactive</u>
X	X	--	--	--

SARA SECTION 313 - SUPPLIER NOTIFICATION

ZINC C1-C14 ALKYLDITHIOPHOSPHATE (CAS No. 68649-42-3)

State Regulations

Safety Data Sheet

Material Name: Hess 10W30 Motor Oil

Component Analysis - State

None of this product's components are listed on the state lists from CA, MA, MN, NJ, PA, or RI.

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Additional Regulatory Information

Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Petroleum distillates, solvent dewaxed heavy paraffinic	64742-65-0	Yes	DSL	EINECS

* * * Section 16 - Other Information * * *

NFPA® Hazard Rating

Health	1
Fire	1
Reactivity	0



HMIS® Hazard Rating

Health	1*	Slight
Fire	1	Slight
Physical	0	Minimal

*Chronic

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



OFF!® DEEP WOODS® INSECT REPELLENT VIII (DRY)

Version 2.0

Print Date 09/08/2016

Revision Date 07/12/2016

SDS Number 350000015104

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Product name : OFF!® DEEP WOODS® INSECT REPELLENT VIII (DRY)

Recommended use : Insect Repellent

Manufacturer, importer, supplier : S.C. Johnson & Son, Inc.
1525 Howe Street
Racine WI 53403-2236

Telephone : +18005585252

Emergency telephone number : 24 Hour Medical Emergency Phone: (866)231-5406
24 Hour International Emergency Phone: (703)527-3887
24 Hour Transport Emergency Phone: (800)424-9300

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System (GHS) Classification

Hazard classification	Hazard category	Hazards identification
Aerosol	Category 1	Extremely flammable aerosol.
Eye irritation	Category 2A	Causes serious eye irritation.
Gases under pressure	Liquefied gas	Contains gas under pressure; may explode if heated.

Labelling

Hazard symbols

Flame
Gas cylinder
Exclamation mark

Signal word

Danger

Hazard statements

Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



OFF!® DEEP WOODS® INSECT REPELLENT VIII (DRY)

Version 2.0

Print Date 09/08/2016

Revision Date 07/12/2016

SDS Number 350000015104

Precautionary statements

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/ attention.

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Protect from sunlight. Store in a well-ventilated place.

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Do not spray on an open flame or other ignition source.

Do not pierce or burn, even after use.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

Wash hands thoroughly after handling.

Other hazards : None identified

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Weight percent
N,N-Diethyl-m-toluamide	134-62-3	10.00 - 30.00
Ethyl alcohol	64-17-5	10.00 - 30.00
Butane	106-97-8	10.00 - 30.00
Corn starch	9005-25-8	10.00 - 30.00
Propane	74-98-6	5.00 - 10.00
Isobutane	75-28-5	5.00 - 10.00
Isopropyl Myristate	110-27-0	1.00 - 5.00
Magnesium carbonate	546-93-0	1.00 - 5.00

The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

For additional information on product ingredients, see www.whatsinsidescjohnson.com.

4. FIRST AID MEASURES

Eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



OFF!® DEEP WOODS® INSECT REPELLENT VIII (DRY)

Version 2.0

Print Date 09/08/2016

Revision Date 07/12/2016

SDS Number 350000015104

- Skin contact** : If you suspect a reaction to this product, discontinue use and remove contaminated clothing.
- Inhalation** : No special requirements.
- Ingestion** : No special requirements

5. FIREFIGHTING MEASURES

- Suitable extinguishing media** : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Specific hazards during firefighting** : Aerosol Product - Containers may rocket or explode in heat of fire. Do not allow run-off from fire fighting to enter drains or water courses.
- Further information** : Fight fire from maximum distance or protected area. Cool and use caution when approaching or handling fire-exposed containers. Wear full protective clothing and positive pressure self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.
- NFPA Classification** : NFPA Level 2 Aerosol

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Remove all sources of ignition.
Wear personal protective equipment.
Wash thoroughly after handling.
- Environmental precautions** : Do not flush into surface water or sanitary sewer system.
Use appropriate containment to avoid environmental contamination.
Outside of normal use, avoid release to the environment.
- Methods and materials for containment and cleaning up** : If damage occurs to aerosol can:
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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Use only non-sparking equipment.
Dike large spills.
Clean residue from spill site.

7. HANDLING AND STORAGE

Handling

Precautions for safe handling

: Avoid contact with eyes and lips.
For personal protection see section 8.
Use only as directed.
KEEP OUT OF REACH OF CHILDREN AND PETS.
Pressurized container.
Do not pierce or burn, even after use.
Wash thoroughly after handling.

Advice on protection against fire and explosion

: Keep away from sources of ignition - No smoking.
Do not spray on an open flame or other ignition source.

Storage

Requirements for storage areas and containers

: Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
Keep away from food, drink and animal feedingstuffs.
Keep in a dry, cool and well-ventilated place.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Components	CAS-No.	mg/m3	ppm	Non-standard units	Basis
Ethyl alcohol	64-17-5	1,900 mg/m3	1,000 ppm	-	OSHA TWA
Ethyl alcohol	64-17-5	-	1,000 ppm	-	ACGIH STEL
Butane	106-97-8	-	1,000 ppm	-	ACGIH STEL
Corn starch	9005-25-8	5 mg/m3	-	-	OSHA TWA
Corn starch	9005-25-8	15 mg/m3	-	-	OSHA TWA
Corn starch	9005-25-8	10 mg/m3	-	-	ACGIH TWA
Propane	74-98-6	1,800 mg/m3	1,000 ppm	-	OSHA TWA
Propane	74-98-6	-	-	-	ACGIH TWA
Isobutane	75-28-5	-	1,000 ppm	-	ACGIH STEL
Magnesium carbonate	546-93-0	15 mg/m3	-	-	OSHA TWA
Magnesium carbonate	546-93-0	5 mg/m3	-	-	OSHA TWA

Personal protective equipment

Respiratory protection : Do not spray in enclosed areas.

Hand protection : No special requirements.

Eye protection : Safety glasses with side-shields

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- Skin and body protection** : No special requirements.
- Hygiene measures** : Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Form** : aerosol
- Form** : Compressed gas
- Color** : white
- Odor** : pleasant

- Odour Threshold** : No data available

- pH** : 10.3
(as aqueous solution)

- Melting point/freezing point** : No data available
- Initial boiling point and boiling range** : No data available
- Flash point** : < -7 °C
< 19.4 °F
Propellant

- Evaporation rate** : No data available

- Flammability (solid, gas)** : Sustains combustion

- Upper/lower flammability or explosive limits** : No data available

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Vapour pressure	:	No data available	
Vapour density	:	No data available	
Relative density	:	0.82 g/cm ³	
Solubility(ies)	:	dispersible	
Partition coefficient: n-octanol/water	:	No data available	
Auto-ignition temperature	:	No data available	
Decomposition temperature	:	Test not applicable for this product type	
Viscosity, dynamic	:	No data available	
Viscosity, kinematic	:	No data available	
Oxidizing properties	:	No data available	
Volatile Organic Compounds Total VOC (wt. %)*	:	52.6 % - additional exemptions may apply *as defined by US Federal and State Consumer Product Regulations	
Other information	:	None identified	:

10. STABILITY AND REACTIVITY

Possibility of hazardous : If accidental mixing occurs and toxic gas is formed, exit area

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- reactions** : immediately. Do not return until well ventilated.

- Conditions to avoid** : Heat, flames and sparks.

- Incompatible materials** : Strong oxidizing agents
Do not mix with bleach or any other household cleaners.
Strong bases

- Hazardous decomposition products** : Thermal decomposition can lead to release of irritating gases and vapours.

11. TOXICOLOGICAL INFORMATION

- Emergency Overview** : Danger

- Acute oral toxicity** :
- Acute inhalation toxicity** :

- Acute dermal toxicity** :

GHS Properties	Classification	Routes of entry
Acute toxicity	No classification proposed	-
Skin corrosion/irritation	No classification proposed	-
Eye irritation	Category 2A	-
Skin sensitisation	No classification proposed	-
Respiratory sensitisation	No classification proposed	-
Germ cell mutagenicity	No classification proposed	-
Carcinogenicity	No classification proposed	-
Reproductive toxicity	No classification proposed	-
Specific target organ	No classification proposed	-

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toxicity - single exposure		
Specific target organ toxicity - repeated exposure	No classification proposed	-
Aspiration hazard	No classification proposed	-

Aggravated Medical Condition : Do not apply to cuts or irritated skin.

12. ECOLOGICAL INFORMATION

Product : The product itself has not been tested.

Toxicity

The ingredients in this formula have been reviewed and no adverse impact to the environment is expected when used according to label directions.

Toxicity to fish

Components	End point	Species	Value	Exposure time
N,N-Diethyl-m-toluamide	static test LC50	Oncorhynchus mykiss (rainbow trout)	71.25 mg/l	96 h
Ethyl alcohol	LC50	Fish	11,200 mg/l	96 h
Butane	LC50 QSAR	Fish	27.98 mg/l	96 h
Corn starch	static test LC50 Measured No informatio n	Fish	5,000 mg/l	96 h

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	available.			
Propane	LC50	Fish	27.98 mg/l	96 h
Isobutane	LC50 QSAR	Fish	27.98 mg/l	96 h
Isopropyl Myristate	LC50	Danio rerio (zebra fish)	8,400 mg/l	96 h
Magnesium carbonate	static test LC50	Pimephales promelas (fathead minnow)	2,800 mg/l	96 h

Toxicity to aquatic invertebrates

Components	End point	Species	Value	Exposure time
N,N-Diethyl-m-toluamide	LC50	Daphnia magna (Water flea)	75 mg/l	51 h
	semi-static test NOEC Measured OECD Guideline 211 (Daphnia magna Reproduction Test)	Daphnia magna	3.7 mg/l	21 d
Ethyl alcohol	static test LC50	Ceriodaphnia dubia		48 h

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			5,012 mg/l	
	NOEC	Daphnia magna	9.6 mg/l	9 d
Butane	No data available			
Corn starch	No data available			
Propane	LC50	Daphnid	14.22 mg/l	48 h
Isobutane	LC50 QSAR	Daphnid	16.33 mg/l	48 h
Isopropyl Myristate	EC50	Daphnia magna (Water flea)	100 mg/l	48 h
Magnesium carbonate	No data available			

Toxicity to aquatic plants

Components	End point	Species	Value	Exposure time
N,N-Diethyl-m-toluamide	NOEC	Pseudokirchneriella subcapitata (green algae)	0.521 mg/l	96 h
Ethyl alcohol	Static EC50	Chlorella vulgaris (Fresh water algae)	275 mg/l	72 h

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Butane	EC50 QSAR	Green algae	7.71 mg/l	96 h
Corn starch	No data available			
Propane	No data available			
Isobutane	EC50 QSAR	Green algae	8.57 mg/l	96 h
Isopropyl Myristate	EC50	Desmodemus subspicatus	> 100 mg/l	72 h
Magnesium carbonate	static test EC50 Read- across (Analogy)	Desmodemus subspicatus (green algae)	> 100 mg/l	72 h

Persistence and degradability

Component	Biodegradation	Exposure time	Summary
N,N-Diethyl-m-toluamide	83.8 %	28 d	Readily biodegradable
Ethyl alcohol	97 %	28 d	Readily biodegradable
Butane	100 %	385.5 h	Readily biodegradable
Corn starch	No data available		Readily biodegradable
Propane	70 %	< 10 d	Readily biodegradable
Isobutane	70 %	< 10 d	Readily biodegradable
Isopropyl Myristate	91.4 %	28 d	Readily biodegradable
Magnesium carbonate	No data available		

Bioaccumulative potential

Component	Bioconcentration	Partition Coefficient n-
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	factor (BCF)	Octanol/water (log)
N,N-Diethyl-m-toluamide	21.9 estimated	2.4
Ethyl alcohol	3.2 estimated	-0.35 Measured
Butane	No data available	2.89
Corn starch	No data available	No data available
Propane	No data available	2.36
Isobutane	1.57 - 1.97	2.8
Isopropyl Myristate	1,220.1	7.71
Magnesium carbonate	0.89 QSAR	-2.12 QSAR

Mobility

Component	End point	Value
N,N-Diethyl-m-toluamide	Koc	43.3
Ethyl alcohol	No data available	
Butane	No data available	
Corn starch	No data available	
Propane	No data available	
Isobutane	No data available	
Isopropyl Myristate	log Koc	4.08
Magnesium carbonate	No data available	

PBT and vPvB assessment

Component	Results
N,N-Diethyl-m-toluamide	Not fulfilling PBT and vPvB criteria
Ethyl alcohol	Not fulfilling PBT and vPvB criteria
Butane	Not fulfilling PBT and vPvB criteria
Corn starch	Not fulfilling PBT and vPvB criteria
Propane	Not fulfilling PBT and vPvB criteria
Isobutane	Not fulfilling PBT and vPvB criteria
Isopropyl Myristate	Not fulfilling PBT and vPvB criteria

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Magnesium carbonate	Not fulfilling PBT and vPvB criteria
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Other adverse effects : No data available

13. DISPOSAL CONSIDERATIONS

PESTICIDAL WASTE:

For disposal information, please read and follow Disposal instructions on the pesticide label.
Consumer may discard empty container in trash, or recycle where facilities exist.

14. TRANSPORT INFORMATION

Please refer to the Bill of Lading/receiving documents for up-to-date shipping information.

	Land transport	Sea transport	Air transport
UN number	1950	1950	1950
UN proper shipping name	AEROSOLS, Flammable	AEROSOLS, Flammable	AEROSOLS, Flammable
Transport hazard class(es)	2.1	2	2.1
Packing group	-	-	-
Environmental hazards	-	-	-
Special precautions for user	Limited quantities derogation may be applicable to this product, please check transport documents.	Limited quantities derogation may be applicable to this product, please check transport documents.	Limited quantities derogation may be applicable to this product, please check transport documents.

15. REGULATORY INFORMATION

FIFRA Labeling

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This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals.

Following is the hazard information as required on the pesticide label:

WARNING:

- Causes substantial but temporary eye injury.
- Harmful if swallowed.
- Use of this product may cause skin reactions in rare cases.
- Extremely flammable
- Contents under pressure.
- Exposure to temperatures above 120° F may cause bursting.

Notification status : All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Notification status : All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).

California Prop. 65 : This product is not subject to the reporting requirements under California's Proposition 65.

Registration # / Agency
4822-572/US/EPA
30598/PMRA

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16. OTHER INFORMATION

HMIS Ratings

Health	2
Flammability	4
Reactivity	0

NFPA Ratings

Health	2
Fire	4
Reactivity	0
Special	-

This information is being provided in accordance with the Occupational Safety and Health Administration (OSHA) regulation (29 CFR 1910.1200). The information supplied is designed for workplaces where product use and frequency of exposure exceeds that established for the labeled consumer use.

Further information

This document has been prepared using data from sources considered to be technically reliable. It does not constitute a warranty, expressed or implied, as to the accuracy of the information contained herein. Actual conditions of use are beyond the seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Prepared by	SC Johnson Global Safety Assessment & Regulatory Affairs (GSARA)
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Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950
US GHS

Synonyms: Hess Conventional (Oxygenated and Non-oxygenated) Gasoline; Reformulated Gasoline (RFG); Reformulated Gasoline Blendstock for Oxygenate Blending (RBOB); Unleaded Motor or Automotive Gasoline

*** Section 1 - Product and Company Identification ***

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Liquid - Category 2
Skin Corrosion/Irritation - Category 2
Germ Cell Mutagenicity - Category 1B
Carcinogenicity - Category 1B
Toxic to Reproduction - Category 1A
Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)
Specific Target Organ Toxicity (Repeat Exposure) - Category 1 (liver, kidneys, bladder, blood, bone marrow, nervous system)
Aspiration Hazard - Category 1
Hazardous to the Aquatic Environment – Acute Hazard - Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

DANGER

Hazard Statements

Highly flammable liquid and vapour.
Causes skin irritation.
May cause genetic defects.
May cause cancer.
May damage fertility or the unborn child.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Causes damage to organs (liver, kidneys, bladder, blood, bone marrow, nervous system) through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

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Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands and forearms thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe mist/vapours/spray.
Use only outdoors or in well-ventilated area.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.

Response

In case of fire: Use water spray, fog, dry chemical fire extinguishers or hand held fire extinguisher.
IF ON SKIN (or hair): Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.
IF exposed or concerned: Get medical advice/attention.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Get medical advice/attention if you feel unwell.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting.

Storage

Store in a well-ventilated place.
Keep cool. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 3 - Composition / Information on Ingredients ***

CAS #	Component	Percent
86290-81-5	Gasoline, motor fuel	100
108-88-3	Toluene	1-25
106-97-8	Butane	<10
1330-20-7	Xylenes (o-, m-, p- isomers)	1-15
95-63-6	Benzene, 1,2,4-trimethyl-	<6
64-17-5	Ethyl alcohol	0-10
100-41-4	Ethylbenzene	<3
71-43-2	Benzene	0.1-4.9

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110-54-3	Hexane	0.5-4
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A complex blend of petroleum-derived normal and branched-chain alkane, cycloalkane, alkene, and aromatic hydrocarbons. May contain antioxidant and multifunctional additives. Non-oxygenated Conventional Gasoline and RBOB do not have oxygenates (Ethanol). Oxygenated Conventional and Reformulated Gasoline will have oxygenates for octane enhancement or as legally required.

*** Section 4 - First Aid Measures ***

First Aid: Eyes

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

First Aid: Skin

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitroresols that can decompose violently.

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, or gaseous extinguishing agent.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Firefighting foam suitable for polar solvents is recommended for fuel with greater than 10% oxygenate concentration.

Unsuitable Extinguishing Media

None

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Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

* * * Section 6 - Accidental Release Measures * * *

Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Caution, flammable vapors may accumulate in closed containers.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards

None

* * * Section 7 - Handling and Storage * * *

Handling Procedures

USE ONLY AS A MOTOR FUEL.
DO NOT SIPHON BY MOUTH

Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

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Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

Incompatibilities

Keep away from strong oxidizers.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Component Exposure Limits

Gasoline, motor fuel (86290-81-5)

ACGIH: 300 ppm TWA
500 ppm STEL

Toluene (108-88-3)

ACGIH: 20 ppm TWA
OSHA: 200 ppm TWA; 375 mg/m³ TWA
150 ppm STEL; 560 mg/m³ STEL
NIOSH: 100 ppm TWA; 375 mg/m³ TWA
150 ppm STEL; 560 mg/m³ STEL

Butane (106-97-8)

ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)
OSHA: 800 ppm TWA; 1900 mg/m³ TWA
NIOSH: 800 ppm TWA; 1900 mg/m³ TWA

Xylenes (o-, m-, p- isomers) (1330-20-7)

ACGIH: 100 ppm TWA
150 ppm STEL
OSHA: 100 ppm TWA; 435 mg/m³ TWA
150 ppm STEL; 655 mg/m³ STEL

Benzene, 1,2,4-trimethyl- (95-63-6)

NIOSH: 25 ppm TWA; 125 mg/m³ TWA

Ethyl alcohol (64-17-5)

ACGIH: 1000 ppm STEL
OSHA: 1000 ppm TWA; 1900 mg/m³ TWA
NIOSH: 1000 ppm TWA; 1900 mg/m³ TWA

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Ethylbenzene (100-41-4)

ACGIH: 20 ppm TWA
OSHA: 100 ppm TWA; 435 mg/m³ TWA
125 ppm STEL; 545 mg/m³ STEL
NIOSH: 100 ppm TWA; 435 mg/m³ TWA
125 ppm STEL; 545 mg/m³ STEL

Benzene (71-43-2)

ACGIH: 0.5 ppm TWA
2.5 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 5 ppm STEL (Cancer hazard, Flammable, See 29 CFR 1910.1028, 15 min); 0.5 ppm Action
Level; 1 ppm TWA
NIOSH: 0.1 ppm TWA
1 ppm STEL

Hexane (110-54-3)

ACGIH: 50 ppm TWA
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 500 ppm TWA; 1800 mg/m³ TWA
NIOSH: 50 ppm TWA; 180 mg/m³ TWA

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

*** Section 9 - Physical & Chemical Properties ***

Appearance:	Translucent, straw-colored or light yellow	Odor:	Strong, characteristic aromatic hydrocarbon odor. Sweet-ether like
Physical State:	Liquid	pH:	ND
Vapor Pressure:	6.4 - 15 RVP @ 100 °F (38 °C) (275-475 mm Hg @ 68 °F (20 °C))	Vapor Density:	AP 3-4
Boiling Point:	85-437 °F (39-200 °C)	Melting Point:	ND
Solubility (H2O):	Negligible to Slight	Specific Gravity:	0.70-0.78
Evaporation Rate:	10-11	VOC:	ND
Percent Volatile:	100%	Octanol/H2O Coeff.:	ND
Flash Point:	-45 °F (-43 °C)	Flash Point Method:	PMCC
Upper Flammability Limit (UFL):	7.6%	Lower Flammability Limit (LFL):	1.4%
Burning Rate:	ND	Auto Ignition:	>530°F (>280°C)

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products

Keep away from strong oxidizers.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

*** Section 11 - Toxicological Information ***

Acute Toxicity

A: General Product Information

Harmful if swallowed.

B: Component Analysis - LD50/LC50

Gasoline, motor fuel (86290-81-5)

Inhalation LC50 Rat >5.2 mg/L 4 h; Oral LD50 Rat 14000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Toluene (108-88-3)

Inhalation LC50 Rat 12.5 mg/L 4 h; Inhalation LC50 Rat >26700 ppm 1 h; Oral LD50 Rat 636 mg/kg; Dermal LD50 Rabbit 8390 mg/kg; Dermal LD50 Rat 12124 mg/kg

Butane (106-97-8)

Inhalation LC50 Rat 658 mg/L 4 h

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Xylenes (o-, m-, p- isomers) (1330-20-7)

Inhalation LC50 Rat 5000 ppm 4 h; Inhalation LC50 Rat 47635 mg/L 4 h; Oral LD50 Rat 4300 mg/kg; Dermal LD50 Rabbit >1700 mg/kg

Benzene, 1,2,4-trimethyl- (95-63-6)

Inhalation LC50 Rat 18 g/m³ 4 h; Oral LD50 Rat 3400 mg/kg; Dermal LD50 Rabbit >3160 mg/kg

Ethyl alcohol (64-17-5)

Oral LD50 Rat 7060 mg/kg; Inhalation LC50 Rat 124.7 mg/L 4 h

Ethylbenzene (100-41-4)

Inhalation LC50 Rat 17.2 mg/L 4 h; Oral LD50 Rat 3500 mg/kg; Dermal LD50 Rabbit 15354 mg/kg

Benzene (71-43-2)

Inhalation LC50 Rat 13050-14380 ppm 4 h; Oral LD50 Rat 1800 mg/kg

Hexane (110-54-3)

Inhalation LC50 Rat 48000 ppm 4 h; Oral LD50 Rat 25 g/kg; Dermal LD50 Rabbit 3000 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Moderate irritant. Contact with liquid or vapor may cause irritation.

Potential Health Effects: Ingestion

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Potential Health Effects: Inhalation

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This product may cause genetic defects.

Carcinogenicity

A: General Product Information

May cause cancer.

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IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.

This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.

B: Component Carcinogenicity

Gasoline, motor fuel (86290-81-5)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Toluene (108-88-3)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Xylenes (o-, m-, p- isomers) (1330-20-7)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Ethyl alcohol (64-17-5)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 100E [in preparation] (in alcoholic beverages); Monograph 96 [2010] (in alcoholic beverages) (Group 1 (carcinogenic to humans))

Ethylbenzene (100-41-4)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 77 [2000] (Group 2B (possibly carcinogenic to humans))

Benzene (71-43-2)

ACGIH: A1 - Confirmed Human Carcinogen

OSHA: 5 ppm STEL (Cancer hazard, Flammable, See 29 CFR 1910.1028, 15 min); 0.5 ppm Action Level; 1 ppm TWA

NIOSH: potential occupational carcinogen

NTP: Known Human Carcinogen (Select Carcinogen)

IARC: Monograph 100F [in preparation]; Supplement 7 [1987]; Monograph 29 [1982] (Group 1 (carcinogenic to humans))

Reproductive Toxicity

This product is suspected of damaging fertility or the unborn child.

Specified Target Organ General Toxicity: Single Exposure

This product may cause drowsiness or dizziness.

Safety Data Sheet

Material Name: Gasoline All Grades

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Specified Target Organ General Toxicity: Repeated Exposure

This product causes damage to organs through prolonged or repeated exposure.

Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

Very toxic to aquatic life with long lasting effects. Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Gasoline, motor fuel (86290-81-5)

Test & Species

Conditions

96 Hr LC50 Alburnus alburnus	119 mg/L [static]
96 Hr LC50 Cyprinodon variegatus	82 mg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	56 mg/L
24 Hr EC50 Daphnia magna	170 mg/L

Toluene (108-88-3)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	15.22-19.05 mg/L [flow-through]	1 day old
96 Hr LC50 Pimephales promelas	12.6 mg/L [static]	
96 Hr LC50 Oncorhynchus mykiss	5.89-7.81 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	14.1-17.16 mg/L [static]	
96 Hr LC50 Oncorhynchus mykiss	5.8 mg/L [semi-static]	
96 Hr LC50 Lepomis macrochirus	11.0-15.0 mg/L [static]	
96 Hr LC50 Oryzias latipes	54 mg/L [static]	
96 Hr LC50 Poecilia reticulata	28.2 mg/L [semi-static]	
96 Hr LC50 Poecilia reticulata	50.87-70.34 mg/L [static]	
96 Hr EC50 Pseudokirchneriella subcapitata	>433 mg/L	
72 Hr EC50 Pseudokirchneriella subcapitata	12.5 mg/L [static]	
48 Hr EC50 Daphnia magna	5.46 - 9.83 mg/L [Static]	
48 Hr EC50 Daphnia magna	11.5 mg/L	

Xylenes (o-, m-, p- isomers) (1330-20-7)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	13.4 mg/L [flow-through]
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96 Hr LC50 Oncorhynchus mykiss	2.661-4.093 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	13.5-17.3 mg/L
96 Hr LC50 Lepomis macrochirus	13.1-16.5 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	19 mg/L
96 Hr LC50 Lepomis macrochirus	7.711-9.591 mg/L [static]
96 Hr LC50 Pimephales promelas	23.53-29.97 mg/L [static]
96 Hr LC50 Cyprinus carpio	780 mg/L [semi- static]
96 Hr LC50 Cyprinus carpio	>780 mg/L
96 Hr LC50 Poecilia reticulata	30.26-40.75 mg/L [static]
48 Hr EC50 water flea	3.82 mg/L
48 Hr LC50 Gammarus lacustris	0.6 mg/L

Benzene, 1,2,4-trimethyl- (95-63-6)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	7.19-8.28 mg/L [flow-through]
48 Hr EC50 Daphnia magna	6.14 mg/L

Ethyl alcohol (64-17-5)

Test & Species

Conditions

96 Hr LC50 Oncorhynchus mykiss	12.0 - 16.0 mL/L [static]
96 Hr LC50 Pimephales promelas	>100 mg/L [static]
96 Hr LC50 Pimephales promelas	13400 - 15100 mg/L [flow-through]
48 Hr LC50 Daphnia magna	9268 - 14221 mg/L
24 Hr EC50 Daphnia magna	10800 mg/L
48 Hr EC50 Daphnia magna	2 mg/L [Static]

Ethylbenzene (100-41-4)

Test & Species

Conditions

96 Hr LC50 Oncorhynchus mykiss	11.0-18.0 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	4.2 mg/L [semi- static]
96 Hr LC50 Pimephales promelas	7.55-11 mg/L [flow- through]
96 Hr LC50 Lepomis macrochirus	32 mg/L [static]
96 Hr LC50 Pimephales promelas	9.1-15.6 mg/L [static]
96 Hr LC50 Poecilia reticulata	9.6 mg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	4.6 mg/L
96 Hr EC50 Pseudokirchneriella subcapitata	>438 mg/L
72 Hr EC50 Pseudokirchneriella subcapitata	2.6 - 11.3 mg/L [static]

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96 Hr EC50 Pseudokirchneriella subcapitata	1.7 - 7.6 mg/L [static]
48 Hr EC50 Daphnia magna	1.8 - 2.4 mg/L

Benzene (71-43-2)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	10.7-14.7 mg/L [flow-through]
96 Hr LC50 Oncorhynchus mykiss	5.3 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	22.49 mg/L [static]
96 Hr LC50 Poecilia reticulata	28.6 mg/L [static]
96 Hr LC50 Pimephales promelas	22330-41160 µg/L [static]
96 Hr LC50 Lepomis macrochirus	70000-142000 µg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	29 mg/L
48 Hr EC50 Daphnia magna	8.76 - 15.6 mg/L [Static]
48 Hr EC50 Daphnia magna	10 mg/L

Hexane (110-54-3)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	2.1-2.98 mg/L [flow-through]
24 Hr EC50 Daphnia magna	>1000 mg/L

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

* * * Section 13 - Disposal Considerations * * *

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

Safety Data Sheet

Material Name: Gasoline All Grades

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*** Section 14 - Transportation Information ***

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Gasoline, motor fuel	86290-81-5	DOT regulated marine pollutant

DOT Information

Shipping Name: Gasoline

UN #: 1203 Hazard Class: 3 Packing Group: II

Placard:



*** Section 15 - Regulatory Information ***

Regulatory Information

A: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Toluene (108-88-3)

SARA 313: 1.0 % de minimis concentration
CERCLA: 1000 lb final RQ; 454 kg final RQ

Xylenes (o-, m-, p- isomers) (1330-20-7)

SARA 313: 1.0 % de minimis concentration
CERCLA: 100 lb final RQ; 45.4 kg final RQ

Benzene, 1,2,4-trimethyl- (95-63-6)

SARA 313: 1.0 % de minimis concentration

Ethylbenzene (100-41-4)

SARA 313: 0.1 % de minimis concentration
CERCLA: 1000 lb final RQ; 454 kg final RQ

Benzene (71-43-2)

SARA 313: 0.1 % de minimis concentration
CERCLA: 10 lb final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule); 4.54 kg final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule)

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Hexane (110-54-3)

SARA 313: 1.0 % de minimis concentration

CERCLA: 5000 lb final RQ; 2270 kg final RQ

SARA Section 311/312 – Hazard Classes

Acute Health

X

Chronic Health

X

Fire

X

Sudden Release of Pressure

--

Reactive

--

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Gasoline, motor fuel	86290-81-5	DOT regulated marine pollutant

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Gasoline, motor fuel	86290-81-5	No	No	No	No	Yes	No
Toluene	108-88-3	Yes	Yes	Yes	Yes	Yes	No
Butane	106-97-8	Yes	Yes	Yes	Yes	Yes	No
Xylenes (o-, m-, p- isomers)	1330-20-7	Yes	Yes	Yes	Yes	Yes	No
Benzene, 1,2,4-trimethyl-	95-63-6	No	Yes	Yes	Yes	Yes	No
Ethyl alcohol	64-17-5	Yes	Yes	Yes	Yes	Yes	No
Ethylbenzene	100-41-4	Yes	Yes	Yes	Yes	Yes	No
Benzene	71-43-2	Yes	Yes	Yes	Yes	Yes	No
Hexane	110-54-3	No	Yes	Yes	Yes	Yes	No

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Safety Data Sheet

Material Name: Gasoline All Grades

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Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Toluene	108-88-3	1 %
Butane	106-97-8	1 %
Benzene, 1,2,4-trimethyl-	95-63-6	0.1 %
Ethyl alcohol	64-17-5	0.1 %
Ethylbenzene	100-41-4	0.1 %
Benzene	71-43-2	0.1 %
Hexane	110-54-3	1 %

Additional Regulatory Information

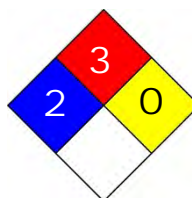
Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Gasoline, motor fuel	86290-81-5	No	DSL	EINECS
Toluene	108-88-3	Yes	DSL	EINECS
Butane	106-97-8	Yes	DSL	EINECS
Xylenes (o-, m-, p- isomers)	1330-20-7	Yes	DSL	EINECS
Benzene, 1,2,4-trimethyl-	95-63-6	Yes	DSL	EINECS
Ethyl alcohol	64-17-5	Yes	DSL	EINECS
Ethylbenzene	100-41-4	Yes	DSL	EINECS
Benzene	71-43-2	Yes	DSL	EINECS
Hexane	110-54-3	Yes	DSL	EINECS

*** Section 16 - Other Information ***

NFPA® Hazard Rating

Health	2
Fire	3
Reactivity	0



HMIS® Hazard Rating

Health	2	Moderate
Fire	3	Serious
Physical	0	Minimal

*Chronic

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet

ATTACHMENT IV RESERVED: Site Safety Audits

(To be developed and inserted)