INVENTUM ENGINEERING, PC

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RE: Surface Water System Maintenance Phase 1 Report, Phase 2 Work Plan
Riverview Innovation & Technology Campus, Inc.
Brownfield Cleanup Program Site No. C915353
Town of Tonawanda, New York

Inventum Engineering, P.C. (Engineering), on behalf of Riverview Innovation & Technology Campus, Inc. (Riverview), is submitting this report of the activities completed in accordance with the Surface Water Sewer System Work Plan (work plan) submitted June 5, and in response to the August 17 and September 16 comments provided by the New York State Department of Environmental Conservation (NYSDEC) for the Riverview Brownfield Cleanup Program (BCP) Site (#C915353) located at 3875 River Road, Tonawanda, New York.

Background and Purpose

The purpose of this phase of the IRM work plan was to determine the sources of flow to the collection system; to the extent possible, evaluate the condition of the system components; and to assess the relationship of those conditions to the ability to meet the requirements of the Surface Water Pollution Prevention Plan (SWPPP, Inventum 2020).

Prior to the October 2018 bankruptcy, Tonawanda Coke Corporation (TCC) operated and managed surface and stormwater under State Pollutant Discharge Elimination System (SPDES) discharge permit NY0002399, which designated four outfalls (Figures 1 and 2) for discharge of surface water:

- Outfall #001 – Non-contact cooling water, boiler blowdown and stormwater runoff from operational areas;
- Outfall #002 – Stormwater runoff from coal pile storage area and coal storage/handling;
- Outfall #003 – Not currently active. Operation of the cogeneration plant that was the sole source of effluent to Outfall #003 ceased in November 2009; and
- Outfall #004 – Combined flow from Outfalls #001, #002, Site 109, two pipes from offsite, and formerly #003. A 15-inch steel and a 12-inch diameter HDPE (possibly the remains of Outfall #003) pipe from the adjacent property discharge to this ditch upstream of the confluence with Outfall #001 and well above Outfall #004.

No data was provided to Inventum for the TCC discharge or compliance.

Background

Beginning in October 2018, the United States Environmental Protection Agency (USEPA), among other tasks, managed the water discharges at the Former TCC properties through their authority as the Emergency Response On-scene Coordinator. Although the former TCC SPDES permit was not in force during this period, Inventum reviewed the surface water data collected by the USEPA (Table 1) and compared the results to the former TCC Permit limits and monitoring only standards. The Riverview data in Table 1 are compared to the SWPPP Action Levels.

The discharges from Outfalls #001 and #002 are located on the Riverview property (Figure 2) and do not directly discharge off the property. These flows migrate on the property where they combine with flow from other non-owned industrial properties before flowing through Outfall #004. Downstream of Outfall #004 the discharges combine with other offsite flows and discharge from the 3875 River Road property. The combined discharges ultimately flow to the Niagara River.

The USEPA maintained control and management of surface water through May 2020. Riverview completed activities to improve stormwater management at the property even before it was responsible for the discharges. Starting at the time of the purchase of the property and increasing after being accepted into the BCP on February 14, 2020 Riverview installed stormwater controls throughout the site. After receiving approval of the Storm Water Pollution Prevention Plan (SWPPP, approved June 1, 2020, Inventum 2020), Riverview has been managing surface water discharge.

The data collected at the Outfalls #001 and #004 in June, July, August, and September are presented in Table 1. There was no flow from Outfall #002 in June. The current and USEPA sample results for samples from Outfalls #002 and #004 have been consistently lower than the former permit guidance and the current SWPPP limits.

The semi-annual list of parameters was analyzed on samples collected by the USEPA from Outfall #001 for October 2018, December 2018, July 2019, October 2019, and December 2019. As shown on Table 1, the analyses in October and December 2018 utilized protocols that did not quantify to the former permit limit concentrations for benzene, naphthalene, or toluene. The same protocol was used for the July 2019 samples, but naphthalene was detected at 0.005 milligrams per liter (mg/L) in the sample and at 0.00529 mg/L in the duplicate sample compared to the former permit limit 0.003 mg/L. The results for the December 2019 sample analyses detected ammonia, cyanide, benzene, naphthalene, and iron. In the January 2020 sample, the USEPA laboratory detected benzene, toluene, and naphthalene, cyanide, and iron above the former TCC SPDES permit guidance. In the February 2020 sample, the USEPA detected iron above the former permit guidance.

The June 17, 2020 sample was the first collected by Riverview under the approved SWPPP. As shown in Table 1, the improvements made by Riverview resulted in concentrations of all compounds below the SWPPP Action Levels with the exception of Ammonia in the sample from Outfall #001. The Ammonia concentration in the sample from Outfall #001 was reduced to 2.8 mg/L verses an Action level of 1.5 mg/L. In accordance with the SWPPP, the data received July 8, 2020 were reported to the DEC on July 10, 2020, and a response action was approved and implemented on July 13, 2020. The July sample from Outfall #001 was collected on July 22, 2020 to quantify the response of the pond system to the response action. The data indicated that all parameters were below the SWPPP Action Levels in the July Sample but that the Ammonia concentration in the August sample was 2.4 mg/L. Resampling for Ammonia in

September showed that the concentrations were well below the Action Level, gin compliance with the SWPPP.

Surface Water Collection System

The surface water collection system at the property is shown schematically on Figure 1 (O'Brien & Gere Engineers, Inc., 2016) and in Table 2 (from SWPPP). In accordance with the Surface Water IRM (Inventum, June 5, 2020) OSC has more accurately defined the surface water collection system. The entire system was investigated by uncovering and surveying the Box Culvert System (see Appendix A), uncovering and vacuuming out the drop inlets along the North Storm Sewer, and cutting the vegetation to allow identification of the North-South Storm Sewer System. The storm sewer sediments appeared to be surface soils and are stockpiled near the northwest corner of the Boiler House. Survey measurements along the systems were collected and are presented in Table 3 and on Figures 3 to 5. The numbers next to the survey points on Figures 3 to 5 correlate to Table 3.

The flow that discharges from Outfall #001 originates from the former process area. The Box Culvert originates at the Compressor Building (Figure 3, Photograph No. 1 in the text[1]). The North Storm Sewer originates next to the firewater standpipe (Figure 3). Flow from north of the production area is conveyed through a series of storm sewers (the North Storm Sewer) to the Mansion Sump Figures 3 and 4). The surface water from the compressor building area, the production area, and portions of the by-product area flows via overland and laterals to the box culvert and then to the Mansion Sump. From the Mansion Sump, the flow discharges to a 24-inch sewer (the North-South Storm Sewer) that conveys the flow to two concrete lined settling ponds operated in series (Figure 2, Photographs 2 and 3) on Site 109. The surface water is retained in the concrete lined settling ponds for a minimum of 6 days (based on the estimated maximum discharge of 50 gallons per minute [GPM]) to allow settling and biological treatment. In June, July and August, the discharge was less than 10 GPM, so during late June through August, water was, on average, treated for the equivalent of 30 days. There were several storms in August that would have reduced the retention time.

The concrete pad to the right (East end) of the concrete lined settling ponds in Figure 2 is a ramp to allow access for cleaning. The flow from the North-South Storm Sewer currently discharges to the north concrete lined settling pond. The flow migrates to the west, over a weir and then east within the south concrete lined sedimentation pond. The flow then discharges over a weir at the southeast end of the south settling pond into a chase. The chase directs flow to the west through a flume (Outfall #001). The chase and flume are within a narrow channel along the south wall of structure in Photographs Nos. 2 and 3.

Underground, east of the ponds is an influent manifold. No as-built drawing of the manifold has been found, but the preliminary design drawing and the valves that are visible suggest a 3-leg manifold into the settling ponds leading to the north pond, south pond, and directly to the chase. During the IRM, efforts to confirm the flow configuration of the manifold were completed. The north valve was closed, and the center and south valve were opened. Opening and closing the valves sequentially produced changes in water level in the Mansion Sump and flow from each pipeline outlet, demonstrating the presence and operation of the manifold.

[1] Note: The eastern end of the Box Culvert is further east than shown on either Figure 1 or TCC Figure T-M-60 (n.d.). The Box Culvert begins at the current compressor building, not the former compressor building.

Stormwater Improvement Activities

Although the USEPA had the authority for stormwater management through May 2020, Riverview was actively improving conditions upgradient of the Outfalls starting in October 2019. Riverview conducted a stormwater inspection soon after the purchase was approved. After the sale was completed, Riverview initiated activities to improve the management of stormwater on the property:

- The Mansion Sump was nearly full of sediment, portions of the accumulated sediment were above the water surface and above the outlet invert, at the time the property was purchased. The sediment was removed from the sump to improve stormwater retention time and to limit the potential for sediment transport to the Concrete-lined Settling Ponds (December 2019);
- A boom was installed across the discharge from the Mansion Sump to limit the movement of lighter than water biological growth (December 2019);
- Stone check dams were constructed across several low areas along the South Ditch to redirect flow to the stormwater collection system (December 2019);
- The eastern end of the South Ditch was dredged to remove coal fines (January 2020 and July 2020);
- Drums and containers were moved away from stormwater inlets (December 2019?);
- Soil and accumulated sediment were removed from the vicinity of the catch basins to allow settling prior to flow to the surface water collection system (January 2020);
- Booms were placed around catch basins and inlets and the stormwater inlet at the warehouse was cleared of soil (January 2020); and
- The coal yard was dewatered (March 2020 to present, ongoing).

These activities may have contributed to the improvement in the water quality at Outfall #001. On June 1, 2020, the SWPPP was approved and that document provides guidance for monitoring after that date. After TCC surrendered the SPDES permit in October 2018, there were no standards for the three outfalls. The USEPA conducted sampling during the interim period and the data made available to Riverview were tabulated (Table 1). Comparing the July data to the last full set of data collected by the USEPA, 3 of the 4 constituents that exceeded the current SWPPP Action Levels during the USEPA sampling event met the SWPPP Action Levels in the June 2020 sampling and analysis event. While the Ammonia concentration in the June sample was lower than the concentration in the USEPA sample collected in December, the concentration in June was not below the Action Level.

In response to the Ammonia concentration in the June sample, under the SWPPP Riverview had the option to resample or propose an action. Riverview elected to take corrective action and installed a pump in the downgradient pond and equipment to broadcast the flow into the upgradient pond. The trial is intended to improve the pond system and thereby increase treatment efficiency by (1) recirculating 60 gallons per minute of flow to increasing the effective detention time and (2) aeration of the discharge to increase the dissolved oxygen concentration in the pond system. Photograph No. 3 shows the recirculation pump installed between the ponds. The recommendations in this IRM Work Plan are intended to remove a source of materials potentially producing Ammonia or that contain other compounds limiting denitrification. The September water samples from the Mansion Sump (not a compliance point) were in excess of 1.5 mg/L Ammonia, suggesting the ponds were effective but that there is Ammonia being introduced from upstream locations.

Phase 1 - Scope of Work Summary

A phased approach was implemented to define the stormwater collection network in the former process area. The surface water system in the coal and coke yards is understood. The work implemented to date is described in the following sections of this summary.

System Mapping and Hydraulics

The understanding of the potential sources of the flow and concentrations of constituents in the Outfall #001 discharge were the principle objective of this phase of the IRM. The exact routes of the sewers leading to the concrete-lined settling ponds was unknown. The available drawings are not complete or consistent with field observations. During this Phase, the following activities were conducted:

Surface Water System Alignment – The alignments of the sewers were defined:

1. Box culvert – The box culvert alignment was depicted as a relatively straight conveyance in the 2016 Audit (Figure 1). The Box Culvert alignment does not follow a direct path along "Broadway[2]" and the upstream location of the storm sewer watershed was farther northeast than anticipated (Table 1 and Figures 1 and 3). The entire length of the Box Culvert to the Compressor Building has been unearthed and the covers opened to determine (1) the locations of laterals conducting flow to or away from the culvert (Table 4 and Appendix A), (2) the quantity of sediment in the system, and (3) what actions are required to protect the system from additional accumulations of sediment. The orientation of the box culvert, the locations of pipes leading to and from the box culvert, and the depth of sediment in the box culvert was surveyed using GPS survey equipment and a drone. In addition, several sections of the system had collapsed, a drop inlet near the boiler house and numerous sections of the concrete covers. These collapsed sections created conditions that accelerated flow in the immediate vicinity of, and to, the box culvert and therefore increased the capacity for, and transport of sediment.
2. Compressor Building Drainage (building number 66, Figure 3) – It was unknown how the area near the former compressor building drains. The heavy vegetation in the area was cut and the Interim Site Management Work Plan was implemented to allow an inspection of the area. It was discovered that the box culvert alignment crosses between two of the former purifier boxes and drains the area west of the compressor building (See Photograph No. 1 in text, below). This area may be a contributor of iron, hence the orange color, in the sediment throughout the box culvert and in the Mansion Sump;

[2] "Broadway" is the name given to the plant road between the battery and the by-products area by TCC. It has been retained as a reference that is understood by former plant and current OSC site staff.

Photograph No. 1

Beginning of the Box Culvert
View Looking South, July 2020

Notes:

1. Box Culvert Starts near the small white block building near the Compressor Building
2. Box Culvert goes Between to two Former Purifier Boxes (next to excavator in picture, flowing South)
3. Compressor Building is to the Left (East)

3. Manifold at Settling Ponds - Efforts to confirm the flow configuration and operation of all valves controlling flow from the manifold (Figure 2) were complicated by the extremely dry weather in the spring and early summer 2020. Each valve at the concrete lined settling ponds was checked and opened. The valves were all closed, and the Mansion Sump water level rose. As each of the South and Center valves were opened, the water level in the sump responded and demonstrated the ability to redirect flow through the settling pond system and to the monitoring point at the Outfall 001 location.

Photograph No. 2
Settling Ponds (View Looking West) Before Aeration Testing
May 2020

Photograph No. 3
Settling Ponds (View Looking West) During Aeration Test
July 2020

4. Northern Storm Sewer – The alignment from the Oil House (building number 6, Figure 3) to the Mansion (building number 1, Figure 3) sump is shown on Figure 11. The drop inlets that could be

accessed were opened and the pipes in the inlets were mapped. The location of the North Storm Sewer from the Oil House Area to the Fire Water Standpipe is north of the location previously documented. The flow configuration the storm sewer network at the Mansion sump (structure number 2, Figure 3) is shown on Figure 8.

5. North-South Storm Sewer - The location and number of manholes along the north south storm sewer between the Mansion Sump and the concrete lined settling ponds was unknown. The vegetation along this alignment was cut, the manholes identified and opened to map piping into and from the manholes. The alignment and manholes have been identified and are shown in the Figures.

The amount of sediment identified in the Box Culvert was more than what had been anticipated. The average sediment depth in the Box Culvert was greater than 24-inches. Based on the 1,500-foot length, an average depth of 24-inches and an average width of 30-inches, the volume of sediment in the system is estimated to be approximately 7,500 cubic feet. No sediment was recovered during the first phase. Three samples of the water and one sample of the sediment were collected in February, two samples of water and five samples of sediment were collected in September. The water sample results are summarized in Table 5. Aluminum, Iron, Manganese, Zinc and Benzene were detected in the water samples. Th pH in the samples were lower than measured in the Outfall. The February sediment sample (Table 6) contained 18 compounds that are monitored in the SWPP quarterly and semi-annual program. The September sediment samples contained similar suites of constituents, ammonia, and cyanide.

Phase 1 - Findings and Recommendations

During the initial phase of the Surface Water IRM the following findings were made:

- The July sample at Outfall #001 contained Ammonia at a concentration slightly above the Action Level.
- Samples of liquid and sediment were planned for the investigation program to confirm the February data (Tables 5 and 6) and to analyze for Ammonia. Unfortunately, during the investigation phase of work there was no significant precipitation. Areas that had previously flowed continuously, were dry or stagnant. In areas of stagnant water, a biological sheen was evident. None-the-less, the February data indicated that at that time the water quality in the Mansion Sump and Box Culvert required treatment in the Concrete-lined Settling Ponds before discharge.
- The low flow condition eliminated the opportunities and applicability of the collection of samples of liquid but allowed direct observation of the quantity of sediment that had been below the water surface during previous inspections. The accumulated sediment occupies as much as 70 percent of the flow cross section of the Box Culvert along Broadway. The constriction of flow creates the potential for two issues (1) mobilization of the sediment to downstream portions of the storm sewer system and (2) backup and flooding of areas draining to the system. The sample of sediment collected in February indicated that 18 of the constituents in the SWPPP sampling program are present in the sediment.
- Six samples of sediment were collected (Table 6). The samples were analyzed for disposal characteristics including TAL Metals, TCL Semi-volatile Organic Compounds, TCL Volatile Organic Compounds, Polychlorinated Biphenyl's, Ammonia, Cyanide, Reactivity, Ignitability, Corrosivity, and the Toxicity Characteristic Leaching Procedure (TCLP). The sample locations were selected

based on potential sources to the settling ponds, either in the Mansion Sump, or downstream of a surveyed outfall to the box culvert. The samples with numerical digits after SD-BC-####-date, refer to the survey locations on the figures as located during the initial investigations.

- The sample locations are shown on the figures:
    - SD-MS-09082020 – Mansion Sump Sediment – Figure 9;
    - SD-BC-1415-09082020 – North South section of the Box Culvert west of the Maintenance Building (Building #8) – Figure 9;
    - SD-BC-1350-09082020 – East West section of the Box Culvert south of the Maintenance Building (Building #8), immediately north of the Light Oil Area Secondary Containment – Figure 12;
    - SD-BC-1329-09082020 – East West section of the Box Culvert south of the Exhauster Building (Building #20), north of the Coal Breaker Building (Building #55) – Figure 14;
    - SD-BC-1266-09082020 – East West section of the Box Culvert south of the Pump House (Building #38), north of the remaining Battery (Building #56) – Figure 16; and
    - SD-BC-1219-09082020 – East West section of the Box Culvert south of the western most Purifier (Building #68) – Figure 20.
- Five (5) pipes and the box culvert penetrate the walls of the Mansion Sump. Of those; (1) the North Storm Sewer Pipe discharges into the Mansion Sump through the east wall, although the flow appears to be constricted, (2) the box culvert discharges into the southwest corner, and (3) the North South Storm Sewer draining the Mansion Sump through the west wall. No flow was detected in the other pipes.
- The Mansion Sump is accumulating sediment. The sump was cleaned in December 2019 and has accumulated approximately 8 cubic yards of additional sediment in the past 8 months. The booms installed by Riverview are controlling migration of the biological sheen from the Mansion Sump as no sheen is visible in the settling ponds.
- The North-South Sewer System does not appear to be accumulating sediment at the rate of the upstream system.
- None of the identified laterals to the box culvert produced flow, although most pipes not associated with stormwater were completely clogged and would not have been capable of conveying water had there been precipitation. Twenty (20) of the laterals are at locations that have either been taken out of service or are scheduled for demolition (Table 4, Blue Highlights). Six laterals are potentially out of service and should be investigated while the Box Culvert is being cleaned to control any sediment flowing from these conduits (Table 4, Gray Highlights). The green shaded laterals are those to remain in service until the associated buildings are demolished or a remedial action is defined.
- The conditions in the concrete-lined settling ponds are adjusting to the recirculation and added dissolved oxygen. Under current conditions, the appearance of the ponds has improved, and the water quality improved to the point that all compounds were below the SWPPP Action Levels in July and only Ammonia exceeded the Action Levels in the August sample.

Proposed Phase 2 Scope of Work

Based on the observations of the system, the following recommendations are made, especially if the opportunity to complete the work during the dry summer months is possible:

1. Aeration Testing – Test the aeration to determine if the effectiveness of the settling ponds improves.
2. Surface Water Control – The transport of sediment in surface water flow to the sewer system has been reduced due to the surface cleanup and less concentration overland flow and the removal of materials with fine particulates. The transport of sediment should be minimized to reduce the possibility of re-accumulation of sediment in the surface water conveyance system.
3. Remove Sediment and Debris from the Box Culvert – The box culvert contains substantial amounts of sediment. The constriction of flow by the sediment, increases the flow velocity and potential for transport of this material to the downstream components of the surface water treatment system. It is much more efficient to clean the Box Culvert than the downstream components, reducing loading to the Mansion Sump and settling ponds. None of the sediment samples (Table 6) indicate the potential for any hazardous or toxic (PCBs) wastes in the box culvert. The concentration of Ammonia in the box culvert sediment samples ranged from 152 mg/Kg to 12.9 mg/Kg.
4. Remove Sediment from Mansion Sump – The Mansion Sump Is a sediment trap and oil skimming vault before the flow enters the North-South Storm Sewer and the concrete-lined sediment ponds. The sump was cleaned in December but has accumulated additional sediment. After the Surface Water Controls and clearing the Box Culvert, removing the residuals from the Mansion Sump will reduce the potential for loading to the settling ponds and will set a baseline for monitoring the improvement in the production area surface water controls. None of the sediment samples (Table 6) indicate the potential for any hazardous or toxic (PCBs) wastes in the Mansion Sump. The concentration of Ammonia in the box culvert sediment sample was 79 mg/Kg.
5. Laterals – The ends of seventy-three (73) pipes, drop inlets and sumps have been identified in the storm sewer investigation. The pipes vary in size from 2- to 18-inches in diameter. While the majority are identified as stormwater conveyances, twenty (Table 2 Highlighted in Blue) appear plugged and may be historic production drains that were taken out of service decades ago. The ends of the undefined pipes should be cleaned and plugged to prevent future unrestricted discharges to the Box Culvert during and following demolition.
6. Trace the North Sewer – The exact alignment of the North Sewer is unknown in the vicinity of the Oil House and Mansion Sump. A utility locator will be used to attempt to track these lines.
7. Monitoring – In addition to the monitoring required under the SWPPP, the erosion and sediment controls preventing buildup of sediment in the storm sewer system should be inspected after all rain events in excess of 0.5 inch.

Aeration Testing

The aeration of the concrete lined settling ponds has produced noticeable improvement in the clarity of the ponds, and based on field measurements has raised the dissolved oxygen concentration above the target of 5 mg/L. The ponds pH is above 7.5 and with the increased dissolved oxygen, conditions are more favorable for denitrification of the water and for aerobic degradation of organic compounds.

Continuing the aeration test for an additional 4 weeks will provide time for (1) the development and maintenance of a healthy population of aerobic bacteria, (2) receipt and evaluation of the September Surface Water Discharge Data, (3) completion of this IRM, and (4) development of a protocol for operation of the pumping/aeration system. Following the IRM and subsequent discharge data, recommendations on the frequency of operation and the position of the pump will be made.

Surface Water Control

The work conducted to identify the North Storm Sewer and the Box Culvert required movement of soils and sediments over and near the drop inlets and throughout the length of the Box Culvert. Several of the North Sewer System drop inlets were completely full of sediment or buried, and numerous sections of the Box Culvert cap were missing. The transport of sediment in surface water flow to the sewer system should be minimized. The surface water system was designed for water conveyance and treatment, not a heavy sediment load.

The drop inlets along the north storm sewer were surrounded with sediment socks or gravel check berms to limit the migration of soil and fine materials from the surface to the sewer system (Appendix A). The socks are secured in place and should be inspected monthly and after all precipitation events in excess of 0.5 inches of water. In the winter, the locations should be marked with traffic cones or drums to mark the locations and avoid damage during snow removal.

Significant sources of sediment to the Box Culvert were eliminated during the Phase 1 investigation, including; (1) the collapsed section of the Box Culvert near the Power House, (2) the covering of the open sections of the Box Culvert with the existing covers that are intact or new concrete or steel plates, (3) removal of the loose soils and other fine materials over the Box Culvert along Broadway and along the former parking area, and (4) control of dust and other airborne particulates that could eventually migrate to the Box Culvert. Two potential sources of flow and sediment to the Box Culvert exist in the vicinity of the Compressor Building and Purifier Boxes (Figures 19 and 20) and near the east end of Battery No. 2 (Figure 18). The exposed iron oxide has been consolidated and covered to eliminate direct contact with precipitation. Silt fences or stone check dams should be constructed to manage the transport of sediment from these areas. The erosion controls should be secured in place with stakes and ties and should be inspected monthly and after all precipitation events in excess of 0.5 inches of water.

These controls are intended to reduce the potential for significant accumulation of sediment on the storm sewer systems under normal ongoing maintenance at the site. Specific additional controls may be required during Interim Remedial Measures, Demolition, and Remedial Actions.

Remove Sediment and Debris from the Box Culvert

The box culvert contains substantial amounts of sediment. After the Surface Water Controls are in place, removal of the sediment will reduce the sediment loading to the Mansion Sump. The Box Culvert along Broadway is approximately 1500 feet long. It is approximately 30-inches wide and is filled with 24- to 30-inches of sediment along Broadway and miscellaneous debris in the north-south section leading to the Mansion Sump.

The sediment in the Box Culvert along Broadway is fine grained and appears to produce a biological film (Appendix A). The analysis of a sample from February 2020 indicated that the materials contained SVOCs, metals and Ammonia (Table 6). Additional samples of sediment will be collected in September.

Removing this material will allow the storm sewer system to convey water from the site to the treatment system more quickly and efficiently. This will reduce the loading to the surface water management system and potentially to groundwater. The Box Culvert contains approximately 7,500 cubic feet of sludge, estimated to be 45% solids. Material of this character typically weigh approximately 90 pounds per cubic foot, so there is an estimated 350 tons of material in the system.

The material can be removed from the east to the west with excavation equipment and a vacuum truck. The recovered sediment should be placed in a double lined containment area and the water allowed to decant. Decontamination and decanted waters will be filtered through PS2-50 (50-micron filters) before discharge to the POTW. The sediments remaining after decanting free liquids, will require stabilization with sawdust before they can be transported for disposal at a non-hazardous waste landfill.

Following removal of the sediment, the box culvert covers should be replaced with existing cover components that are in satisfactory condition, and new concrete or steel materials where necessary due to a shortage of satisfactory existing materials. A layer of geotextile should be placed over the Box Culvert covers that will be backfilled with soil. At those locations where surface water flow to the Box Culvert is required or desired, silt fence or filter socks should be placed to protect the inlet.

Remove Sediment from Mansion Sump

The Mansion Sump is an accumulation point for surface water from the production area, a sediment trap, and an oil skimming vault at the location before surface water flow enters the North-South Storm Sewer and the concrete-lined sediment ponds. The sump was cleaned in December 2019 but has accumulated additional sediment from the storm water systems since that cleaning. After the Surface Water Controls and clearing the Box Culvert, removing the residuals from the Mansion Sump will allow monitoring the improvement in the production area surface water controls and set the baseline condition for sediment migration.

The material can be removed from the Mansion Sump with excavation equipment or a vacuum truck. The recovered sediment should be placed in a double lined containment area and the water allowed to decant. Decanted waters will be filtered through PS2-50 (50-micron filters) before discharge to the POTW. The sediments remaining after decanting free liquids, will be sampled, and analyzed and will require stabilization with sawdust before they can be transported for disposal at a non-hazardous waste landfill.

Trace North Sewer

The North Storm Sewer has been producing flow since the inlets were cleared. The North Storm Sewer will be traced using a utility locator to the extent possible. If the locator does not produce a usable signal, additional cleaning and inspection will be conducted.

Laterals

The ends of seventy-three (73) pipes, drop inlets and sumps have been identified in the storm sewer investigation (Table 4). The pipes vary in size from 2- to 18-inches in diameter. While the majority are identified as stormwater conveyances, twenty (Table 4 Highlighted in Blue, Larger callouts on Figures 6 through20) appear plugged and may be historic production drains that were taken out of service decades ago. A minimum of one foot or twice the diameter, whichever is greater, from the ends of the twenty undefined pipes will be cleaned. The pipes will be plugged with a mechanical plug, hydraulic

cement, or epoxy grout. As they are plugged, they shall be documented by the Survey Point Number from Table 4 so they can be located during future remedial actions. Six laterals may still be required to manage surface water at the site (Table 4, Highlighted in Gray). These will be cleaned and inspected while the Box Culvert is being cleaned. If they trace to a drop inlet they should be preserved. If they trace to a production area, they should be sealed following the procedures above.

Monitoring

In addition to the monitoring required under the SWPPP, the erosion and sediment controls preventing buildup of sediment in the storm sewer system should be inspected after all rain events in excess of 0.5 inch.

Tables

Table 1
Outfall Sample Data
October 2018 to June 2020

Outfall 001

PARAMETER	FORMER TCC PERMIT REQUIREMENT			QUANTITY OR CONCENTRATION (USEPA SITE MANAGEMENT PERIOD)															
SAMPLE DATE >				23-Oct-18		Dec. 12 and 13, 2018		Feb. 5 and 6, 2019		Feb. 26 and 27, 2019		Mar. 19 and 20, 2019		Apr. 16 and 17, 2019		May 20 - 22, 2019		Jun. 18 - 20, 2019	
	MINIMUM	MAXIMUM	UNITS	Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate	
Flow		Monitor Only	GPM	NS		1,410		309		107		105		157		72		81	
Flow		Monitor Only	GPD			2,030,000		445,000		154,000	0	151,000	0	226,000	0	103,000		117,000	
pH	6.0	9.0	S.U.	8.35		7.82		8.3		6.3		7.1		7.3		7.2		7.4	
Total Suspended Solids (Net)		50	mg/l	NS		0		33		35		24		25		10 U		10 U	
Oil & Grease (Net)		15	mg/l	<5.8U		<5.7U		5.4 U		6.0 U		5.5 U		5.9 U		5.6 U		5.8 U	
Temperature		102	°F	56.6		39.7		50.2		35.6		48.5		47.1		70.7		72.0	
Ammonia (as N)		1.5	mg/l	<0.1U		<0.10U													
Ammonia (as N)		Monitor Only	Lb./Day	N.D.		N.D.		0	0	0	0	0	0	0	0	0	0	0	0
Total Cyanide		0.03	mg/l	<0.001U		<0.01U													
Total Cyanide		Monitor Only	Lb./Day	N.D.	0	N.D.		0	0	0	0	0	0	0	0	0	0	0	0
Phenol (Net)		0.03	mg/l	NS		0													
Phenol (Net)		Monitor Only	Lb./Day	NS	0	N.D.		0	0	0	0	0	0	0	0	0	0	0	0
Benzene		0.0015	mg/l	*<0.005U*		*<0.005U*													
Benzene		Monitor Only	Lb./Day	N.D.	0	N.D.		0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene		0.002	mg/l	NS		NS													
Benzo(a)pyrene		Monitor Only	Lb./Day	NS	0	NS		0	0	0	0	0	0	0	0	0	0	0	0
Naphthalene		0.003	mg/l	*<0.00515*		*<0.0054U*													
Naphthalene		Monitor Only	Lb./Day	N.D.	0	N.D.		0	0	0	0	0	0	0	0	0	0	0	0
Toluene		0.003	mg/l	*<0.005U*		*<0.005U*													
Toluene		Monitor Only	Lb./Day	N.D.	0	N.D.		0	0	0	0	0	0	0	0	0	0	0	0
Flourene		1.5	mg/l	NS		0.13													
Surfactant		0.5	mg/l	NS		<0.1U													
Iron		4	mg/l																

PARAMETER	Jul. 29 and 30, 2019		Aug, 28 and 29, 2019		Sept. 23 and 25, 2019		29-Oct-19		26-Nov-19	
	Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate	
Flow	NM		NM		NM		NM		NM	
Flow										
pH	7.6		7.0		6.3					
Total Suspended Solids (Net)	10 U	10 U	10 U	10 U	10 U	10U				
Oil & Grease (Net)	5.9 U	5.9 U	5.4 U	5.7 U	5.9 U	5.8 U	5.6UJ	5.6UJ	5.4U	
Temperature	73		67.3		73.4					
Ammonia (as N)	0.86	0.88								
Ammonia (as N)	NM	NM	0	0	0	0	0	0	0	0
Total Cyanide	0.01 U	0.01 U								
Total Cyanide	N.D.	N.D.	0	0	0	0	0	0	0	0
Phenol (Net)	0.01 UJ, L									
Phenol (Net)	N.D.	NM	0	0	0	0	0	0	0	0
Benzene	*5.00 U*	*5.00 U*								
Benzene	N.D.	N.D.	0	0	0	0	0	0	0	0
Benzo(a)pyrene										
Benzo(a)pyrene	0	0	0	0	0	0	0	0	0	0
Naphthalene	***0.005***	***0.00529***								
Naphthalene	NM	NM	0	0	0	0	0	0	0	0
Toluene	*0.005 U*	*0.005 U*								
Toluene	NM	NM	0	0	0	0	0	0	0	0
Flourene	0.68	0.67								
Surfactant	0.1 U	0.1 U								
Iron									***7.63***	

PARAMETER	17-Dec-19		28-Jan-20		28-Feb-20		1-Mar-20		Riverview Monitoring 17-Jun-20		22-Jul-20		20-Aug-20		15-Sep-20	
	Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate	
Flow									10		10		10			
Flow									14400		14400		14400			
pH											8.32		8.17	8.5	8.65	8.42
Total Suspended Solids (Net)											1.5					
Oil & Grease (Net)	5.7U										<4.99		<4.8			
Temperature											88					
Ammonia (as N)	***3.6***								2.8		0.271		2.6		0.167	0.109
Ammonia (as N)	0	0	0	0	0	0	0	0	0.34		0.03		0.31		0.00	0
Total Cyanide	***0.05***		***0.056***						0.0123		<0.01					
Total Cyanide	0	0	0	0	0	0	0	0	0.0015							
Phenol (Net)	.011L								<0.030		<0.030					
Phenol (Net)	0	0	0	0	0	0	0	0	<0.004							
Benzene	***0.009***								<0.001		<0.001					
Benzene	0	0	0	0	0	0	0	0	0.0000							
Benzo(a)pyrene	U								<0.00966		<0.010					
Benzo(a)pyrene	0	0	0	0	0	0	0	0	<0.0012							
Naphthalene	***0.012***								<0.00966		<0.010					
Naphthalene	0	0	0	0	0	0	0	0	<0.0012							
Toluene	U								<0.2		<0.002					
Toluene	0	0	0	0	0	0	0	0	0							
Flourene	0.63															
Surfactant	U								0.19		0.14					
Iron	***13.6***		***18.0***		***22.0***		***22.0***		0.411		<0.05					

Table 1
Outfall Sample Data
October 2018 to June 2020

Outfall 002

PARAMETER	FORMER TCC PERMIT REQUIREMENT			QUANTITY OR CONCENTRATION (USEPA SITE MANAGEMENT PERIOD)																										Verification of System Performance		QUANTITY OR CONCENTRATION		Verification of System Performance					Riverview Monitoring							
SAMPLE DATE >				23-Oct-18	23-Oct-18	Dec. 12 and 13, 2018		Feb. 5 and 6, 2019		Feb. 26 and 27, 2019		Mar. 19 and 20, 2019		Apr. 16 and 17, 2019		May 20 - 22, 2019		Jun. 18 - 20, 2019		Jul. 29 and 30, 2019		Aug, 28 and 29, 2019		Sept. 23 and 25, 2019				26-Nov-19		December 5, 2019 (Not for Compliance Purposes)		17-Dec-19		December 26, 2019 (Not for Compliance Purposes)		Summary			17-Jun-20		22-Jul-20		20-Aug-20		15-Sep-20	
	MINIMUM	MAXIMUM	UNITS	Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate				Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Maximum	Minimum	Average	Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate	
Flow		Monitor Only	GPM	NS		1 inch		1 inch		1 inch		1 inch		1 inch		1 inch		1 inch		NM										30				30		30	30	30	0		0					
Flow		Monitor Only	GPD	NS																										43200				43200		43200	43200	43200	0		0					
pH	6.0	9.0	S.U.	7.99		6.92		8.2		7.1		7.2		6.7		7.4		7.8		7.3										7.4				8.24		8.2	6.7	7.5	N.S.							
Temperature		Not on TCC	°F	50.9				48.7		NM		50.9		47.1		64.2				70.9										36				47		70.9	36	52	N.S.							
Total Suspended Solids		50	mg/l	NS		<10U		50		11		11		10 U		10 U		10 U												4.8				N.S.		50	4.8	19.2	N.S.							
Iron		4	mg/l	0.1		0.74		3.44		1.35		0.79		0.759	0.702	0.469	0.860	0.187	0.0595									1.02	0.196	0.214		0.459	0.498	N.S.		3.44	0.060	0.740	N.S.							
Cyanide		0.1	mg/l	<0.01U		0.021L																						0.042	.010U	<0.0100		0.022	0.022	N.S.		0.042	0.022	0.02866667	N.S.							
Copper		0.2	mg/l	<0.01U		NS																						0.010U	.020U	<0.0400				N.S.					N.S.							
Nickel		0.5	mg/l	<0.02U		0.042																						0.020U	.020U	<0.0400				N.S.		0.042	0.042	0.042	N.S.							
Zinc		0.5	mg/l	<0.02U		0.142																						0.406	0.0207	0.0349J		0.035	0.0349	N.S.		0.406	0.0207	0.12772	N.S.							
Surfactant		0.5	mg/l			<0.10U																								N.S.		U		ND					N.S.							
Aluminum		1	mg/l	0.25		0.147																						0.247	.100U	<0.100		0.16	0.164	N.S.		0.25	0.15	0.19	N.S.							
Manganese		1	mg/l	0.047		0.818																						0.289	0.126	0.136		0.252	0.253	N.S.		0.818	0.047	0.274	N.S.							

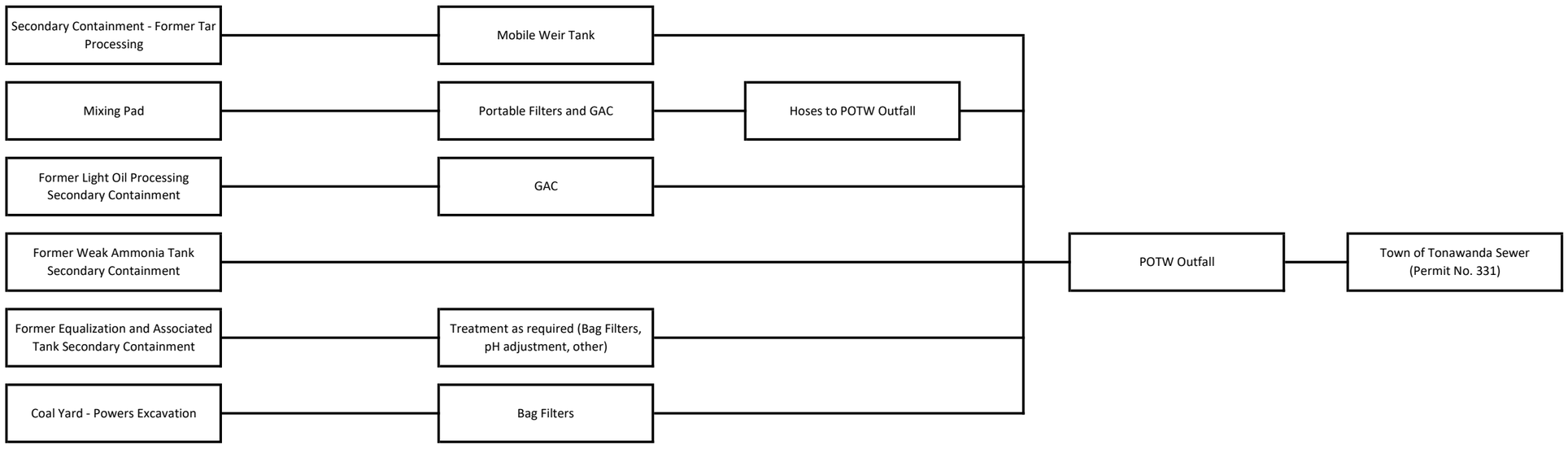
Outfall 004

PARAMETER	FORMER TCC PERMIT REQUIREMENT			QUANTITY OR CONCENTRATION (USEPA SITE MANAGEMENT PERIOD)																				Riverview Monitoring							
SAMPLE DATE >				23-Oct-18	23-Oct-18	Dec. 12 and 13, 2018		Feb. 5 and 6, 2019		Feb. 26 and 27, 2019		Mar. 19 and 20, 2019		Apr. 16 and 17, 2019		May 20 - 22, 2019		Jun. 18 - 20, 2019		Jul. 29 and 30, 2019		Aug, 28 and 29, 2019				17-Jun-20		22-Jul-20		20-Aug-20		15-Sep-20	
	MINIMUM	MAXIMUM	UNITS	Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate		Result/Duplicate	
Flow (May 1 to Oct. 31)		Monitor Only	GPM	NM		NM		NM		NM		NM		NM		NM		NM		NM		NM		NMR		200		10		10			
Flow (May 1 to Oct. 31)		Monitor Only	GPD																							288000		14400		14400			
Temperature (First Bi-monthly) (May 1 to Oct. 31)		Monitor Only	°F	57		41		43.2		39.9		49.1		50.9		66.5		72.5		70.9		71.3		73.9		88		83		75			
Temperature (Second Bi-monthly) (May 1 to Oct. 31)		Monitor Only	°F																														
Mercury		50	ng/l			<50U						50U														5.2		2.8					
pH		Monitor Only	S.U.	8.44				6.7		7.2		7.5		7.1		7.6		7.7		7.3		7.1		7.4									

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

Notes:
1. 1 mg/l = 8.345 x 10^{-6} pounds per gallon
2. *Detection Limit greater than former discharge standard.*
3. Calculated Value

Table 2
Flow Diagram
Surface Water Management Plan
Riverview Innovation Technology Campus, Inc.
Tonawanda, New York



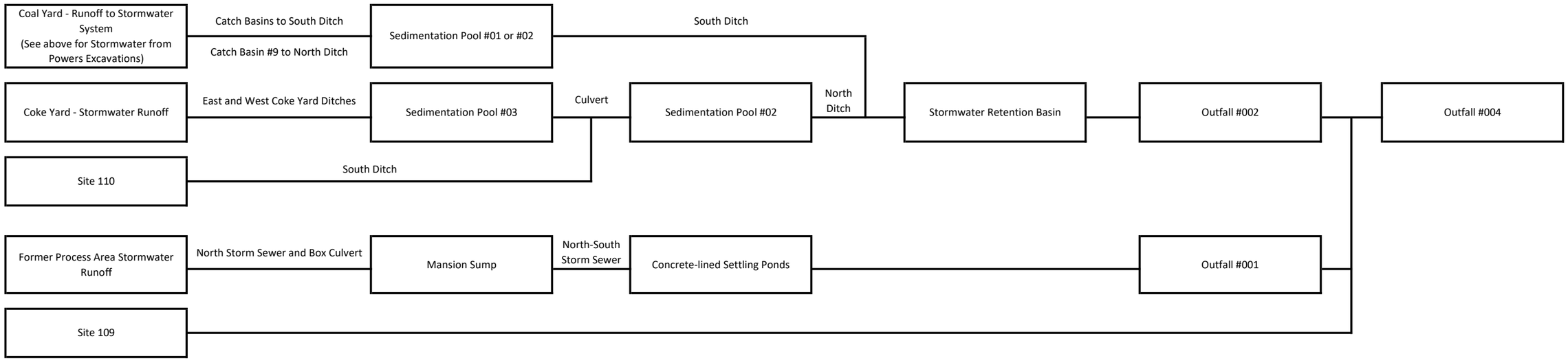


Table 3
Survey Data
Surface Water System
Riverview Innovation Technology Campus, Inc.
Tonawanda, New York

Survey Point Number	Easting	Northing	Elevation	Description
1001	1055384.233	1086931.175	601.276	DI rim
1201	1056904.926	1087468.131	601.931	Box Culvert
1202	1056804.587	1087466.709	601.999	Box Culvert
1203	1056804.629	1087484.25	600.68	Box Culvert
1204	1056799.76	1087485.381	603.408	North 12 in Steel Lateral
1205	1056761.833	1087484.829	603.929	North 6 in Steel Lateral
1206	1056737.13	1087483.331	600.518	Box Culvert
1207	1056712.695	1087481.973	603.882	South 4 in Clay Lateral
1208	1056660.002	1087482.277	600.379	Box Culvert
1209	1056804.547	1087466.485	601.872	South 18 in Clay Lateral
1210	1056926.597	1087466.814	601.977	Box Culvert
1211	1056926	1087562.995	602.48	Box Culvert
1212	1056735.333	1087482.314	603.289	South 6 in Steel Lateral
1213	1056928.19	1087469.059	604.416	Box Culvert
1214	1056924.379	1087471.361	604.286	Box Culvert
1215	1056913.339	1087466.051	604.487	Box Culvert
1216	1056912.867	1087470.197	604.375	Box Culvert
1217	1056878.008	1087465.684	604.523	Box Culvert
1218	1056878.066	1087469.005	604.841	Box Culvert
1219	1056849.11	1087465.339	604.473	Box Culvert
1220	1056847.983	1087469.322	604.437	Box Culvert
1221	1056825.973	1087464.918	604.458	Box Culvert
1222	1056826.425	1087468.868	604.481	Box Culvert
1223	1056806.956	1087464.898	604.277	Box Culvert
1224	1056806.674	1087468.696	604.517	Box Culvert
1225	1056801.27	1087485.831	604.532	Box Culvert
1226	1056800.119	1087482.701	604.459	Box Culvert
1227	1056772.283	1087485.165	604.378	Box Culvert
1228	1056772.96	1087482.474	604.483	Box Culvert
1229	1056751.245	1087484.869	604.412	Box Culvert
1230	1056751.648	1087481.981	604.435	Box Culvert
1231	1056721.668	1087481.605	604.456	Box Culvert
1232	1056721.928	1087484.658	604.421	Box Culvert
1233	1056697.625	1087484.208	604.327	Box Culvert
1234	1056697.457	1087481.663	604.235	Box Culvert
1235	1056682.088	1087481.109	604.095	Box Culvert
1236	1056682.024	1087483.927	603.952	Box Culvert
1237	1056668.094	1087483.826	603.18	Box Culvert
1238	1056668.113	1087480.802	603.382	Box Culvert
1239	1056659.611	1087483.599	603.423	Box Culvert

Table 3
Survey Data
Surface Water System
Riverview Innovation Technology Campus, Inc.
Tonawanda, New York

Survey Point Number	Easting	Northing	Elevation	Description
1240	1056660.11	1087480.768	603.444	Box Culvert
1241	1056592.481	1087470.025	600.53	Box Culvert
1242	1056574.942	1087466.096	600.095	Box Culvert
1243	1056554.646	1087465.827	600.069	Box Culvert
1244	1056537.006	1087465.648	600.003	Box Culvert
1245	1056460.834	1087464.594	599.595	Box Culvert
1246	1056405.722	1087463.59	599.431	Box Culvert
1247	1056366.041	1087463.078	599.516	Box Culvert
1248	1056337.587	1087462.628	599.138	Box Culvert
1249	1056285.911	1087462.038	599.287	Box Culvert
1250	1056591.905	1087468.596	603.028	Box Culvert
1251	1056590.834	1087470.308	603.012	Box Culvert
1252	1056584.906	1087464.654	603.162	Box Culvert
1253	1056584.333	1087467.153	603.124	Box Culvert
1254	1056558.505	1087465.273	603.462	Box Culvert
1255	1056557.684	1087467.278	603.316	Box Culvert
1256	1056479.629	1087463.75	603.229	Box Culvert
1257	1056479.117	1087466.053	603.248	Box Culvert
1258	1056399.759	1087462.524	603.248	Box Culvert
1259	1056399.426	1087464.724	603.187	Box Culvert
1260	1056340.911	1087461.647	603.222	Box Culvert
1261	1056341.878	1087464.059	603.401	Box Culvert
1262	1056287.815	1087461.146	603.205	Box Culvert
1263	1056288.03	1087463.241	603.303	Box Culvert
1264	1056297.685	1087460.819	601.987	4 in Steel Lateral
1265	1056318.867	1087462.941	602.618	3 in Steel Lateral
1266	1056368.684	1087464.153	601.765	North 12 in Cast Iron Lateral
1267	1056373.751	1087463.58	602.014	North 12 in Cast Iron Lateral
1268	1056397.826	1087463.918	602.38	North 3 in Steel Lateral
1269	1056447.278	1087465.466	601.938	North 12 in Steel Lateral
1270	1056446.473	1087465.523	602.717	North 3 in Steel Lateral
1271	1056492.019	1087466.551	602.207	North 12 in Steel Lateral
1272	1056502.631	1087466.245	601.503	North 12 in Steel Lateral
1273	1056534.468	1087466.152	601.429	North 8 in Steel Lateral
1274	1056542.461	1087466.38	601.547	North 12 in Steel Lateral
1275	1056205.053	1087461.104	599.985	Box Culvert
1276	1056183.802	1087460.47	599.106	Box Culvert
1277	1056152.593	1087459.887	599.031	Box Culvert
1278	1056127.577	1087459.898	599.028	Box Culvert
1279	1056104.19	1087459.768	599.306	Box Culvert

Table 3
Survey Data
Surface Water System
Riverview Innovation Technology Campus, Inc.
Tonawanda, New York

Survey Point Number	Easting	Northing	Elevation	Description
1280	1056072.492	1087459.086	598.78	Box Culvert
1281	1056043.136	1087458.749	598.716	Box Culvert
1282	1056015.455	1087458.332	598.633	Box Culvert
1283	1055993.006	1087457.691	598.667	Box Culvert
1284	1055983.818	1087452.31	599.021	Box Culvert
1285	1055972.663	1087451.779	598.499	Box Culvert
1286	1055962.008	1087452.547	598.826	Box Culvert
1287	1055951.4	1087457.815	598.897	Box Culvert
1288	1055931.099	1087457.231	598.561	Box Culvert
1289	1055896.656	1087460.84	600.994	Box Culvert
1290	1055874.539	1087456.521	598.291	Box Culvert
1291	1055850.128	1087456.201	598.252	Box Culvert
1292	1055823.377	1087455.67	598.096	Box Culvert
1293	1055798.081	1087455.348	598.198	Box Culvert
1294	1055769.483	1087455.027	597.858	Box Culvert
1295	1055759.399	1087459.544	597.982	Box Culvert
1296	1055759.715	1087460.254	603.244	Box Culvert
1297	1055758.872	1087458.199	603.308	Box Culvert
1298	1055768.983	1087456.153	603.111	Box Culvert
1299	1055767.957	1087454.23	603.237	Box Culvert
1300	1055820.577	1087456.733	603.162	Box Culvert
1301	1055820.787	1087454.501	603.231	Box Culvert
1302	1055865.562	1087457.214	603.22	Box Culvert
1303	1055865.782	1087455.118	603.233	Box Culvert
1304	1055952.578	1087458.789	603.247	Box Culvert
1305	1055952.641	1087456.697	603.189	Box Culvert
1306	1055963.853	1087452.76	603.191	Box Culvert
1307	1055963.759	1087450.473	603.148	Box Culvert
1308	1055982.304	1087453.121	603.266	Box Culvert
1309	1055981.713	1087450.827	603.259	Box Culvert
1310	1055994.688	1087459.147	603.135	Box Culvert
1311	1055994.958	1087456.952	603.212	Box Culvert
1312	1056052.681	1087460.003	603.276	Box Culvert
1313	1056052.662	1087457.883	603.259	Box Culvert
1314	1056100.066	1087460.531	603.26	Box Culvert
1315	1056100.175	1087458.386	603.196	Box Culvert
1316	1056137.942	1087461.106	603.211	Box Culvert
1317	1056137.84	1087458.939	603.277	Box Culvert
1318	1056188.926	1087461.738	603.3	Box Culvert
1319	1056188.772	1087459.577	603.25	Box Culvert

Table 3
Survey Data
Surface Water System
Riverview Innovation Technology Campus, Inc.
Tonawanda, New York

Survey Point Number	Easting	Northing	Elevation	Description
1320	1056194.377	1087462.214	602.823	North 4 in Steel Lateral
1321	1056089.775	1087460.315	603.124	North 6 in Steel Lateral
1322	1056042.879	1087459.942	602.842	North 4 in Steel Lateral
1323	1055978.951	1087452.512	600.654	North 18 in Steel Lateral
1324	1055976.094	1087452.425	601.74	North 18 in Steel Lateral
1325	1055909.352	1087457.492	602.582	North 8 in Steel Lateral
1326	1055976.14	1087451.303	601.277	South 18 in Cast Iron Lateral
1327	1055979.034	1087451.704	600.697	South 18 in Cast Iron Lateral
1328	1056101.618	1087459.333	601.065	South 6 in Clay Lateral
1329	1056123.645	1087460.25	601.956	North 4 in Steel Lateral
1330	1056133.931	1087460.381	601.66	North 4 in Steel Lateral
1331	1056162.909	1087461.152	602.689	North 6 in Steel Lateral
1332	1056191.338	1087462.062	603.068	North 6 in Steel Lateral
1333	1056193.367	1087461.284	602.307	N-S pass through 6in steel
1334	1056185.503	1087460.408	603.169	N-S pass through 4in steel
1335	1056168.591	1087459.479	601.444	South 8 in Clay Lateral
1336	1056158.886	1087459.344	602.565	North 6 in Steel Lateral
1337	1056125.456	1087458.825	601.732	South 2 in Steel Lateral
1338	1056487.178	1087524.298	602.851	S 12in clay to box culvert
1339	1056488.515	1087525.63	602.483	East 8in Clay Lateral from Boiler House
1340	1056487.161	1087525.341	602.878	West 8 in Clay Lateral
1341	1056488.453	1087525.877	601.876	collection box
1342	1056489.547	1087525.433	606.452	collection box
1343	1056487.926	1087526.817	606.507	collection box
1344	1056486.345	1087525.39	606.545	collection box
1345	1056487.609	1087523.538	606.134	collection box
1346	1055620.465	1087489.453	598.131	Box Culvert
1347	1055627.634	1087488.799	601.054	South 12 in Clay Lateral
1348	1055626.851	1087490.401	603.388	South 4 in Cleanout
1349	1055626.462	1087488.538	602.904	South 4 in Steel Lateral
1350	1055635.328	1087490.278	601.407	North 4 in Steel Lateral
1351	1055647.238	1087495.532	615.628	Box Culvert
1352	1055573.544	1087489.05	602.163	South 8 in Top of Pipe
1353	1055570.598	1087488.668	597.447	Box Culvert
1354	1055559.306	1087488.827	601.344	N-S 6 in Steel Pass Through
1355	1055513.273	1087488.005	597.498	Box Culvert
1356	1055512.379	1087487.129	601.84	South 4 in Steel Lateral
1357	1055549.93	1087487.572	600.241	South 2 foot Bulkhead
1358	1055575.656	1087489.918	603.239	Box Culvert
1359	1055575.821	1087487.662	603.275	Box Culvert

Table 3
Survey Data
Surface Water System
Riverview Innovation Technology Campus, Inc.
Tonawanda, New York

Survey Point Number	Easting	Northing	Elevation	Description
1360	1055619.002	1087490.364	603.352	Box Culvert
1361	1055618.875	1087488.055	603.267	Box Culvert
1362	1055655.585	1087491.059	603.252	Box Culvert
1363	1055655.297	1087488.745	603.235	Box Culvert
1364	1055519.112	1087489.358	603.227	collection box
1365	1055519.086	1087486.872	603.256	collection box
1366	1055503.922	1087488.834	603.252	collection box
1367	1055509.338	1087487.133	603.253	collection box
1368	1055429.112	1087331.658	600.312	collection box
1369	1055428.969	1087376.776	597.996	collection box
1370	1055428.332	1087418.391	597.904	collection box
1371	1055428.23	1087452.761	597.959	collection box
1372	1055427.609	1087483.111	597.614	collection box
1373	1055427.247	1087485.453	597.893	collection box
1374	1055427.277	1087537.996	596.82	collection box
1375	1055428.101	1087536.656	603.142	collection box
1376	1055425.871	1087536.177	603.18	collection box
1377	1055428.577	1087502.099	603.161	collection box
1378	1055426.181	1087501.869	603.201	collection box
1379	1055429.299	1087451.966	603.158	collection box
1380	1055426.835	1087452.367	603.156	collection box
1381	1055429.843	1087404.841	603.158	collection box
1382	1055427.405	1087404.749	603.143	collection box
1383	1055430.371	1087364.667	603.173	collection box
1384	1055427.995	1087364.284	603.144	collection box
1385	1055430.484	1087326.573	603.221	collection box
1386	1055428.136	1087326.452	603.172	collection box
1387	1055426.709	1087495.778	600.973	Collection Box Lateral
1388	1055426.739	1087553.905	596.967	Box Culvert
1389	1055426.316	1087594.828	596.903	Box Culvert
1390	1055425.478	1087633.402	596.998	Box Culvert
1391	1055425.438	1087674.096	596.863	Box Culvert
1392	1055424.3	1087738.198	596.681	Box Culvert
1393	1055423.478	1087779.984	596.5	Box Culvert
1395	1055423.581	1087793.332	597.382	Box Culvert
1400	1055422.687	1087769.418	603.224	Box Culvert
1401	1055424.809	1087768.95	603.16	Box Culvert
1402	1055423.004	1087753.04	603.114	Box Culvert
1403	1055425.122	1087752.786	603.249	Box Culvert
1404	1055423.862	1087762.508	602.357	N-S 1 inch Conduit Passthrough

Table 3
Survey Data
Surface Water System
Riverview Innovation Technology Campus, Inc.
Tonawanda, New York

Survey Point Number	Easting	Northing	Elevation	Description
1405	1055424.282	1087752.724	602.244	North 3 inch Steel Lateral
1406	1055425.77	1087716.726	603.215	Box Culvert
1407	1055423.475	1087716.108	603.156	Box Culvert
1408	1055426.166	1087681.693	603.07	Box Culvert
1409	1055423.948	1087682.036	603.188	Box Culvert
1410	1055426.693	1087638.721	603.171	Box Culvert
1411	1055424.436	1087638.644	603.239	Box Culvert
1412	1055427.404	1087596.736	603.181	Box Culvert
1413	1055425.014	1087596.835	603.169	Box Culvert
1414	1055427.818	1087556.364	603.143	Box Culvert
1415	1055425.558	1087556.14	603.167	Box Culvert
1416	1056490.972	1087674.511	604.926	Collection Box
1417	1056492.79	1087674.29	602.426	East 8 in crrugated Steel Pipe
1418	1056347.444	1087672.95	604.03	Drop Inlet
1419	1056347.539	1087671.528	601.134	Collection Box
1420	1056348.969	1087671.561	601.608	East 16 in Concrete Pipe
1421	1056346.242	1087671.626	601.822	West 16 in Concrete Pipe
1422	1056348.065	1087669.842	602.036	South 16 Inch Steel Pipe
1423	1056011.623	1087639.205	604.67	Drop Inlet
1424	1056012.936	1087638.791	602.054	NORTH SEWER
1425	1056012.881	1087639.34	603.133	North 6 inch PVC Pipe
1426	1055882.923	1087646.062	605.684	4 inch PVC Vent
1427	1055759.894	1087645.399	602.992	Drop Inlet
1428	1055760.99	1087645.562	601.136	NORTH SEWER
1429	1055760.913	1087645.447	602.309	West 6 inch Green SDR
1430	1055687.447	1087640.289	603.695	Drop Inlet
1431	1055688.495	1087640.26	601.815	NORTH SEWER
1433	1055687.796	1087640.363	602.126	West 6 inch Green SDR
1434	1055689.17	1087640.269	602.105	East 6 inch Green SDR
1435	1055682.426	1087680.801	603.425	Drop Inlet
1436	1055683.457	1087680.846	601.537	NORTH SEWER
1437	1055683.621	1087680.53	602.686	South 6 inch Green SDR
1438	1055655.65	1087631.679	602.472	Drop Inlet
1439	1055657.172	1087632.158	596.307	NORTH SEWER
1440	1055657.647	1087632.547	600.595	South 6 inch Green SDR
1441	1055657.845	1087633.217	599.671	Northeast 6 inch HDPE Pipe
1442	1055494.574	1087801.125	603.355	NORTH SEWER
1443	1055494.673	1087802.747	596.594	NORTH SEWER
1444	1056491.224	1087674.289	594.475	NORTH SEWER
1445	1055681.023	1087665.109	603.67	NORTH SEWER

Table 3
Survey Data
Surface Water System
Riverview Innovation Technology Campus, Inc.
Tonawanda, New York

Survey Point Number	Easting	Northing	Elevation	Description
1446	1055679.702	1087664.986	598.369	NORTH SEWER
1447	1055434.651	1087793.823	603.675	Mansion Sump
1448	1055434.552	1087813.712	603.783	MANSION SUMP
1449	1055422.281	1087814.151	603.766	MANSION SUMP
1450	1055422.324	1087793.903	603.848	MANSION SUMP
1451	1055283.428	1087624.525	603.222	North-South Storm Sewer
1452	1055283.175	1087625.325	595.429	WEST SEWER
1453	1055284.78	1087357.649	603.803	WEST SEWER
1454	1055285.246	1087357.518	595.136	WEST SEWER
1455	1055292.641	1086785.245	594.692	WEST SEWER
1456	1055293.841	1086784.576	602.44	WEST SEWER
1457	1055301.067	1086389.462	601.902	WEST SEWER
1458	1055300.711	1086389.915	594.196	WEST SEWER
1459	1055434.473	1087803.314	596.358	Lateral to Mansion Sump
1460	1055434.448	1087799.364	599.277	Lateral to Mansion Sump
1461	1055422.93	1087800.128	596.111	Lateral to Mansion Sump
2	1056995.102	1087568.38	605.018	Building Corner, to Correlate to Drawing
1	1056989.776	1087614.433	604.904	Building Corner, to Correlate to Drawing
4	1056848.077	1087532.455	605.572	Building Corner, to Correlate to Drawing
3	1056848.141	1087507.892	605.981	Building Corner, to Correlate to Drawing
5	1056928.773	1087531.595	604.979	Building Corner, to Correlate to Drawing
1462	1056967.791	1087611.781	602.714	Box Culvert
1463	1056967.85	1087610.629	605.067	Box Culvert
1464	1056967.456	1087613.447	604.902	Box Culvert
1465	1056948.214	1087610.132	605.194	Box Culvert
1466	1056948.653	1087612.426	604.742	Box Culvert
1467	1056948.469	1087611.091	602.899	Box Culvert
1468	1056923.766	1087554.228	604.45	Box Culvert
1469	1056928.026	1087552.099	604.438	Box Culvert
1470	1056928.52	1087547.34	604.188	Box Culvert
1471	1056924.128	1087543.13	604.436	Box Culvert

Table 4
Survey Data
Surface Water System
Riverview Innovation Technology Campus, Inc.
Tonawanda, New York

Survey Point Number	Easting	Northing	Elevation	Description	Recommendation
1001	1055384.233	1086931.175	601.276	DI rim	
1204	1056799.76	1087485.381	603.408	North 12 in Steel Lateral	North South Connection for Box Culvert, Clear
1205	1056761.833	1087484.829	603.929	North 6 in Steel Lateral	Block from the North
1207	1056712.695	1087481.973	603.882	South 4 in Clay Lateral	Block from the South
1209	1056804.547	1087466.485	601.872	South 18 in Clay Lateral	Block from the South
1212	1056735.333	1087482.314	603.289	South 6 in Steel Lateral	Block from the South
1264	1056297.685	1087460.819	601.987	4 in Steel Lateral	Block from the South
1265	1056318.867	1087462.941	602.618	3 in Steel Lateral	Block from the South
1266	1056368.684	1087464.153	601.765	North 12 in Cast Iron Lateral	Determine Source
1267	1056373.751	1087463.58	602.014	North 12 in Cast Iron Lateral	Determine Source
1268	1056397.826	1087463.918	602.38	North 3 in Steel Lateral	Block from the North
1269	1056447.278	1087465.466	601.938	North 12 in Steel Lateral	Determine Source
1270	1056446.473	1087465.523	602.717	North 3 in Steel Lateral	Block from the North
1271	1056492.019	1087466.551	602.207	North 12 in Steel Lateral	Boiler House Drain
1272	1056502.631	1087466.245	601.503	North 12 in Steel Lateral	Boiler House Drain
1273	1056534.468	1087466.152	601.429	North 8 in Steel Lateral	Boiler House Drain
1274	1056542.461	1087466.38	601.547	North 12 in Steel Lateral	Boiler House Drain
1320	1056194.377	1087462.214	602.823	North 4 in Steel Lateral	Block from the North
1321	1056089.775	1087460.315	603.124	North 6 in Steel Lateral	Block from the North
1322	1056042.879	1087459.942	602.842	North 4 in Steel Lateral	Block from the North
1323	1055978.951	1087452.512	600.654	North 18 in Steel Lateral	Determine Source
1324	1055976.094	1087452.425	601.74	North 18 in Steel Lateral	Determine Source
1325	1055909.352	1087457.492	602.582	North 8 in Steel Lateral	Determine Source
1326	1055976.14	1087451.303	601.277	South 18 in Cast Iron Lateral	Battery No. 1 or Old Coke Wharf Drain
1327	1055979.034	1087451.704	600.697	South 18 in Cast Iron Lateral	Battery No. 1 or Old Coke Wharf Drain
1328	1056101.618	1087459.333	601.065	South 6 in Clay Lateral	Coal Handling Drain
1329	1056123.645	1087460.25	601.956	North 4 in Steel Lateral	Block from the North
1330	1056133.931	1087460.381	601.66	North 4 in Steel Lateral	Block from the North
1331	1056162.909	1087461.152	602.689	North 6 in Steel Lateral	Block from the North
1332	1056191.338	1087462.062	603.068	North 6 in Steel Lateral	Block from the North
1333	1056193.367	1087461.284	602.307	N-S pass through 6in steel	
1334	1056185.503	1087460.408	603.169	N-S pass through 4in steel	
1335	1056168.591	1087459.479	601.444	South 8 in Clay Lateral	Coal Handling Drain
1336	1056158.886	1087459.344	602.565	North 6 in Steel Lateral	Block from the North
1337	1056125.456	1087458.825	601.732	South 2 in Steel Lateral	Block from the South
1338	1056487.178	1087524.298	602.851	S 12in clay to box culvert	
1339	1056488.515	1087525.63	602.483	East 8in Clay Lateral from Boiler House	
1340	1056487.161	1087525.341	602.878	West 8 in Clay Lateral	
1347	1055627.634	1087488.799	601.054	South 12 in Clay Lateral	
1348	1055626.851	1087490.401	603.388	South 4 in Cleanout	
1349	1055626.462	1087488.538	602.904	South 4 in Steel Lateral	Block from the South
1350	1055635.328	1087490.278	601.407	North 4 in Steel Lateral	Drain from Machine Shop
1352	1055573.544	1087489.05	602.163	South 8 in Top of Pipe	Block from the South
1354	1055559.306	1087488.827	601.344	N-S 6 in Steel Pass Through	
1356	1055512.379	1087487.129	601.84	South 4 in Steel Lateral	Drain from OWS Secondary Containment
1357	1055549.93	1087487.572	600.241	South 2 foot Bulkhead	Verify Seal
1387	1055426.709	1087495.778	600.973	Collection Box Lateral	Junction of East West and North South Sections
1404	1055423.862	1087762.508	602.357	N-S 1 inch Conduit Passthrough	
1405	1055424.282	1087752.724	602.244	North 3 inch Steel Lateral	Manasion Drainage
1416	1056490.972	1087674.511	604.926	Collection Box	
1417	1056492.79	1087674.29	602.426	East 8 in corrugated Steel Pipe	
1418	1056347.444	1087672.95	604.03	Drop Inlet	
1419	1056347.539	1087671.528	601.134	Collection Box	
1420	1056348.969	1087671.561	601.608	East 16 in Concrete Pipe	
1421	1056346.242	1087671.626	601.822	West 16 in Concrete Pipe	
1422	1056348.065	1087669.842	602.036	South 16 Inch Steel Pipe	
1423	1056011.623	1087639.205	604.67	Drop Inlet	
1425	1056012.881	1087639.34	603.133	North 6 inch PVC Pipe	
1426	1055882.923	1087646.062	605.684	4 inch PVC Vent	

Table 4
Survey Data
Surface Water System
Riverview Innovation Technology Campus, Inc.
Tonawanda, New York

Survey Point Number	Easting	Northing	Elevation	Description	Recommendation
1427	1055759.894	1087645.399	602.992	Drop Inlet	
1429	1055760.913	1087645.447	602.309	West 6 inch Green SDR	
1430	1055687.447	1087640.289	603.695	Drop Inlet	
1433	1055687.796	1087640.363	602.126	West 6 inch Green SDR	
1434	1055689.17	1087640.269	602.105	East 6 inch Green SDR	
1435	1055682.426	1087680.801	603.425	Drop Inlet	
1437	1055683.621	1087680.53	602.686	South 6 inch Green SDR	
1438	1055655.65	1087631.679	602.472	Drop Inlet	
1440	1055657.647	1087632.547	600.595	South 6 inch Green SDR	
1441	1055657.845	1087633.217	599.671	Northeast 6 inch HDPE Pipe	
1447	1055434.651	1087793.823	603.675	Mansion Sump	
1451	1055283.428	1087624.525	603.222	North-South Storm Sewer	
1459	1055434.473	1087803.314	596.358	Lateral to Mansion Sump	
1460	1055434.448	1087799.364	599.277	Lateral to Mansion Sump	
1461	1055422.93	1087800.128	596.111	Lateral to Mansion Sump	

Table 5
Characterization Samples
Surface Water System
Riverview Innovation Technology Campus
Town of Tonawanda, New York

					Outfall #001					Mansion Sump						Box Culvert West of Process Area, Near Former Light Oil Building		Box Culvert Adjacent to Battery		Box Culvert East of Battery	
					Discharge Point from Concrete Lined Settling Basins					Internal Discharge At Influent from Box Culvert						Internal Flow, not a Discharge Point		Internal Flow, not a Discharge Point		Internal Flow, not a Discharge Point	
					Former Permitted Outfall to Stream on Site 109					Not a Regulated Discharge Location						Not a Regulated Discharge Location		Not a Regulated Discharge Location		Not a Regulated Discharge Location	
		SWPPP Limit			USEPA Samples 12/17/2019		OTF001 -02052020		SW-001-06172020		MS-09152020 Morning		MS-09152020 Afternoon			BC001-02052020		BC002-02052020		BC003-02052020	
					Result	Interpreted Qualifiers	Result	Interpreted Qualifiers	Result	Interpreted Qualifiers		Interpreted Qualifiers		Interpreted Qualifiers			Interpreted Qualifiers		Interpreted Qualifiers		Interpreted Qualifiers
FIELD PARAMETERS																					
	Flow (Estimated)	Monitor	GPD		72000	Estimate	72000	Estimate	14400	Estimate	43200	Estimate					Not Discernable		14400	Estimate	14400	Estimate
	pH	6.0 to 9.0	S.U.				7.35				6.46						3.81		3.75		4.24	
	Temperature	No Limit	°F																			
METALS																						
	Mercury	0.00005	mg/L			**U**			0.0000061													
	Aluminum	1	mg/L		0.617		0.426				4.85								11.9		13.9	
	Arsenic	No Limit	mg/L			U			<0.005													
	Chromium	No Limit	mg/L			U	0.00303	J			0.0441								0.0717		0.082	
	Copper	0.2	mg/L		0.0111																	
	Iron	4	mg/L		13.6		**21.7**		0.946		50								73		54.7	
	Lead	No Limit	mg/L			U			<0.005													
	Manganese	1	mg/L		0.63		0.996				1.39								2.09		1.82	
	Nickel	0.5	mg/L		0.0671																	
	Zinc	0.5	mg/L		0.256		0.34				0.718								2.15		2.45	
SEMI-VOLATILE ORGANIC COMPOUNDS																						
	2-Methylphenol	No Limit	mg/L																			
	3&4-Methylphenol	No Limit	mg/L																			
	Acenaphthylene	No Limit	mg/L						<0.00966													
	Benzo (a) anthracene	No Limit	mg/L						<0.00966													
	Benzo (a) pyrene	No Limit	mg/L						<0.00966													
	Benzo (b) fluoranthene	No Limit	mg/L						<0.00966													
	Benzo (k) fluoranthene	No Limit	mg/L						<0.00966													
	Chrysene	No Limit	mg/L						<0.00966													
	Dibenz (a,h) anthracene	No Limit	mg/L						<0.00966													
	Fluoranthene	No Limit	mg/L						<0.00966													
	Indeno (1,2,3-cd) pyrene	No Limit	mg/L						<0.00966													
	Naphthalene	No Limit	mg/L		0.0116				<0.00966													
	Phenanthrene	No Limit	mg/L						<0.00966													
	SVOC TICs	No Limit	mg/L						0.225													
VOLATILE ORGANIC COMPOUNDS																						
	Acetone	No Limit	mg/L				<0.0100				< 0.010						0.00596	J	0.00633	J	<0.010	
	Benzene	0.0015	mg/L		0.00877		0.0181		<0.001		0.0877						0.00419		0.000655	J	< 0.00100	
	m,p-Xylene																					
	o-Xylene																					
	Toluene	0.003	mg/L						<0.002													
	VOC TICs								<0.005													
OTHER INORGANIC COMPOUNDS																						
	Cyanide, Total	0.03	mg/L		0.05				0.0123													
	Phosphorus, Total	No Limit	mg/L																			
	Ammonia	1.5	mg/L		3.6				2.8				1.69		1.97							
	Flouride	1.5	mg/L						0.67													
TOTAL SUSPENDED SOILDS																						
	Solids, Suspended	50	mg/L						3.1													
Oil & Grease																						
	Total Petroleum Hydrocarbons	15	mg/L			U			<4.78													
SURFACTANTS																						
	Surfactants	0.5	mg/L						0.19													
PHENOLS																						
	Total Phenolics	0.08	mg/L						<0.03													

Notes:
1. Detections and estimated values only. All otheres were ND - Not Detected.
2. Samples and field data collected February 5, 2020 and September 15, 2020. Samples were grab samples, not composites.
3. February samples were collected for design purposes only, compliance samples were collected by the USEPA.

Table 6
Sediment Sample
Storm Sewer System Characterization
Riverview Innovatio Technology Campus
Town of Tonawanda, New York

		Mansion Sump		Box Culvert West of Maintenance Shop (South to North Section)		Box Culvert South of Maintenace Shop, Immediately North of Light Oil Secondary Containment		Box Culvert Adjacent to Battery		Box Culvert North of Coal Breaker Building, South of Exhauster Building		Box Culvert South of Pump House		Box Culvert Immediately Southwest of Purifiers	
		SD-MS-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1415-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1350-09082020 Sediment/Sludge	Interpreted Qualifiers	BC002-02052020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1329-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1266-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1219-09082020 Sediment/Sludge	Interpreted Qualifiers
General Chemistry															
	S.U.	6.51		6.85		6.99				6.91		7.29		6.3	
METALS															
Aluminum	mg/Kg	18100		40500		7910				3090		1680		4920	
Arsenic	mg/Kg	12.7		30		6.3		5.09		4.4		3.7		37	
Barium	mg/Kg	78.7		366		82.4				34.7		35.9		64	
Beryllium	mg/Kg	1.8		5.7		0.88		0.395	J	0.54		0.6			
Cadmium	mg/Kg	3		6.4		1.65		1.26		0.91					
Calcium	mg/Kg	39600		842000		38700				9730		19700		3660	
Chromium	mg/Kg	103		197		49.3		21.5		19.9		9.9		70.6	
Copper	mg/Kg	176		356		103		31.6		22.1		36.2		114	
Iron	mg/Kg	74300		237000		38000				17700		11300		85300	
Lead	mg/Kg	95		142		137		12.7		20.3		16.7		44	
Magnesium	mg/Kg	8620		73000		5030				3510		870		770	
Manganese	mg/Kg	435		3370		400				106		99.2		167	
Mercury	mg/Kg	2.4		3.41		3.08		*0.139*		0.361		0.142		0.73	
Nickel	mg/Kg	21		166		21.7		24.4		12.1		10.5			
Potassium	mg/Kg			3500		520				320					
Selenium	mg/Kg							4.02							
Silver	mg/Kg							0.643	J						
Sodium	mg/Kg	660		2200		530				210		200		390	
Vanadium	mg/Kg	40		99		16.3				11.8		8.1		40	
Zinc	mg/Kg	315		741		311		118		82.2		82		70	

Table 6
Sediment Sample
Storm Sewer System Characterization
Riverview Innovatio Technology Campus
Town of Tonawanda, New York

		Mansion Sump		Box Culvert West of Maintenance Shop (South to North Section)		Box Culvert South of Maintenace Shop, Immediately North of Light Oil Secondary Containment		Box Culvert Adjacent to Battery		Box Culvert North of Coal Breaker Building, South of Exhauster Building		Box Culvert South of Pump House		Box Culvert Immediately Southwest of Purifiers	
		SD-MS-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1415-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1350-09082020 Sediment/Sludge	Interpreted Qualifiers	BC002-02052020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1329-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1266-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1219-09082020 Sediment/Sludge	Interpreted Qualifiers
SEMI-VOLITILE ORGANIC COMPOUNDS															
2,4-Dimethylphenol	ug/Kg					870									
2-Methylnapthalene	ug/Kg					1800		763		910					
2-Methylphenol	ug/Kg					2100									
3- and 4-Metholphenol Coelution	ug/Kg					1600									
Acenaphthylene	ug/Kg					1900		684	J	2600					
Anthracene	ug/Kg					3500		1180		2800		1100			
Benzo(a)anthracene	ug/Kg	2800				10000	E	3380		6100	E	2800		8200	
Benzo(a)pyrene	*ug/Kg*	*3500*				*9100*	*E*	*2280*		*5800*	*E*	*2800*		*8900*	
Benzo(b)fluoranthene	ug/Kg	5100		9800		15000	E	3110		9800	E	4400		16000	
Benzo(g,h,i)perylene	ug/Kg	2500				5000		1280		4600		1700		7300	
Benzo(k)fluoranthene	ug/Kg					4600		1410		3100		1500		5400	
Carbazole	ug/Kg					1800		1080		890		890			
Chrysene	ug/Kg	3300		7500		11000	E	3550		6300	E	3600		11000	
Dibenz(a,h)anthracene	ug/Kg					1800		514	J	1300		550			
Dibenzofuran	ug/Kg					1700		693		1100					
Fluoranthene	ug/Kg	5500		12000		11000	E	5710		7100	E	4600		14000	
Fluorene	*ug/Kg*					*1800*		*738*		*1800*					
Indeno(1,2,3-cd)pyrene	ug/Kg	2700				5400				4500		1800		7200	
Napthalene	*ug/Kg*	*2200*				*4700*		*5810*		*3600*		*720*		*6600*	
Phenanthrene	ug/Kg	3300		6700		8100	E	4160		6200	E	2800		9400	
Phenol	*ug/Kg*					*1400*		*977*							
Pyrene	ug/Kg	4400		9500		9800		3680		6200	E	3700		11000	
VOLITILE ORGANIC COMPOUNDS															
2-Butanone (MEK)	ug/Kg													17	
Acetone	ug/Kg	190		280		36				32		27		150	
Benzene	ug/Kg					16				8.2					
OTHER INORGANIC COMPOUNDS															
SOLIDS															
Percent Solids	%	19.2		9.2		54.7		40.3		69.2		63.3		29	
Ammonia (as Nitrogen)	mg/Kg	79		152		18.8				39.7		12.9		77	
Cyanide	mg/Kg	96.8		254		8				10.3		7.12		90.9	

Table 6
Sediment Sample
Storm Sewer System Characterization
Riverview Innovatio Technologv Camous
Town of Tonawanda, New Yc

		Mansion Sump		Box Culvert West of Maintenance Shop (South to North Section)		Box Culvert South of Maintenace Shop, Immediately North of Light Oil Secondary Containment		Box Culvert Adjacent to Battery		Box Culvert North of Coal Breaker Building, South of Exhauster Building		Box Culvert South of Pump House		Box Culvert Immediately Southwest of Purifiers	
		SD-MS-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1415-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1350-09082020 Sediment/Sludge	Interpreted Qualifiers	BC002-02052020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1329-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1266-09082020 Sediment/Sludge	Interpreted Qualifiers	SD-BC-1219-09082020 Sediment/Sludge	Interpreted Qualifiers
Wet Chemistry															
Cyanide, Reactive	mg/Kg	ND		ND		ND		ND		ND		ND		ND	
Sulfide, Reactive		ND		ND		ND		ND		ND		ND		ND	
Ignitability		Not Ignitable		Not Ignitable		Not Ignitable		Not Ignitable		Not Ignitable		Not Ignitable		Not Ignitable	
Moisture Contant		75.5		90.1		35.8		54.5		42.9		40.3		54.5	
Total Solids		24.5		9.9		64.2		45.5		57.1		59.7		45.5	
TCLP Volitile Organic Compounds															
Benzene		ND		ND		ND				ND		ND		ND	
2 Butanone		ND		ND		ND				ND		ND		ND	
Carbon Tetrachloride		ND		ND		ND				ND		ND		ND	
Chloorobenzene		ND		ND		ND				ND		ND		ND	
Chloroform		ND		ND		ND				ND		ND		ND	
1,2-Dichloroethane		ND		ND		ND				ND		ND		ND	
1,1-Dichloroethene		ND		ND		ND				ND		ND		ND	
Tetrachloroethene		ND		ND		ND				ND		ND		ND	
Trichloroethene		ND		ND		ND				ND		ND		ND	
Vinyl Chloride		ND		ND		ND				ND		ND		ND	
TCLP Metals															
Arsenic, Total		ND		ND		ND				ND		ND		ND	
Barium, Total		ND		ND		ND				ND		ND		ND	
Cadmium. Total		0.016		ND		0.013				0.020		ND		ND	
Chormiun, Total		ND		ND		ND				ND		ND		ND	
Lead, Total		ND		ND		ND				ND		ND		ND	
Mercury, Total		ND		ND		ND				ND		ND		ND	
Selenium, Total		ND		ND		ND				ND		ND		ND	
Silver, Total		ND		ND		ND				ND		ND		ND	
TCLP Semi-Volitile Organic Compounds															
mp-Cresol		ND		ND		ND				ND		ND		ND	
o-Cresol		ND		ND		ND				ND		ND		ND	
1,4-Dichlorobenzene		ND		ND		ND				ND		ND		ND	
2,4-Dinotrotoluene		ND		ND		ND				ND		ND		ND	
Hexachlorobenzene		ND		ND		ND				ND		ND		ND	
Hexachloroethane		ND		ND		ND				ND		ND		ND	
Nitrobenzene		ND		ND		ND				ND		ND		ND	
Pentachlorophenol		ND		ND		ND				ND		ND		ND	
Pyridine		ND		ND		ND				ND		ND		ND	
2,4,5-Trichlorophenol		ND		ND		ND				ND		ND		ND	
2,4,6-Trichlorophenol		ND		ND		ND				ND		ND		ND	

Table 6
Sediment Sample
Storm Sewer System Characterization
Riverview Innovatio Technology Campus
Town of Tonawanda, New York

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TCLP Pesticides															
gamma-BHC		ND		ND		ND				ND		ND		ND	
Chlordane		ND		ND		ND				ND		ND		ND	
Endrin		ND		ND		ND				ND		ND		ND	
Heptachlor		ND		ND		ND				ND		ND		ND	
Heptachlor Epoxide		ND		ND		ND				ND		ND		ND	
Methoxychlor		ND		ND		ND				ND		ND		ND	
Toxaphene		ND		ND		ND				ND		ND		ND	
TCLPHerbicides															
2,4-D		ND		ND		ND				ND		ND		ND	
2,4,5-TP		ND		ND		ND				ND		ND		ND	
Notes:															

1. Detections and estimated values only. All otheres were ND - Not Detected.
2. Samples and field data collected February 5, 2020.
3. Compounds in italic text were monitored by TCC

Figures

PLOTDATE: 10/28/16 4:06:16 PM reids

INDUSTRIAL USE PERMIT REQUIREMENTS

WASTEWATER STREAMS AUTHORIZED FOR DISCHARGE

WASTEWATER STREAM	APPROXIMATE FLOW(GPD)	YES	NO
A. Sanitary	17,000	X	
B. Boiler Blowdown			
C. Treated Process Wastewater	72,000	X	
D. Cooling Water			
E. Other			
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: ***September 1 , 2015***

MONITORING LOCATION: Sampling Manhole near Guard Gate
SAMPLE TYPE: 24 Composite for all parameters except pH and SGT-HEM which will be grabs

PARAMETERS	SAMPLE FREQUENCY	LIMIT	PURPOSE
pH	Monthly	5.0-9.5 SU	Compliance
SGT-HEM	"	100 ppm	"
Cyanide	"	1.1 mg/l	"
Biochemical Oxygen Demand	"	250 mg/l	Surcharge
Total Suspended Solids	"	"	"
Total Phosphorus	"	6.0 mg/l	"
Chemical Oxygen Demand	"	----------	Monitor Only
Total Mercury	"	0.001 mg/l	Compliance
Total Arsenic	Every Six Months	0.5 mg/l	Compliance[1]
Total Selenium	" " "	----------	"
Priority Pollutant Semivolatiles	" " "	----------	"

SPDES PERMIT REQUIREMENTS

FINAL PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
001	Non-contact cooling, boiler blowdown and stormwater runoff	Niagara River (A-Special)	EDM	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	2 / month	Grab	

PARAMETER	COMPLIANCE LIMIT Daily Avg.	COMPLIANCE LIMIT Daily Max.	MONITORING ACTION LEVEL TYPE I	MONITORING ACTION LEVEL TYPE II	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
Flow	Monitor	Monitor			GPD	Continuous	Recorder	
Solids, Total Suspended, (Net)	Monitor	30			mg/l	Monthly	24-hr. Comp.	1, 2
Oil & Grease, (Net)	Monitor	15.0			mg/l	Monthly	Grab	1,2
Settleable Solids	Monitor	0.1			ml/l	Monthly	Grab	2
Temperature	Monitor	102			° F	Monthly	Grab	2
Ammonia (as N)			1.5		mg/l	Semi-annual	24-hr Comp.	
Ammonia (as N)			monitor		lb/day	Semi-annual	Calculated	
Cyanide, Total			0.03		mg/l	Semi-annual	24-hr Comp.	
Cyanide, Total			monitor		lb/day	Semi-annual	Calculated	
Phenols (4AAP), (Net)			0.08		mg/l	Semi-annual	24-hr Comp.	1
Phenols (4AAP), (Net)			monitor		lb/day	Semi-annual	Calculated	1
Benzene			0.0015		mg/l	Semi-annual	Grab	
Benzene			monitor		lb/day	Semi-annual	Calculated	
Benzo(a)pyrene			0.002		mg/l	Semi-annual	24-hr Comp	
Benzo(a)pyrene			monitor		lb/day	Semi-annual	Calculated	
Naphthalene			0.003		mg/l	Semi-annual	24-hr Comp.	
Naphthalene			monitor		lb/day	Semi-annual	Calculated	
Toluene			0.003		mg/l	Semi-annual	Grab	
Toluene			monitor		lb/day	Semi-annual	Calculated	
Fluoride			1.5		mg/l	Semi-annual	24-hr Comp.	
Surfactant			0.5		mg/l	Semi-annual	24-hr Comp.	

Footnotes:
1. The permittee shall collect intake sample whenever all Outfall 001 sample is taken and analyze the concentrations for those parameters qualifying for "Net."
2. Report average value if more than one sample analysis is performed during the month.

SPDES PERMIT REQUIREMENTS

FINAL PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
004	Combined flow for Outfalls (001 + 002 + 003)	Niagara River	EDM	EDP + 5 yrs.

PARAMETER	ENFORCEABLE LIMIT Monthly Avg.	ENFORCEABLE LIMIT Daily Max.	MONITORING ACTION LEVEL TYPE I	MONITORING ACTION LEVEL TYPE II	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
Flow (May 1 to Oct. 31)	Monitor	Monitor			MGD	Monthly	Calculated	
Temperature (May 1 to Oct. 31)	Monitor	Monitor			Degree F	2 / Month	Grab	

SPDES PERMIT REQUIREMENTS

FINAL PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
002	Coal Pile Runoff	Niagara River (A-Special)	EDM	ExDP

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	

PARAMETER	COMPLIANCE LIMIT Daily Avg.	COMPLIANCE LIMIT Daily Max.	MONITORING ACTION LEVEL TYPE I	MONITORING ACTION LEVEL TYPE II	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
Flow		Monitor			GPD	Monthly	Instantaneous	
Solids, Total Suspended		50			mg/l	Monthly	Grab	
Oil & Grease		15			mg/l	Monthly	Grab	
Iron		4.0			mg/l	Monthly	Grab	
Cyanide			0.1		mg/l	Semi-annual	Grab	
Copper			0.2		mg/l	Semi-annual	Grab	
Nickel			0.5		mg/l	Semi-annual	Grab	
Zinc			0.5		mg/l	Semi-annual	Grab	
Surfactant			0.5		mg/l	Semi-annual	Grab	
Aluminum			1.0		mg/l	Semi-annual	Grab	
Manganese			1.0		mg/l	Semi-annual	Grab	

INDUSTRIAL USE PERMIT REQUIREMENTS

MONITORING LOCATION: **Post Equalization Tank**

COMBINED WASTESTREAM FORMULA APPLIES AT THIS LOCATION NO

CATEGORICAL PRETREATMENT LIMITS (PSES)

In accordance with the provisions of 40 CFR Paragraph 420.04(b), the permittee chooses to use the daily average production rate (based upon monthly production) for the highest of the previous 5 years. Under this option, the production number used in calculating limits is 462.9 tons/day. Documented monthly production rates for the last 5 years shall be provided to the Town by September 15th of each year and limits shall be adjusted to reflect any major changes in production.

PARAMETER	MONTHLY AVERAGE (# /1000 #)	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (# /1000 #)	DAILY MAXIMUM (lbs/day)
Ammonia Nitrogen	.0200	(18.52)	.0333	(30.83)
Cyanide	.00506	(4.67)	00724	(6.70)
Naphthalene	.0000392	(.036)	.0000472	(.044)

MONITORING AND REPORTING SCHEDULE

PARAMETER	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENCY
Ammonia Nitrogen	Semi-annually	24 Hour Composite	January & July
Cyanide	Semi-annually	24 Hour Composite	January & July
Naphthalene	Semi-annually	24 Hour Composite	January & July

Flow must be reported for the sampling day in order to calculate the pounds per day.

AS REQUESTED BY USEPA ON SEPTEMBER 21, 2016, THIS LOCATION WAS RE-SAMPLED ON OCTOBER 4, 2016 FOR SPDES OUTFALLS 1 AND 2 PARAMETERS.

AERIAL IMAGERY OBTAINED FROM NYS GIS CLEARINGHOUSE, DATED APRIL 2014.

N

LEGEND

- WATER SAMPLE LOCATION (JULY 2016)
- DYE TEST LOCATION
- SANITARY MANHOLE (ACCESSIBLE)
- SANITARY MANHOLE (INACCESSIBLE OR NOT FOUND)
- IU SANITARY SAMPLE LOCATION
- AMMONIA STILL FLOOR DRAIN - PUMPED TO STILL
- IU POST EQ SAMPLE LOCATION (TO SANITARY SEWER)
- OPEN PIT (TO STORM SEWER)
- BOILER HOUSE OUTSIDE VAULT (TO STORM SEWER)
- SPDES OUTFALL
- OUTFALL-003 (ABANDONED)
- STORM WATER MANHOLE
- CATCH BASIN/DRAIN (TO STORM SEWER)
- EXCESS COOLING WATER DISCHARGE (TO STORM SEWER)
- SUMP (TO STORM SEWER)
- METAL STICK-UP PIPE (UNKNOWN SOURCE)
- APPROXIMATE SANITARY SEWER (BASED ON CRA REPORT, 2010)
- APPROXIMATE SANITARY SEWER (BASED ON HISTORIC FACILITY DRAWINGS)
- STORM SEWER STRUCTURE

STORM DRAINAGE/SEWER

- CONCRETE BOX CULVERT
- STORM CULVERT
- BREEZE FIELD STORM PIPE
- STORM PIPE
- STORM PIPE (INFERRED)
- SURFACE DRAINAGE
- UNIDENTIFIED PIPE (TO STORM)

PROCESS WASTEWATER LINES[1]

- EXCESS LIQUOR FROM SURGE TANK TO STORAGE TANKS
- FLOW FROM STORAGE TANK TO AMMONIA STILL FOR TREATMENT
- FLOW FROM AMMONIA STILL TO AC PUMP THEN TO EQ TANK
- DISCHARGE FROM EQ TANK TO SANITARY SEWER (LINE DASHED - APPROXIMATED UNDERGROUND LOCATION)

NOTES:
1. PROCESS WASTEWATER LINES ARE GENERALIZED FOR THE PURPOSE OF DISPLAYING CONVEYANCE ACROSS THE SITE.

TONAWANDA COKE CORP. CLEAN WATER ACT COMPLIANCE AUDIT TONAWANDA, NEW YORK

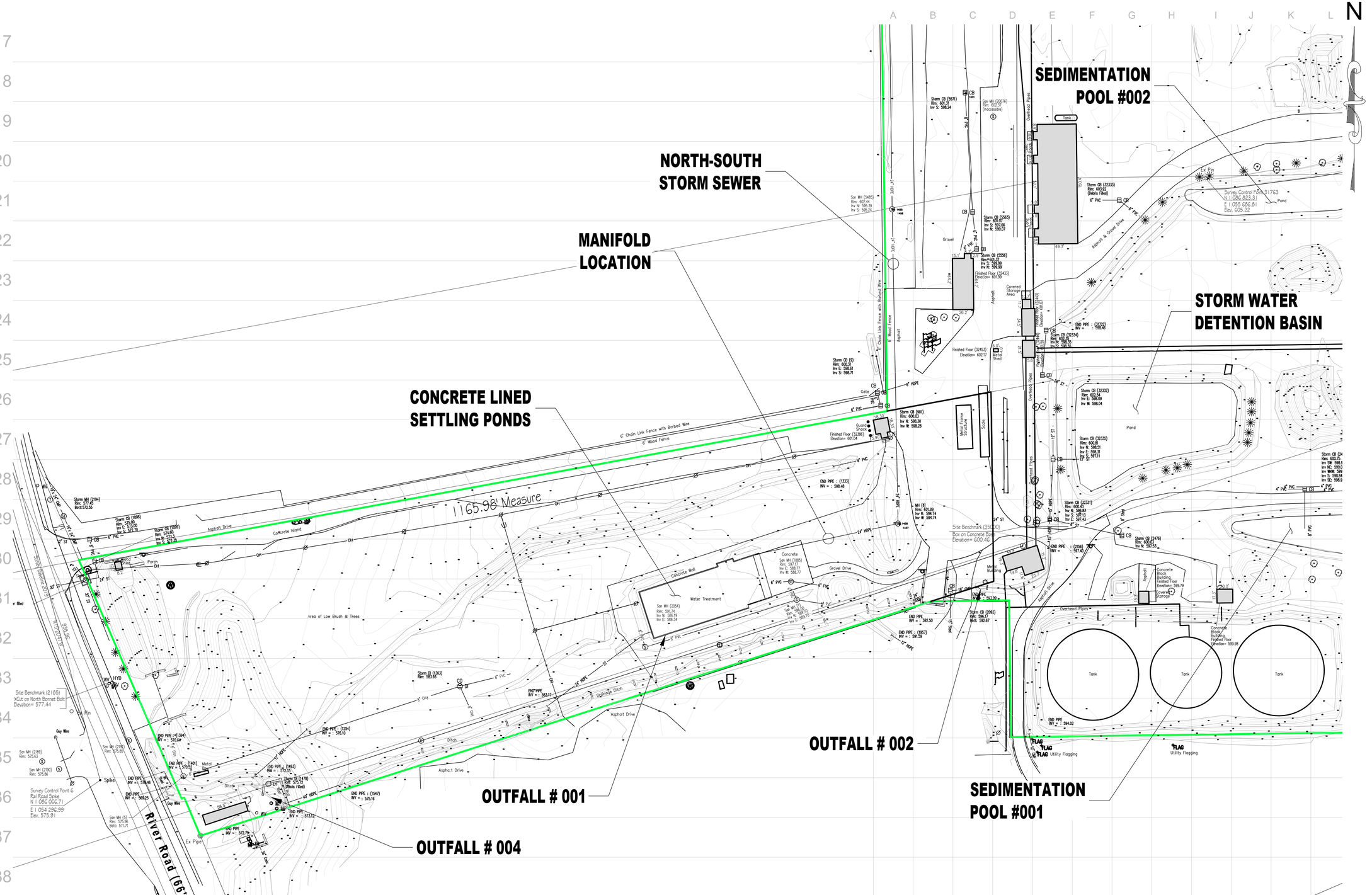
STORM & WASTEWATER CONVEYANCE & DISCHARGE LIMITS

0 60 120 240
Feet

FILE NO. 25489.62791
DATE: OCTOBER 2016

O'BRIEN & GERE ENGINEERS, INC.

I:\Tonawanda-Coke\25489\62791.ww-Compliance-St\Docs\DWG\MXD\Storm-WW_Conveyance_revOct2016.mxd



D

-60 0 30 60 120 240

1 INCH = 60 FEET (22X34)

DRAWING BY	AUD
CHECKED	
APPROVED	

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STORMWATER OUTFALL LOCATIONS
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

INVENTUM ENGINEERING
481 CARLISLE DRIVE
SUITE 202
HERNDON, VIRGINIA 20170
(703) 722-6049
www.InventumEng.com

FIGURE 2

DRAWING NUMBER

NEW SET

MANSION SUMP

OIL HOUSE #6

FIREWATER STANDPIPE

MANSION (#1)

NORTH SEWER

COMPRESSOR BUILDING (#66)

WEST QUENCH PIT

LIGHT OIL AREA SECONDARY CONTAINMENT

COKE WHARF

EAST QUENCH PIT

SEDIMENTATION POOL #003

SEDIMENTATION POOL #002

NORTH DITCH

N

D

-60 0 30 60 120 240

1 INCH = 60 FEET (22X34)

DRAWING BY	AUD	
CHECKED		
APPROVED		

NORTH SURFACE WATER COLLECTION SYSTEMS
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

INVENTUM ENGINEERING
481 CARLISLE DRIVE
SUITE 202
HERNDON, VIRGINIA 20170
(703) 722-6049
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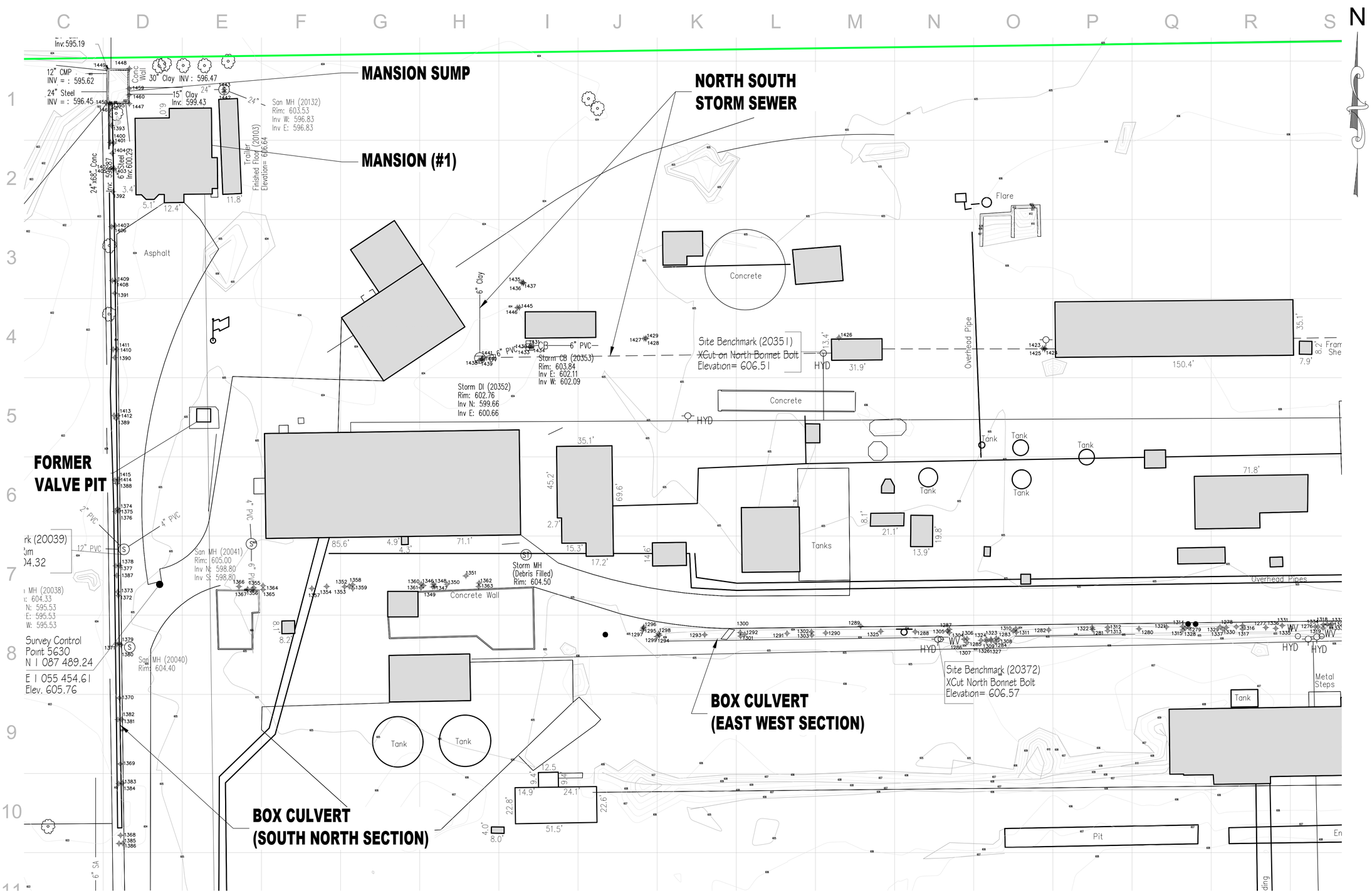
FIGURE 3

DRAWING NUMBER
NEW SET



D

-30 0 15 30 60 120

1 INCH = 30 FEET (22X34)

NOTE: SEWER LOCATIONS SURVEYED JULY 2020

DRAWING BY	AUD
CHECKED	
APPROVED	

NORTH WEST CORNER
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

INVENTUM ENGINEERING
481 CARLISLE DRIVE
SUITE 202
HERNDON, VIRGINIA 20170
(703) 722-6049
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FIGURE 4

DRAWING NUMBER
NEW SET

S T U V W X Y Z AA AB AC AD AE AF AG AH AI

1 2 3 4 5 6 7 8 9 10 11

N

NORTH SEWER

FIREWATER STANDPIPE

COMPRESSOR BUILDING (#66)

COKE WHARF

BOX CULVERT (EAST WEST SECTION)

EAST QUENCH PIT

Tank
Top Elev=874.60
Top Elev=884.97
Concrete
Metal Bldg
Finished Floor (20617) Elevation= 607.16
Concrete Wall
Tanks & Equipment
Transformers
Metal Stairs
Wood Bldg
Finished Floor (20524) Elevation= 606.11
Overhead Pipes
Asphalt Drive
Heavy Equipment Rail
Overhead Pipe
Guy Wire
Vent
Site Benchmark (20564)
XCut on North Bonnet Bolt
Elevation= 608.52
Metal Steps
Brick
Metal Quench Tower
Concrete Pad
Top Elev=848.68
Finished Floor (20539) Elevation= 605.74
6' Chain Link Fence with Electric Rail
Metal Roof
Conc Steps
Metal Shed
Enclosed Conveyor
Elevated

NOTE: SEWER LOCATIONS SURVEYED JULY 2020

D

-30 0 15 30 60 120

1 INCH = 30 FEET (22X34)

DRAWING BY	AUD
CHECKED	
APPROVED	

EAST END OF SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

INVENTUM ENGINEERING
481 CARLISLE DRIVE
SUITE 202
HERNDON, VIRGINIA 20170
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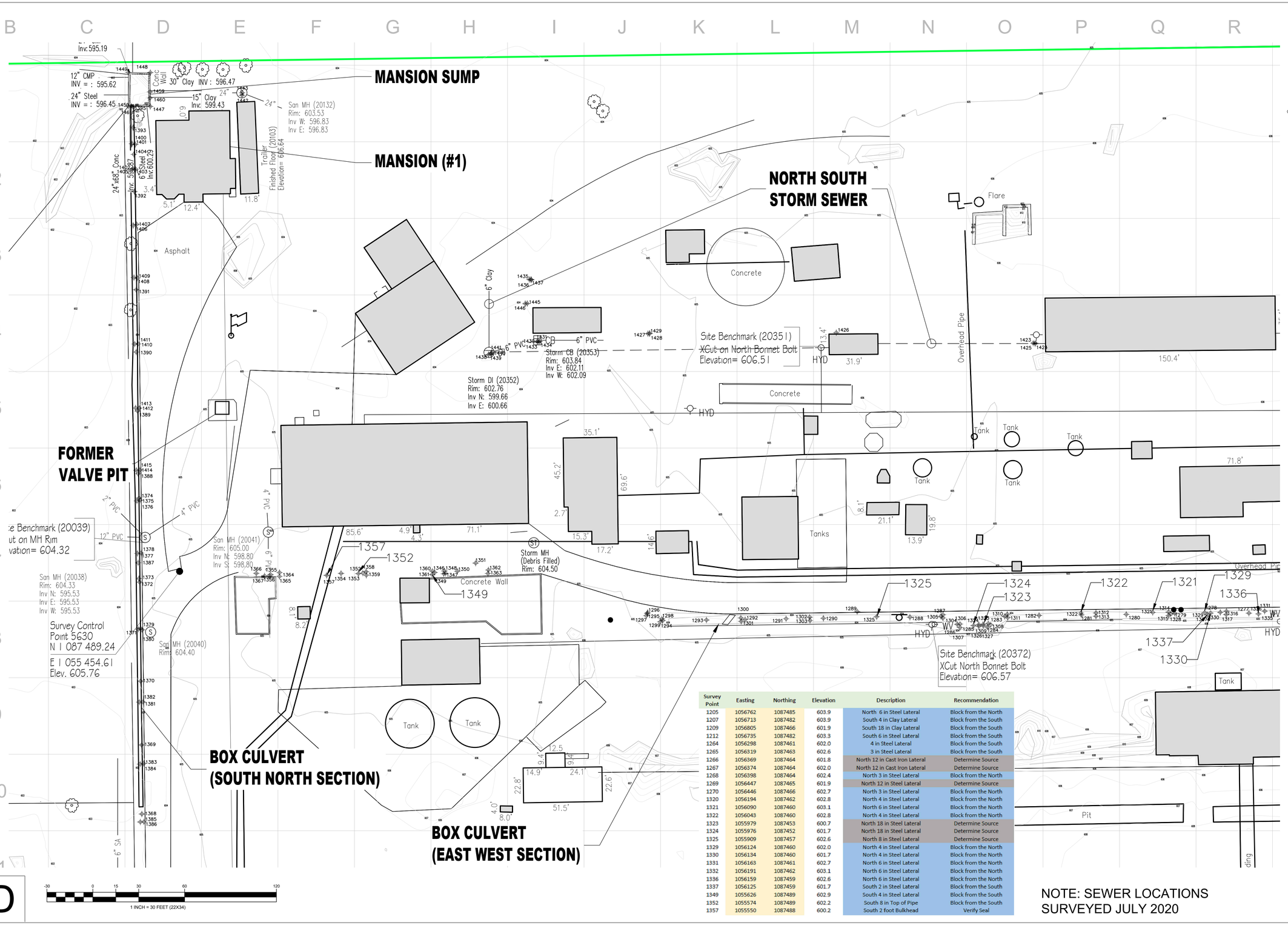
FIGURE 5

DRAWING NUMBER
NEW SET



Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

NOTE: SEWER LOCATIONS
SURVEYED JULY 2020

D

-30 0 15 30 60 120
1 INCH = 30 FEET (22X34)

DRAWING BY: AUD
CHECKED:
APPROVED:

NORTH WEST CORNER
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

INVENTUM ENGINEERING
481 CARLISLE DRIVE
SUITE 202
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FIGURE 6

DRAWING NUMBER
NEW SET

Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

NORTH SEWER

FIREWATER STANDPIPE

COMPRESSOR BUILDING (#66)

COKE WHARF

BOX CULVERT (EAST WEST SECTION)

EAST QUENCH PIT

Tank

Frame Shed

Concrete Wall

Tanks & Equipment

Transformers

Metal Bldg

Concrete

Top Elev=874.60

Top Elev=884.97

Finished Floor (20617) Elevation= 607.16

Metal Stairs

Wood Bldg

Finished Floor (20524) Elevation= 606.11

Overhead Pipes

Asphalt Drive

Heavy Equipment Rail

Brick

Metal Steps

Guy Wire

Vent

Site Benchmark (20564) XCut on North Bonnet Bolt Elevation= 608.52

Metal Quench Tower

Concrete Pad

Top Elev=848.68

Finished Floor (20539) Elevation= 605.74

6' Chain Link Fence with Electric Rail

7.7' Metal Shed

Conc Steps

Metal Roof

Enclosed Conveyor

Elevated

NOTE: SEWER LOCATIONS SURVEYED JULY 2020

1 INCH = 30 FEET (22X34)

DRAWING BY	CHECKED	APPROVED
AUD		

LATERALS EAST END OF SURFACE SURFACE WATER MANAGEMENT IRM RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS TONAWANDA, NEW YORK

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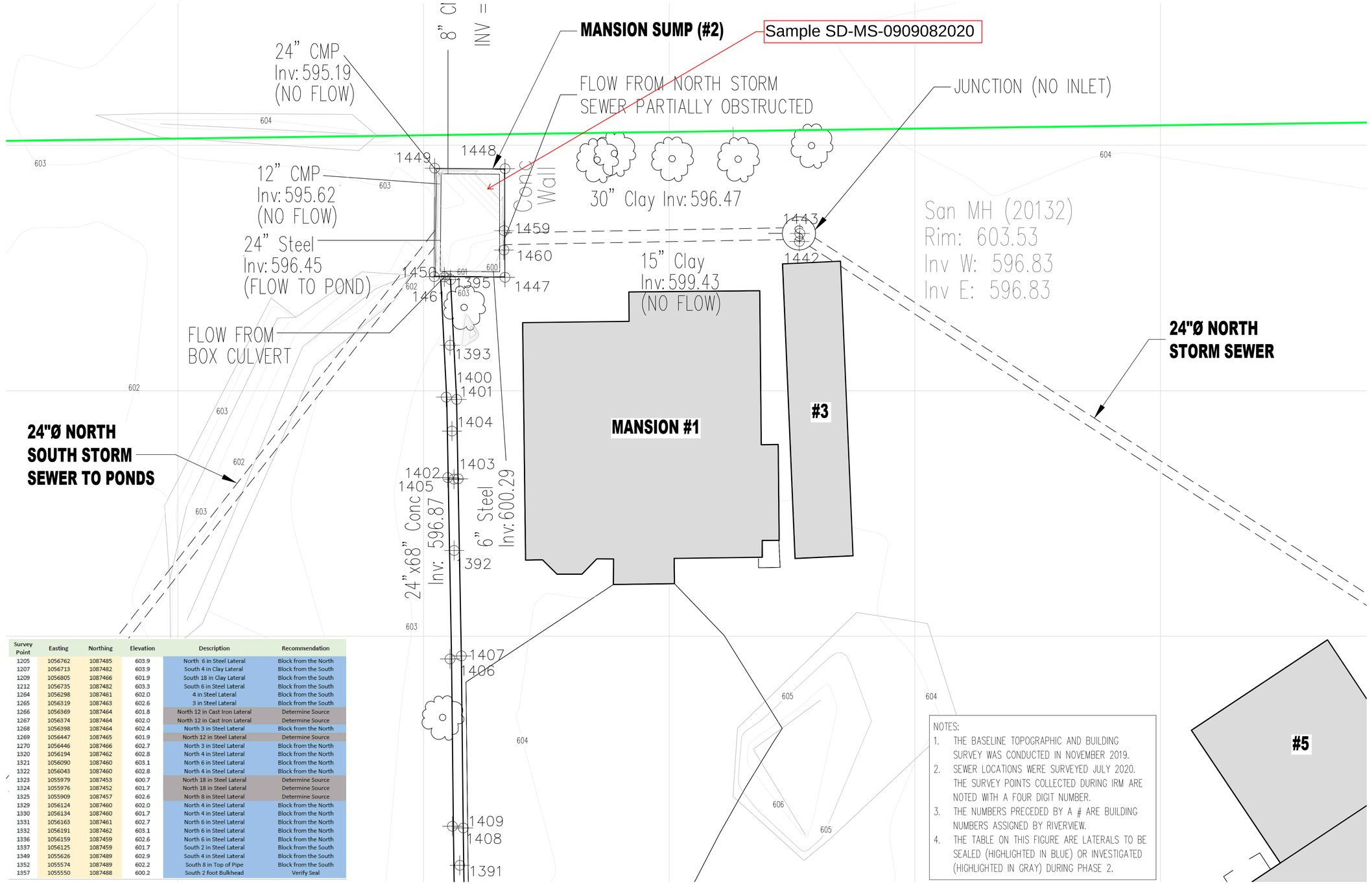
FIGURE 7

DRAWING NUMBER
NEW SET



Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

NOTES:
1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
3. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
4. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.

DRAWING BY: AUD
CHECKED:
APPROVED:

MANSION SUMP AREA
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

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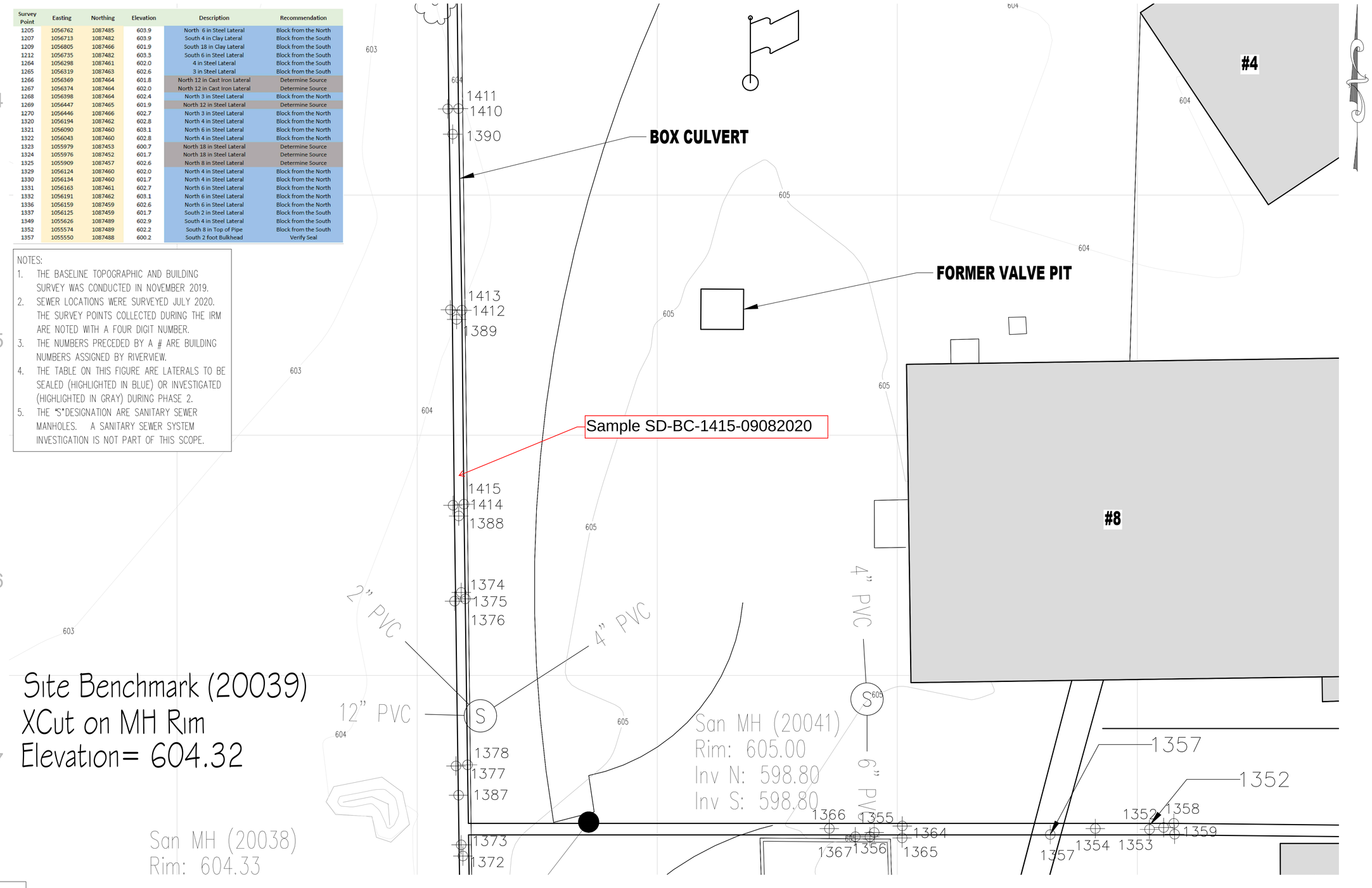
FIGURE 8

DRAWING NUMBER
NEW SET

Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

NOTES:
1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
3. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
4. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.
5. THE "S"DESIGNATION ARE SANITARY SEWER MANHOLES. A SANITARY SEWER SYSTEM INVESTIGATION IS NOT PART OF THIS SCOPE.



D

-10 0 5 10 20 40
1 INCH = 10 FEET (22X34)

DRAWING BY	AUD
CHECKED	
APPROVED	

BOX CULVERT WEST OF MAINTENANCE SHOP
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

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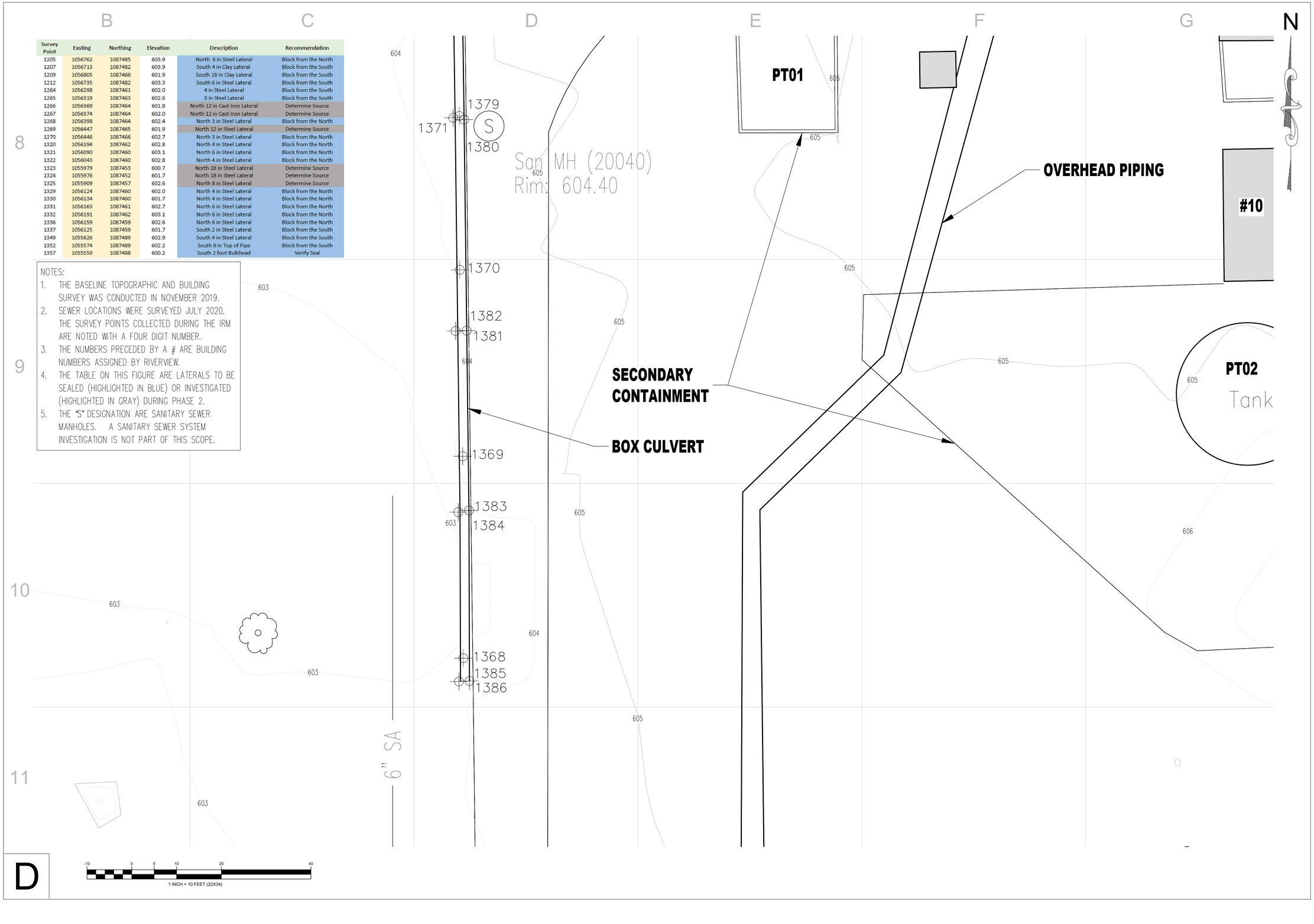
FIGURE 9

DRAWING NUMBER
NEW SET

Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

NOTES:

1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
3. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
4. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.
5. THE "S" DESIGNATION ARE SANITARY SEWER MANHOLES. A SANITARY SEWER SYSTEM INVESTIGATION IS NOT PART OF THIS SCOPE.



D

-10 0 5 10 20 40

1 INCH = 10 FEET (22X34)

DRAWING BY	AUD	
CHECKED		
APPROVED		

SOUTHERN SECTION OF BOX CULVERT
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

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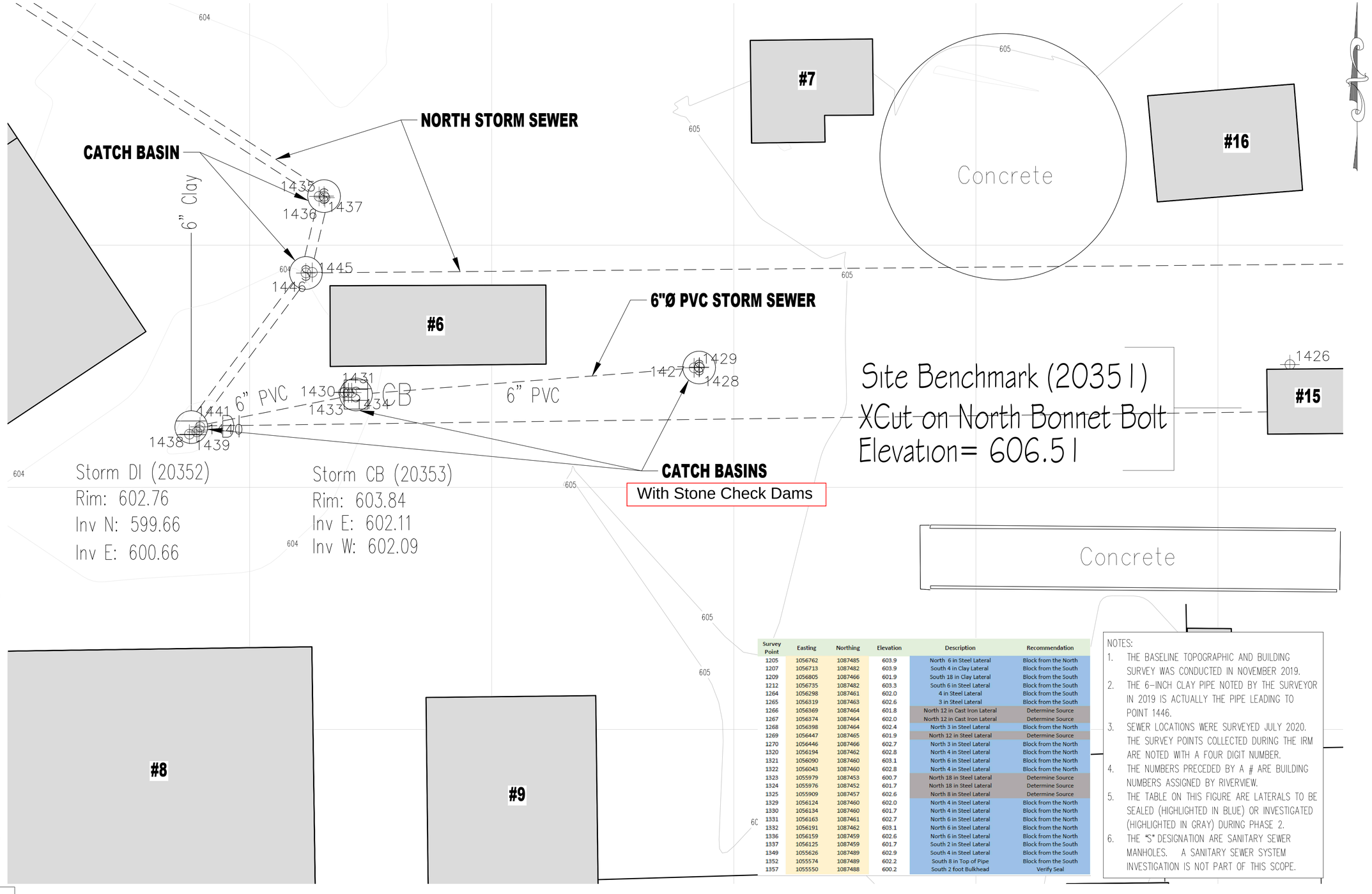
FIGURE 10

DRAWING NUMBER
NEW SET



Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

NOTES:
1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. THE 6-INCH CLAY PIPE NOTED BY THE SURVEYOR IN 2019 IS ACTUALLY THE PIPE LEADING TO POINT 1446.
3. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
4. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
5. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.
6. THE "S" DESIGNATION ARE SANITARY SEWER MANHOLES. A SANITARY SEWER SYSTEM INVESTIGATION IS NOT PART OF THIS SCOPE.

DRAWING BY | CHECKED | APPROVED | AUD

OIL HOUSE AREA
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

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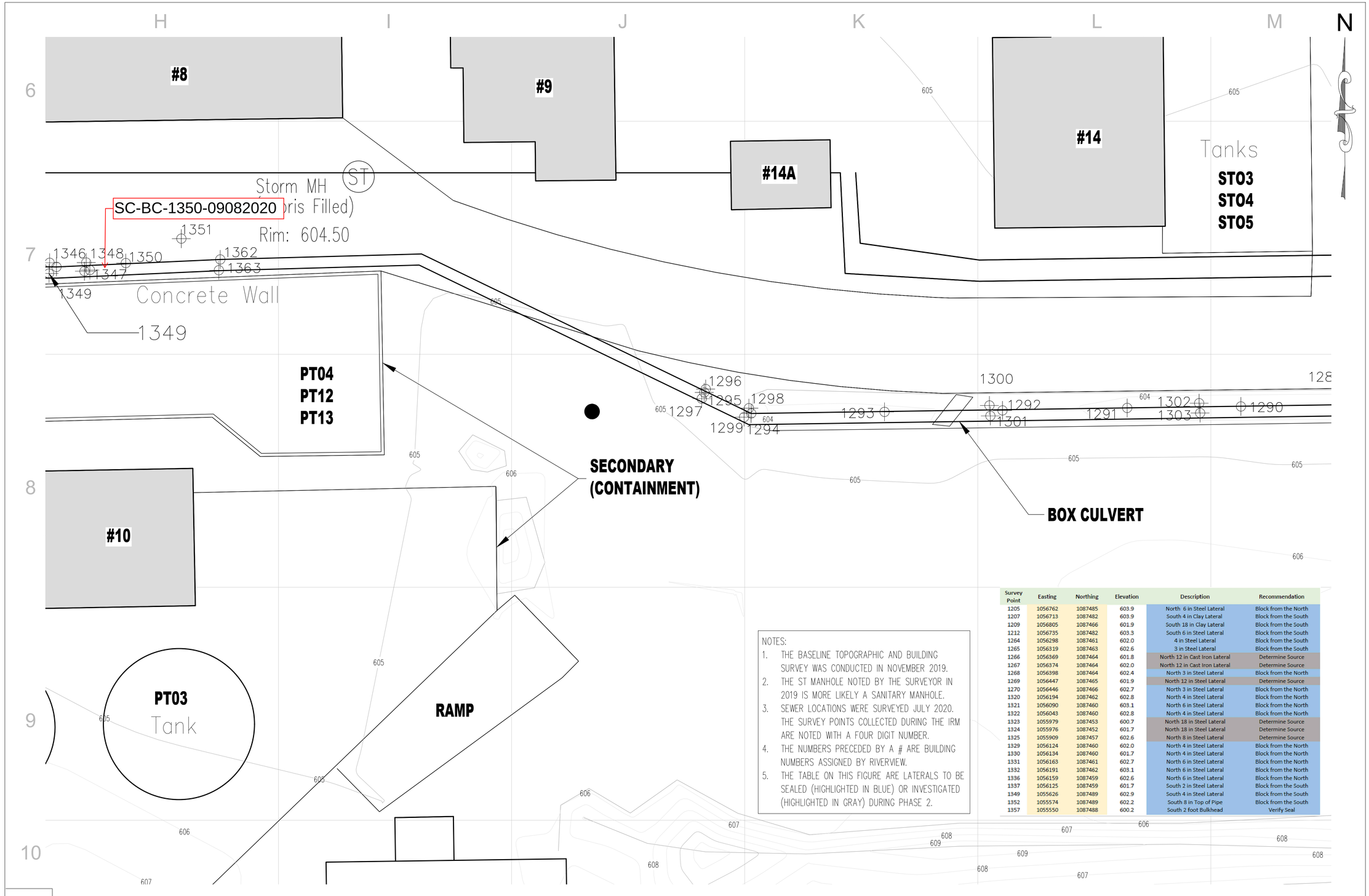
FIGURE 11

DRAWING NUMBER
NEW SET



NOTES:

1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. THE ST MANHOLE NOTED BY THE SURVEYOR IN 2019 IS MORE LIKELY A SANITARY MANHOLE.
3. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
4. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
5. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.

Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

D

AUD
DRAWING BY
CHECKED
APPROVED

LIGHT OIL AREA
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
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FIGURE 12

DRAWING NUMBER
NEW SET

Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

M N O P Q R

3 4 5 6

609 608 607 610 606

NORTH STORM SEWER

6"Ø STORM SEWER

METAL BUILDING(#18)

#15

Overhead Pipe

1423 1425 142

606 605 Tank Tank Tank Tank Tank

#20

NOTES:
1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. THE "Tank" NOTATION USED BY THE SURVEYOR IN 2019 IS INCORRECT ON THIS FIGURE, THESE ARE PROCESS EQUIPMENT (SCRUBBERS AND ACIDIFIERS).
3. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
4. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
5. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.

N

D

-10 0 5 10 20 40
1 INCH = 10 FEET (22X34)

AUD
DRAWING BY
CHECKED
APPROVED

WAREHOUSE AREA
SURFACE WATER MANAGEMENT IRM
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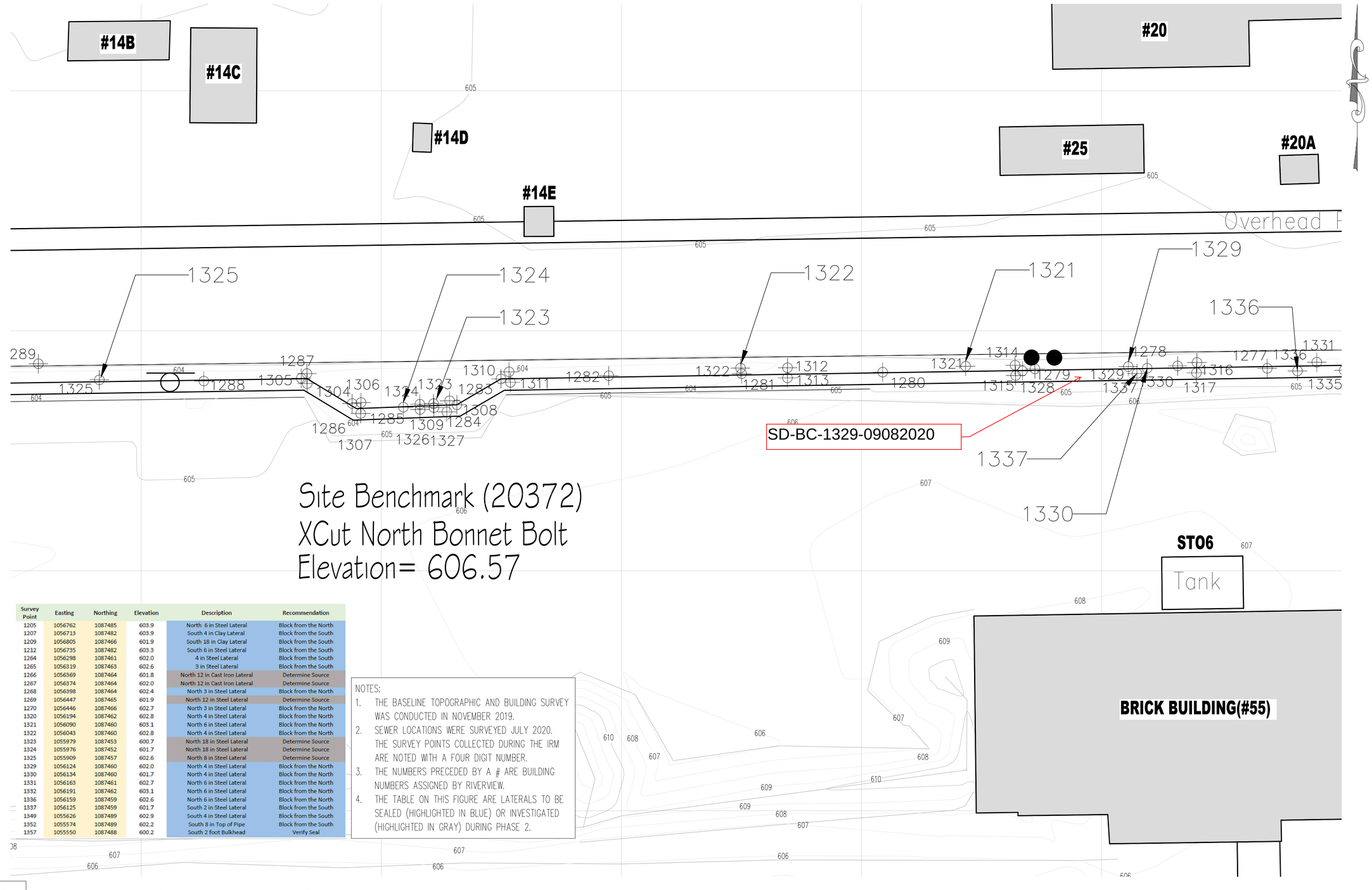
FIGURE 13

DRAWING NUMBER
NEW SET



Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

NOTES:
1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
3. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
4. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.

D

-10 0 5 10 20 40
1 INCH = 10 FEET (22X34)

DRAWING BY AUD
CHECKED
APPROVED

COAL HANDLING AREA
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
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FIGURE 14

DRAWING NUMBER
NEW SET

S T U V W X

3 4 5 6

N

NOTES:
1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. THE "MP" NOTATION USED BY THE SURVEYOR IN 2019 IS METAL POST, OR BOLLARDS.
3. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
4. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
5. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.

Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

606 605 606 605 606 606 606 606

1418 1421 1419 1420 1422

NORTH STORM SEWER

Frame Shed

TAR MANAGEMENT AREA SECONDARY (CONTAINMENT)

Concrete Wall

MP MP

BRICK METAL & BLOCK BUILDING(#38)

Tanks & Equipment

D

-10 0 5 10 20 40

1 INCH = 10 FEET (22X34)

DRAWING BY | AUD
CHECKED |
APPROVED |

NORTH SEWER AREA
SURFACE WATER IRM
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FIGURE 15

DRAWING NUMBER
NEW SET

Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

NOTES:
1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. THE "MP" NOTATION USED BY THE SURVEYOR IN 2019 IS METAL POST, OR BOLLARDS.
3. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
4. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
5. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.

S T U V W X

5 6 7 8

N

MP MP

606

BRICK METAL & BLOCK BUILDING(#38)

(#39)

Tanks & Equipment

BOX CULVERT

Pipes

Heavy Equipment Rail

1332 1268 1264 1265 1266 1267

1318 1332 1334 1320 1275 1276 1333 1319 1263 1249 1262 1264 1265 1248 1261 1260 1247 1266 1267 1259 1268 1258 1246 1270

605 606 604

Pipe Pipe

SD-BC-1266-09082020

D

-10 0 5 10 20 40

1 INCH = 10 FEET (22X34)

DRAWING BY AUD
CHECKED
APPROVED

SOUTH OF PUMP HOUSE AREA

SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
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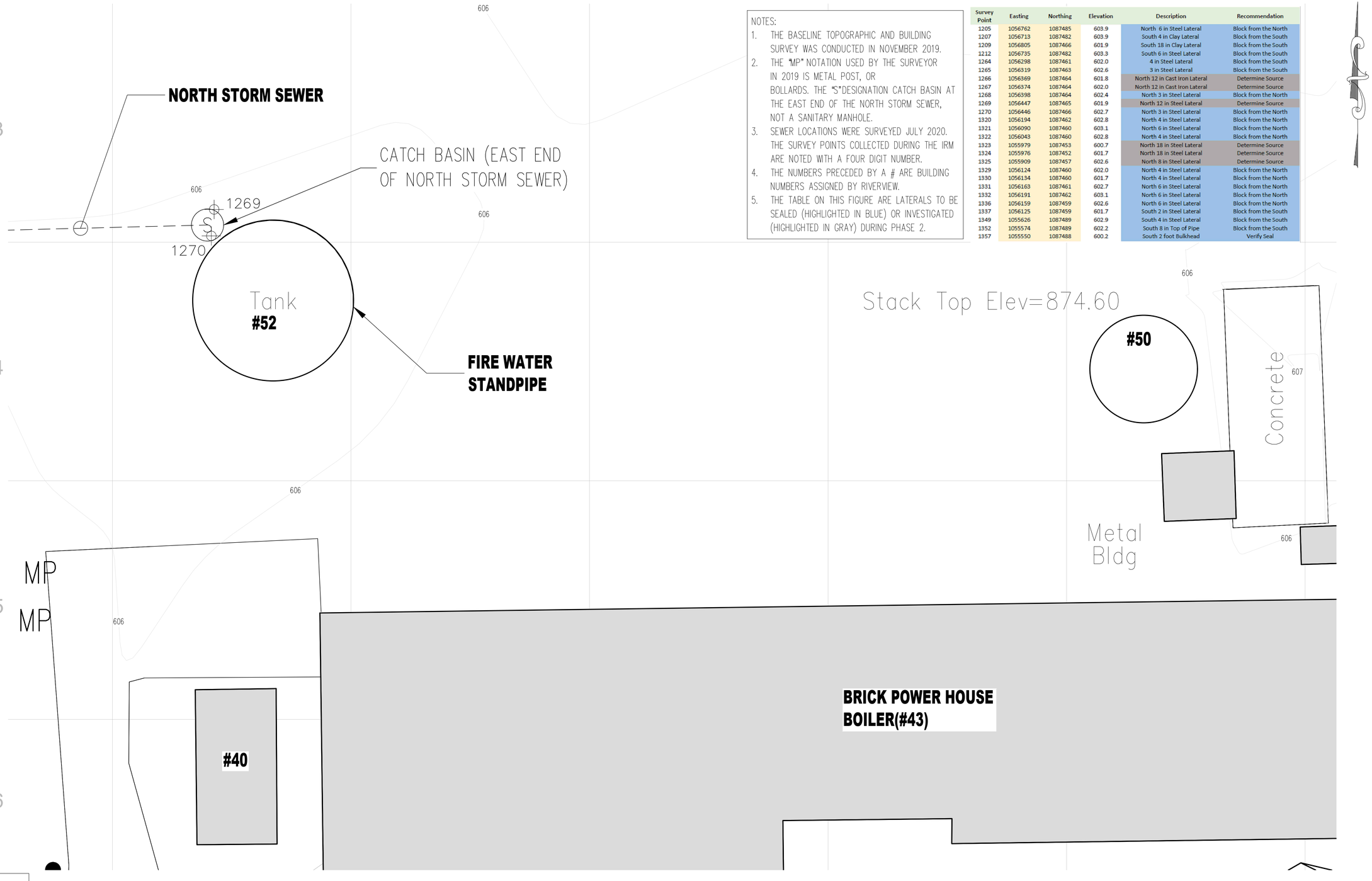
FIGURE 16

DRAWING NUMBER
NEW SET



NOTES:

1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. THE "MP" NOTATION USED BY THE SURVEYOR IN 2019 IS METAL POST, OR BOLLARDS. THE "S"DESIGNATION CATCH BASIN AT THE EAST END OF THE NORTH STORM SEWER, NOT A SANITARY MANHOLE.
3. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
4. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
5. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.

Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087455	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

DRAWING BY	AUD
CHECKED	
APPROVED	

STANDPIPE AREA
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
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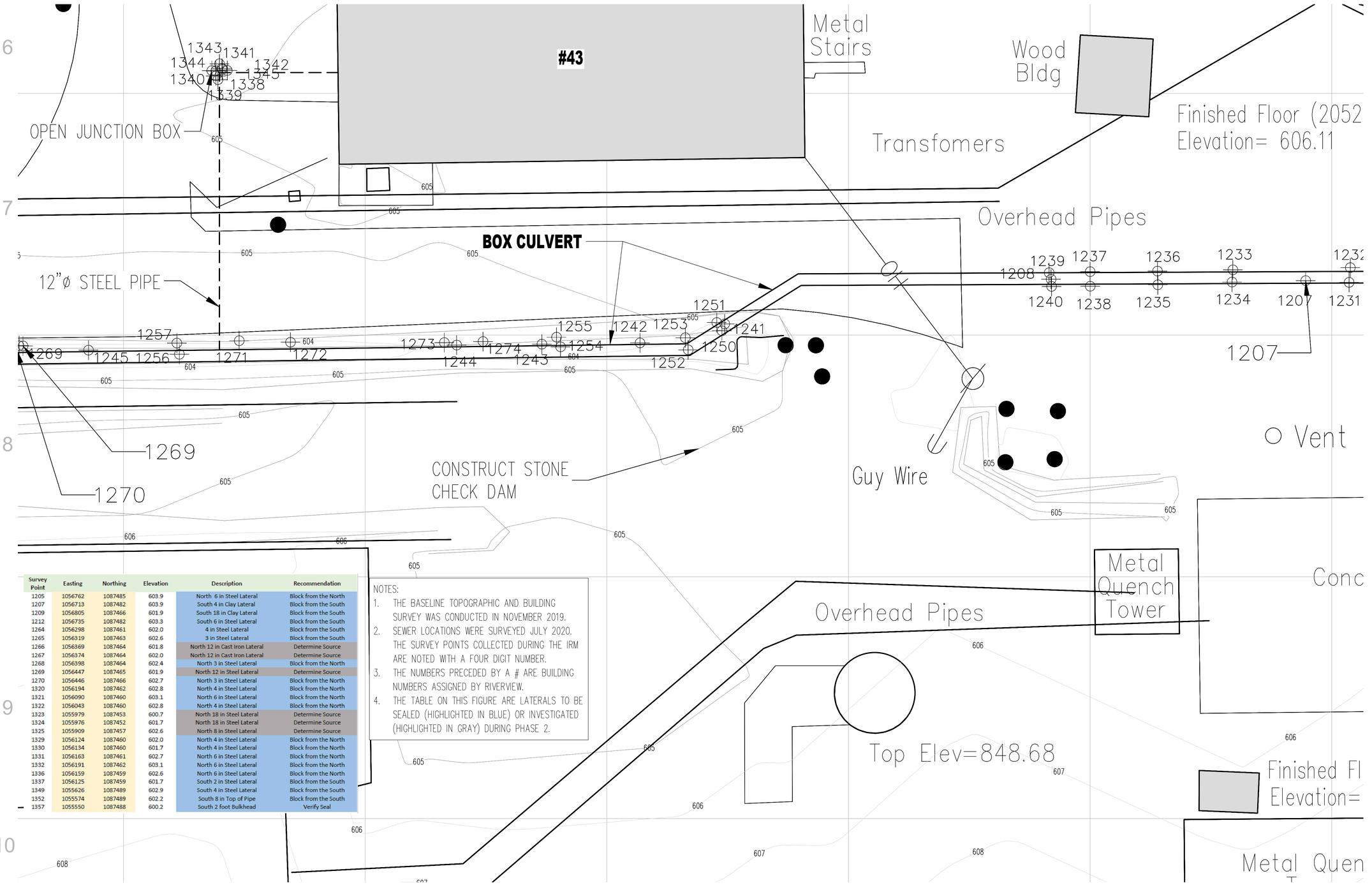
FIGURE 17

DRAWING NUMBER
NEW SET



Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

NOTES:
1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
3. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
4. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.

D

-10 0 5 10 20 40
1 INCH = 10 FEET (22X34)

DRAWING BY AUD
CHECKED
APPROVED

COKE WHARF AREA
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
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FIGURE 18

DRAWING NUMBER
NEW SET

AD AE AF AG AH AI

NOTES:
1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
3. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
4. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.

Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

N

606

607

#50

Top Elev=884.97

CLEAR VEGETATION FROM NORTH SIDE OF BUILDING

COMPRESSOR BUILDING (#66)

BOX CULVERT

1

2

1211

606

606

606

606

Metal Bldg Finished Floor (20617) Elevation= 607.16

#43

PLACE STONE CHECK DAM BETWEEN BUILDINGS #66 AND # 68

3 4 5 6

D

-10 0 5 10 20 40

1 INCH = 10 FEET (22X34)

AUD

DRAWING BY

CHECKED

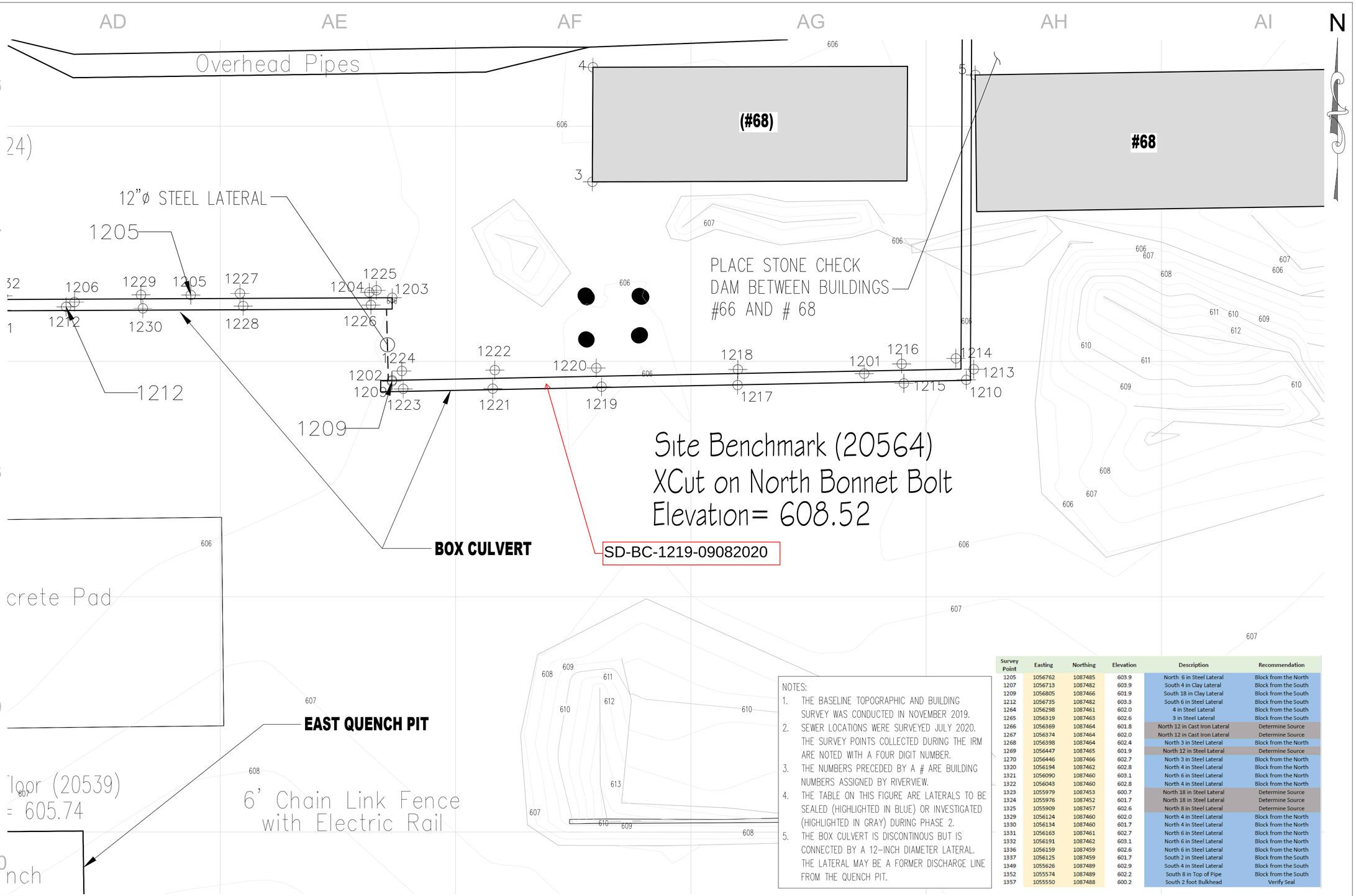
APPROVED

COMPRESSOR BUILDING AREA
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

INVENTUM ENGINEERING
481 CARLISLE DRIVE
SUITE 202
HERNDON, VIRGINIA 20170
(703) 722-6049
www.InventumEng.com

FIGURE 19

DRAWING NUMBER
NEW SET



NOTES:

1. THE BASELINE TOPOGRAPHIC AND BUILDING SURVEY WAS CONDUCTED IN NOVEMBER 2019.
2. SEWER LOCATIONS WERE SURVEYED JULY 2020. THE SURVEY POINTS COLLECTED DURING THE IRM ARE NOTED WITH A FOUR DIGIT NUMBER.
3. THE NUMBERS PRECEDED BY A # ARE BUILDING NUMBERS ASSIGNED BY RIVERVIEW.
4. THE TABLE ON THIS FIGURE ARE LATERALS TO BE SEALED (HIGHLIGHTED IN BLUE) OR INVESTIGATED (HIGHLIGHTED IN GRAY) DURING PHASE 2.
5. THE BOX CULVERT IS DISCONTINOUS BUT IS CONNECTED BY A 12-INCH DIAMETER LATERAL. THE LATERAL MAY BE A FORMER DISCHARGE LINE FROM THE QUENCH PIT.

Survey Point	Easting	Northing	Elevation	Description	Recommendation
1205	1056762	1087485	603.9	North 6 in Steel Lateral	Block from the North
1207	1056713	1087482	603.9	South 4 in Clay Lateral	Block from the South
1209	1056805	1087466	601.9	South 18 in Clay Lateral	Block from the South
1212	1056735	1087482	603.3	South 6 in Steel Lateral	Block from the South
1264	1056298	1087461	602.0	4 in Steel Lateral	Block from the South
1265	1056319	1087463	602.6	3 in Steel Lateral	Block from the South
1266	1056369	1087464	601.8	North 12 in Cast Iron Lateral	Determine Source
1267	1056374	1087464	602.0	North 12 in Cast Iron Lateral	Determine Source
1268	1056398	1087464	602.4	North 3 in Steel Lateral	Block from the North
1269	1056447	1087465	601.9	North 12 in Steel Lateral	Determine Source
1270	1056446	1087466	602.7	North 3 in Steel Lateral	Block from the North
1320	1056194	1087462	602.8	North 4 in Steel Lateral	Block from the North
1321	1056090	1087460	603.1	North 6 in Steel Lateral	Block from the North
1322	1056043	1087460	602.8	North 4 in Steel Lateral	Block from the North
1323	1055979	1087453	600.7	North 18 in Steel Lateral	Determine Source
1324	1055976	1087452	601.7	North 18 in Steel Lateral	Determine Source
1325	1055909	1087457	602.6	North 8 in Steel Lateral	Determine Source
1329	1056124	1087460	602.0	North 4 in Steel Lateral	Block from the North
1330	1056134	1087460	601.7	North 4 in Steel Lateral	Block from the North
1331	1056163	1087461	602.7	North 6 in Steel Lateral	Block from the North
1332	1056191	1087462	603.1	North 6 in Steel Lateral	Block from the North
1336	1056159	1087459	602.6	North 6 in Steel Lateral	Block from the North
1337	1056125	1087459	601.7	South 2 in Steel Lateral	Block from the South
1349	1055626	1087489	602.9	South 4 in Steel Lateral	Block from the South
1352	1055574	1087489	602.2	South 8 in Top of Pipe	Block from the South
1357	1055550	1087488	600.2	South 2 foot Bulkhead	Verify Seal

DRAWING BY | CHECKED | APPROVED | AUD

PURIFIER BOX AREA
SURFACE WATER MANAGEMENT IRM
RIVERVIEW INNOVATION & TECHNOLOGY CAMPUS
TONAWANDA, NEW YORK

INVENTUM ENGINEERING
481 CARLISLE DRIVE
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FIGURE 20

DRAWING NUMBER
NEW SET

Appendices

Photographs

Photographic Log

Surface Watermanagement System Investigation

Photos of Box Culvert East to West Section)

Photograph No. 1

Area directly east of boiler house, west of the compressor building. The Box Culvert turns east at this point and may tie into the compressor building.

Notes:

1. This is the eastern end of the Box Culvert.
2. Color of sediment similar to color of sediment in Box Culvert.

Photograph No. 2

Box culvert east of the boiler house (flowing north to south) between the former purifier boxes in the background.

Photograph No. 3

Box culvert along center of “Broadway” southeast of boiler house. View looking east.

Note: Survey receiver standing in deep sediment.

Photograph No. 4

Uncovered box culvert on southern side of boiler house looking west.

Notes:

1. The two sections of the Box Culvert at this location are connected by a pipe, not box culvert.
2. The pipe appears to be the former quench sump discharge pipe.

Photograph No. 5

Box culvert southeast of boiler house looking east, alternate view.

Photograph No. 6

View of lateral pipe at S-curve entering into the Box Culvert with view looking north.

Photograph No. 7

Uncovered lid between boiler house and baghouse concrete pad.

Photograph No. 8

Abandoned water line that connected to the baghouse tower formerly located on the adjacent baghouse slab.

Photograph No. 9

Lateral pipe jutting to culvert. Possibly running from the east end of the boiler house.

Photograph No. 10

Overhead view of eastern box culvert between the boiler house and baghouse slab.

Photograph No. 11

Overhead view of eastern section of the Box Culvert.

Photograph No. 12

Overhead view of the initial section of the Box Culvert.

Notes:

1. The Compressor Building is the structure that the culvert originates from.
2. Area appeared to have “iron staining” present on the surface.

Photograph No. 13

Overhead view of the box culvert and iron oxide area.

Photograph No 14

Abandoned discharge water pipeline from the cogeneration “cogen” facility. The pipe runs inside the line that goes the length of the battery and is blanked in front of the light oil area.

Photograph No. 15

Laterals than appeared to have drained the pusher track area along length of both batteries

Photograph No. 16

Steam siphon used to move condensate from coke oven gas to Sump #3 in the byproducts area.

Photograph No. 17

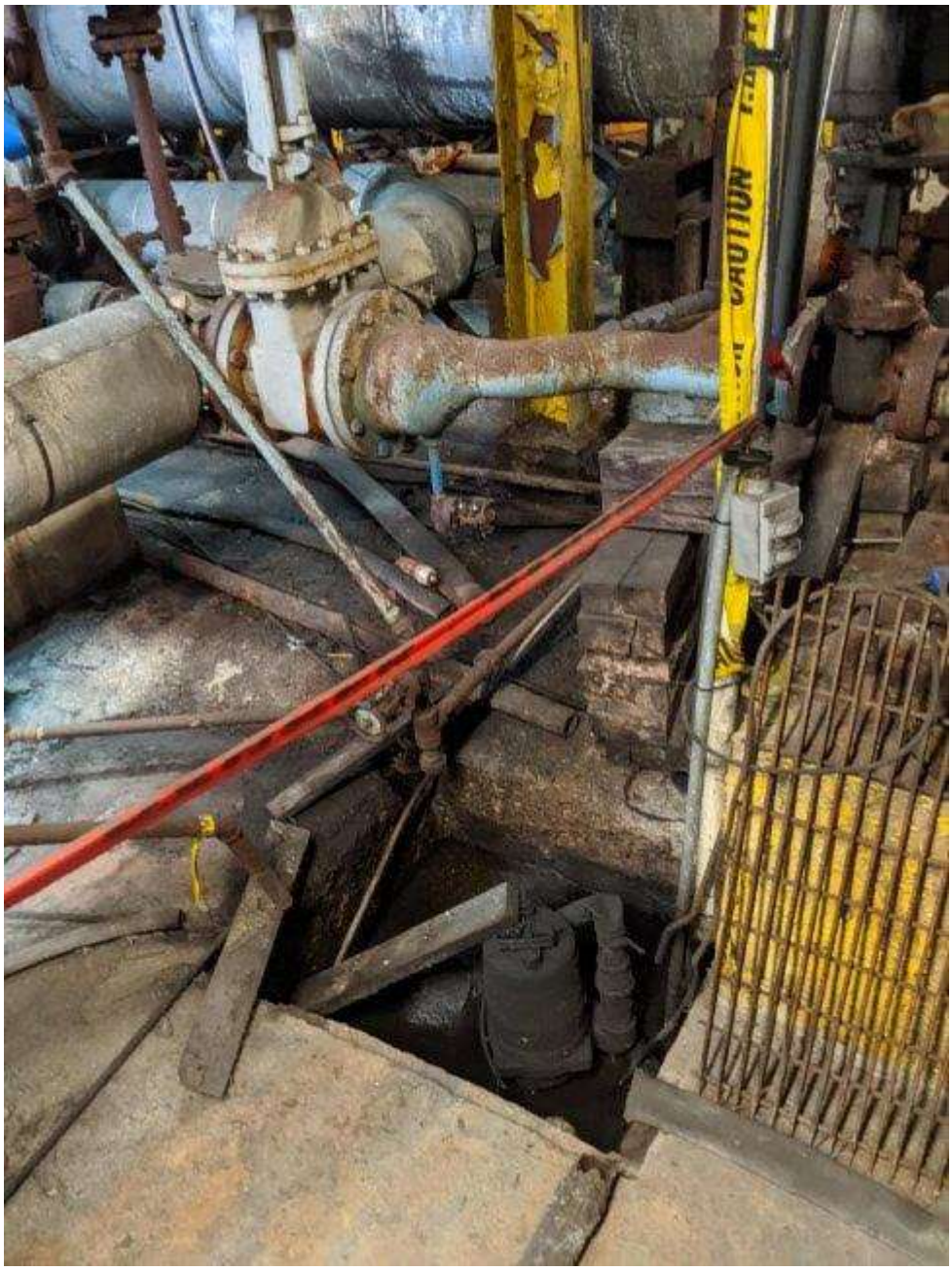
COG pipe from which the pipe in the previous photo collected condensate.

Photograph No. 18

Collection point for water from the water treatment area in the boiler house. Lateral discharged to the Box Culvert.

Photograph No. 19

View of inside of boiler house “yellow” collection point.



Photograph No. 20

Water treatment collection sump inside of the boiler house. Area was used to collect water that leaked from the surrounding pumps.

Photograph No. 21

Side view (looking west) of box culvert with battery #1 discharge lines.

Photograph No. 22

“Jog” in the Box Culvert adjacent to Battery No. 1 (looking west)

Photograph No. 23

Box Culvert between Coal Handling and Former Light Oil Building (Looking West)

Photograph No. 24

In some areas along the east west box culvert there appeared to be a biological sheen on the surface of the water.

Photograph No. 25

Measuring thickness of sediment near coal handling building

Photograph No. 24

Biological sheen near box culvert “jog”

Photograph No. 25

Discharge lines that were historically used to channel liquids from battery 1 into the culvert.

Photograph No. 26

Box Culvert immediately east of the Light Oil Area

Photograph No. 27

Box Culvert next to Light Oil Area looking east along Broadway

Photograph No. 28

Box Culvert immediately North of the former Pump House

Photograph No. 29

The surface water in the culvert along the Light Oil Building (looking east)

Note biological sheen.

Photograph No. 30

Box Culvert next to Light Oil Area (looking southwest)

Photograph No. 31

Section of Box Culvert near the west end of Broadway

Photograph No. 32

Plug under steel structural elements by light oil area that appeared to block a line that possibly originated from the old quench tower #1.

Photograph No. 33

Alternate view of the plug.

Photograph No. 34

Side view of structure with the plug.

Box Culvert North to South Section)

Photograph No. 35

The box culvert running north to south appeared to be full of concrete and debris.

Photograph No. 36

Looking North along Box Culvert toward the Former Office Building “The Mansion”

Photograph No. 37

North-South Section of Box Culvert, note debris in culvert.

Photograph No 38

East-west Section of Box Culvert west of the Light Oil Area

Note 90 degree Ell into culvert.

Photograph No. 39

North-South Culvert South of Mansion, note this section much deeper than East-West Box Culvert

Photograph No. 40

Debris and Obstructions in North-South Box Culvert

Note: Less sediment in this section

Photograph No. 41

Flow constrained

Photograph No. 42

Deep Section of Box Culvert Approaching the Mansion Sump

Photograph No. 43

Box Culvert Near Mansion

Photograph No. 44

North-South box culvert

Note: there are electrical conduits crossing the Box Culvert.

Photograph No. 45

Approaching the Mansion Sump

Photograph No. 46

An electrical conduit running across the culvert to the Mansion.

Photograph No. 47

Electrical Conduit Near Mansion

Photograph No. 48

Discharge Into the Mansion Sump

Grated Opening to the West (Right) is the Discharge to the North-South Sewer

Photograph No. 49

Beginning of North Storm Sewer at Firewater Standpipe

This Structure Held Riverwater

Photograph No. 50

Yard Drain West of Standpipe (Blue Structure) and Southwest of Rail Scale (Brick Structure)

Photograph No. 51

Drop Inlet at West End of Warehouse

This inlet was completely buried

Photograph No. 52

Drop Inlet East of Oil House

Gravel berm added to protect inlet.

Photograph No. 53

Inlet at Southwest Corner of Oil House

Photograph No. 54

Inlet Between Machine Shop and Maintenance Building

October 02, 2020 Service Request No:R2008433

Mr. Todd Waldrop
Inventum Engineering
481 Carlisle Drive
Herndon, VA 20170

Laboratory Results for: Riverview

Dear Mr.Waldrop,

Enclosed are the results of the sample(s) submitted to our laboratory September 12, 2020
For your reference, these analyses have been assigned our service request number **R2008433.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

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dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Received: 09/12/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Six soil samples were received for analysis at ALS Environmental on 09/12/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

Method 8270D, 09/25/2020: The lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. Sample associated with is batch was re-extracted for low surrogate. The analytes affected are flagged in the LCS Summary.

2,4-Dinitrophenol has been reported as zero percent recovery in the LCSD due to a limitation in LIMs. 2,4-Dinitrophenol was detected at 40% recovery, respectively, within laboratory limits. The LCSD is acceptable and should not be flagged on the summary form.

N-Nitrosodimethylamine has been reported as zero percent recovery in the LCS/LCSD due to a limitation in LIMs. N-Nitrosodimethylamine was detected at 4% and 6% recovery, respectively, outside laboratory limits. The LCS/LCSD is not acceptable and should be flagged on the summary form.

Method 8270D, R2008433-001: The control limits were exceeded for one or more surrogates due to matrix interferences. A re-extraction and reanalysis was performed, but produced similar results. The re-extraction was performed out of holding time.

Semivoa GC:

No significant anomalies were noted with this analysis.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 09/16/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8260C, 09/16/2020: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Method 8260C, 09/16/2020, R2008433-001,004,005,006: The recovery of one or more internal standards was outside control limits because of suspected matrix interference. The sample was re-extracted and reanalyzed, but produced similar results. No further corrective action was appropriate.

Approved by Meghan Pedro Date 10/02/2020

Method 8260C, 09/21/2020: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Method 8260C, 09/21/2020, R2008433-001,004,005,006: The recovery of one or more internal standards was outside control limits because of suspected matrix interference. The sample was re-extracted and reanalyzed, but produced similar results. No further corrective action was appropriate.

Method 8260C, 09/21/2020: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Approved by _____ Date 10/02/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: SD-MS-09082020			Lab ID: R2008433-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Ammonia as Nitrogen, undistilled	79			26	mg/Kg	350.1M
Cyanide, Total	96.8			1.4	mg/Kg	9012B
pH	6.51				pH Units	9045D
Total Solids	19.2				Percent	ALS SOP
Aluminum, Total	18100			96	mg/Kg	6010C
Arsenic, Total	12.7			4.8	mg/Kg	6010C
Barium, Total	78.7			9.6	mg/Kg	6010C
Beryllium, Total	1.8			1.4	mg/Kg	6010C
Cadmium, Total	3.0			2.4	mg/Kg	6010C
Calcium, Total	39600			480	mg/Kg	6010C
Chromium, Total	103			4.8	mg/Kg	6010C
Copper, Total	176			9.6	mg/Kg	6010C
Iron, Total	74300			960	mg/Kg	6010C
Lead, Total	95			24	mg/Kg	6010C
Magnesium, Total	8620			480	mg/Kg	6010C
Manganese, Total	435			9.6	mg/Kg	6010C
Mercury, Total	2.40			0.17	mg/Kg	7471B
Nickel, Total	21			19	mg/Kg	6010C
Sodium, Total	660			480	mg/Kg	6010C
Vanadium, Total	40			24	mg/Kg	6010C
Zinc, Total	315			9.6	mg/Kg	6010C
Acetone	190			26	ug/Kg	8260C
Benz(a)anthracene	2800			2100	ug/Kg	8270D
Benzo(a)pyrene	3500			2100	ug/Kg	8270D
Benzo(b)fluoranthene	5100			2100	ug/Kg	8270D
Benzo(g,h,i)perylene	2500			2100	ug/Kg	8270D
Chrysene	3300			2100	ug/Kg	8270D
Fluoranthene	5500			2100	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	2700			2100	ug/Kg	8270D
Naphthalene	2200			2100	ug/Kg	8270D
Phenanthrene	3300			2100	ug/Kg	8270D
Pyrene	4400			2100	ug/Kg	8270D
Benz(a)anthracene	3100			1700	ug/Kg	8270D
Benzo(a)pyrene	3600			1700	ug/Kg	8270D
Benzo(b)fluoranthene	5300			1700	ug/Kg	8270D
Benzo(g,h,i)perylene	3600			1700	ug/Kg	8270D
Chrysene	3900			1700	ug/Kg	8270D
Fluoranthene	5000			1700	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	3600			1700	ug/Kg	8270D
Phenanthrene	2700			1700	ug/Kg	8270D
Pyrene	4200			1700	ug/Kg	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: SD-BC-1415-09082020			Lab ID: R2008433-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Ammonia as Nitrogen, undistilled	152			54	mg/Kg	350.1M
Cyanide, Total	254			2.8	mg/Kg	9012B
pH	6.85				pH Units	9045D
Total Solids	9.20				Percent	ALS SOP
Aluminum, Total	40500			200	mg/Kg	6010C
Arsenic, Total	30			10	mg/Kg	6010C
Barium, Total	366			20	mg/Kg	6010C
Beryllium, Total	5.7			3.0	mg/Kg	6010C
Cadmium, Total	6.4			5.0	mg/Kg	6010C
Calcium, Total	842000			10000	mg/Kg	6010C
Chromium, Total	197			10	mg/Kg	6010C
Copper, Total	356			20	mg/Kg	6010C
Iron, Total	237000			2000	mg/Kg	6010C
Lead, Total	142			50	mg/Kg	6010C
Magnesium, Total	73000			1000	mg/Kg	6010C
Manganese, Total	3370			20	mg/Kg	6010C
Mercury, Total	3.41			0.35	mg/Kg	7471B
Nickel, Total	166			40	mg/Kg	6010C
Potassium, Total	3500			2000	mg/Kg	6010C
Sodium, Total	2200			1000	mg/Kg	6010C
Vanadium, Total	99			50	mg/Kg	6010C
Zinc, Total	741			20	mg/Kg	6010C
Acetone	280			54	ug/Kg	8260C
Benzo(b)fluoranthene	9800			6500	ug/Kg	8270D
Chrysene	7500			6500	ug/Kg	8270D
Fluoranthene	12000			6500	ug/Kg	8270D
Phenanthrene	6700			6500	ug/Kg	8270D
Pyrene	9500			6500	ug/Kg	8270D

CLIENT ID: SD-BC-1350-09082020			Lab ID: R2008433-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Ammonia as Nitrogen, undistilled	18.8			9.1	mg/Kg	350.1M
Cyanide, Total	8.00			0.38	mg/Kg	9012B
pH	6.99				pH Units	9045D
Total Solids	54.7				Percent	ALS SOP
Aluminum, Total	7910			35	mg/Kg	6010C
Arsenic, Total	6.3			1.8	mg/Kg	6010C
Barium, Total	82.4			3.5	mg/Kg	6010C
Beryllium, Total	0.88			0.53	mg/Kg	6010C
Cadmium, Total	1.65			0.88	mg/Kg	6010C
Calcium, Total	38700			180	mg/Kg	6010C
Chromium, Total	49.3			1.8	mg/Kg	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: SD-BC-1350-09082020			Lab ID: R2008433-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Copper, Total	103			3.5	mg/Kg	6010C
Iron, Total	38000			350	mg/Kg	6010C
Lead, Total	137			8.8	mg/Kg	6010C
Magnesium, Total	5030			180	mg/Kg	6010C
Manganese, Total	400			3.5	mg/Kg	6010C
Mercury, Total	3.08			0.29	mg/Kg	7471B
Nickel, Total	21.7			7.0	mg/Kg	6010C
Potassium, Total	520			350	mg/Kg	6010C
Sodium, Total	530			180	mg/Kg	6010C
Vanadium, Total	16.3			8.8	mg/Kg	6010C
Zinc, Total	311			3.5	mg/Kg	6010C
Acetone	36			9.1	ug/Kg	8260C
Benzene	16			9.1	ug/Kg	8260C
2,4-Dimethylphenol	870			690	ug/Kg	8270D
2-Methylnaphthalene	1800			690	ug/Kg	8270D
2-Methylphenol	2100			690	ug/Kg	8270D
3- and 4-Methylphenol Coelution	1600			690	ug/Kg	8270D
Acenaphthylene	1900			690	ug/Kg	8270D
Anthracene	3500			690	ug/Kg	8270D
Benz(a)anthracene	10000	E		690	ug/Kg	8270D
Benzo(a)pyrene	9100	E		690	ug/Kg	8270D
Benzo(b)fluoranthene	15000	E		690	ug/Kg	8270D
Benzo(g,h,i)perylene	5000			690	ug/Kg	8270D
Benzo(k)fluoranthene	4600			690	ug/Kg	8270D
Carbazole	1800			690	ug/Kg	8270D
Chrysene	11000	E		690	ug/Kg	8270D
Dibenz(a,h)anthracene	1800			690	ug/Kg	8270D
Dibenzofuran	1700			690	ug/Kg	8270D
Fluoranthene	11000	E		690	ug/Kg	8270D
Fluorene	1800			690	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	5400			690	ug/Kg	8270D
Naphthalene	4700			690	ug/Kg	8270D
Phenanthrene	8100	E		690	ug/Kg	8270D
Phenol	1400			690	ug/Kg	8270D
Pyrene	9800	E		690	ug/Kg	8270D

CLIENT ID: SD-BC-1329-09082020			Lab ID: R2008433-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Ammonia as Nitrogen, undistilled	39.7			7.2	mg/Kg	350.1M
Cyanide, Total	10.3			0.43	mg/Kg	9012B
pH	6.91				pH Units	9045D
Total Solids	69.2				Percent	ALS SOP

SAMPLE DETECTION SUMMARY

CLIENT ID: SD-BC-1329-09082020			Lab ID: R2008433-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Aluminum, Total	3090			27	mg/Kg	6010C
Arsenic, Total	4.4			1.3	mg/Kg	6010C
Barium, Total	34.7			2.7	mg/Kg	6010C
Beryllium, Total	0.54			0.40	mg/Kg	6010C
Cadmium, Total	0.91			0.67	mg/Kg	6010C
Calcium, Total	9730			130	mg/Kg	6010C
Chromium, Total	19.9			1.3	mg/Kg	6010C
Copper, Total	22.1			2.7	mg/Kg	6010C
Iron, Total	17700			270	mg/Kg	6010C
Lead, Total	20.3			6.7	mg/Kg	6010C
Magnesium, Total	3510			130	mg/Kg	6010C
Manganese, Total	106			2.7	mg/Kg	6010C
Mercury, Total	0.361			0.045	mg/Kg	7471B
Nickel, Total	12.1			5.4	mg/Kg	6010C
Potassium, Total	320			270	mg/Kg	6010C
Sodium, Total	210			130	mg/Kg	6010C
Vanadium, Total	11.8			6.7	mg/Kg	6010C
Zinc, Total	82.2			2.7	mg/Kg	6010C
Acetone	32			7.2	ug/Kg	8260C
Benzene	8.2			7.2	ug/Kg	8260C
2-Methylnaphthalene	910			480	ug/Kg	8270D
Acenaphthylene	2600			480	ug/Kg	8270D
Anthracene	2800			480	ug/Kg	8270D
Benz(a)anthracene	6100	E		480	ug/Kg	8270D
Benzo(a)pyrene	5800	E		480	ug/Kg	8270D
Benzo(b)fluoranthene	9800	E		480	ug/Kg	8270D
Benzo(g,h,i)perylene	4600			480	ug/Kg	8270D
Benzo(k)fluoranthene	3100			480	ug/Kg	8270D
Carbazole	890			480	ug/Kg	8270D
Chrysene	6300	E		480	ug/Kg	8270D
Dibenz(a,h)anthracene	1300			480	ug/Kg	8270D
Dibenzofuran	1100			480	ug/Kg	8270D
Fluoranthene	7100	E		480	ug/Kg	8270D
Fluorene	1800			480	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	4500			480	ug/Kg	8270D
Naphthalene	3600			480	ug/Kg	8270D
Phenanthrene	6200	E		480	ug/Kg	8270D
Pyrene	6200	E		480	ug/Kg	8270D
Acenaphthylene	2800	D		1500	ug/Kg	8270D
Anthracene	3100	D		1500	ug/Kg	8270D
Benz(a)anthracene	6800	D		1500	ug/Kg	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: SD-BC-1329-09082020			Lab ID: R2008433-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Benzo(a)pyrene	6300	D		1500	ug/Kg	8270D
Benzo(b)fluoranthene	9600	D		1500	ug/Kg	8270D
Benzo(g,h,i)perylene	4000	D		1500	ug/Kg	8270D
Benzo(k)fluoranthene	3200	D		1500	ug/Kg	8270D
Chrysene	7300	D		1500	ug/Kg	8270D
Fluoranthene	11000	D		1500	ug/Kg	8270D
Fluorene	1900	D		1500	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	4300	D		1500	ug/Kg	8270D
Naphthalene	4200	D		1500	ug/Kg	8270D
Phenanthrene	9100	D		1500	ug/Kg	8270D
Pyrene	8400	D		1500	ug/Kg	8270D

CLIENT ID: SD-BC-1266-09082020			Lab ID: R2008433-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Ammonia as Nitrogen, undistilled	12.9			7.9	mg/Kg	350.1M
Cyanide, Total	7.12			0.44	mg/Kg	9012B
pH	7.29				pH Units	9045D
Total Solids	63.3				Percent	ALS SOP
Aluminum, Total	1680			29	mg/Kg	6010C
Arsenic, Total	3.7			1.5	mg/Kg	6010C
Barium, Total	35.9			2.9	mg/Kg	6010C
Beryllium, Total	0.60			0.44	mg/Kg	6010C
Calcium, Total	19700			150	mg/Kg	6010C
Chromium, Total	9.9			1.5	mg/Kg	6010C
Copper, Total	36.2			2.9	mg/Kg	6010C
Iron, Total	11300			290	mg/Kg	6010C
Lead, Total	16.7			7.3	mg/Kg	6010C
Magnesium, Total	870			150	mg/Kg	6010C
Manganese, Total	99.2			2.9	mg/Kg	6010C
Mercury, Total	0.142			0.052	mg/Kg	7471B
Nickel, Total	10.5			5.9	mg/Kg	6010C
Sodium, Total	200			150	mg/Kg	6010C
Vanadium, Total	8.1			7.3	mg/Kg	6010C
Zinc, Total	82.0			2.9	mg/Kg	6010C
Acetone	27			7.9	ug/Kg	8260C
Anthracene	1100			530	ug/Kg	8270D
Benz(a)anthracene	2800			530	ug/Kg	8270D
Benzo(a)pyrene	2800			530	ug/Kg	8270D
Benzo(b)fluoranthene	4400			530	ug/Kg	8270D
Benzo(g,h,i)perylene	1700			530	ug/Kg	8270D
Benzo(k)fluoranthene	1500			530	ug/Kg	8270D
Carbazole	890			530	ug/Kg	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: SD-BC-1266-09082020			Lab ID: R2008433-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Chrysene	3600			530	ug/Kg	8270D
Dibenz(a,h)anthracene	550			530	ug/Kg	8270D
Fluoranthene	4600			530	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	1800			530	ug/Kg	8270D
Naphthalene	720			530	ug/Kg	8270D
Phenanthrene	2800			530	ug/Kg	8270D
Pyrene	3700			530	ug/Kg	8270D

CLIENT ID: SD-BC-1219-09082020			Lab ID: R2008433-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Ammonia as Nitrogen, undistilled	77			17	mg/Kg	350.1M
Cyanide, Total	90.9			4.9	mg/Kg	9012B
pH	6.30				pH Units	9045D
Total Solids	29.0				Percent	ALS SOP
Aluminum, Total	4920			68	mg/Kg	6010C
Arsenic, Total	37.0			3.4	mg/Kg	6010C
Barium, Total	64.0			6.8	mg/Kg	6010C
Calcium, Total	3660			340	mg/Kg	6010C
Chromium, Total	70.6			3.4	mg/Kg	6010C
Copper, Total	114			6.8	mg/Kg	6010C
Iron, Total	85300			680	mg/Kg	6010C
Lead, Total	44			17	mg/Kg	6010C
Magnesium, Total	770			340	mg/Kg	6010C
Manganese, Total	167			6.8	mg/Kg	6010C
Mercury, Total	0.73			0.11	mg/Kg	7471B
Sodium, Total	390			340	mg/Kg	6010C
Vanadium, Total	40			17	mg/Kg	6010C
Zinc, Total	70.0			6.8	mg/Kg	6010C
2-Butanone (MEK)	17			17	ug/Kg	8260C
Acetone	150			17	ug/Kg	8260C
Benz(a)anthracene	8200			3200	ug/Kg	8270D
Benzo(a)pyrene	8900			3200	ug/Kg	8270D
Benzo(b)fluoranthene	16000			3200	ug/Kg	8270D
Benzo(g,h,i)perylene	7300			3200	ug/Kg	8270D
Benzo(k)fluoranthene	5400			3200	ug/Kg	8270D
Chrysene	11000			3200	ug/Kg	8270D
Fluoranthene	14000			3200	ug/Kg	8270D
Indeno(1,2,3-cd)pyrene	7200			3200	ug/Kg	8270D
Naphthalene	6600			3200	ug/Kg	8270D
Phenanthrene	9400			3200	ug/Kg	8270D
Pyrene	11000			3200	ug/Kg	8270D

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Inventum Engineering **Service Request:**R2008433
Project: Riverview

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2008433-001	SD-MS-09082020	9/8/2020	
R2008433-002	SD-BC-1415-09082020	9/8/2020	
R2008433-003	SD-BC-1350-09082020	9/8/2020	
R2008433-004	SD-BC-1329-09082020	9/8/2020	
R2008433-005	SD-BC-1266-09082020	9/8/2020	
R2008433-006	SD-BC-1219-09082020	9/8/2020	

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003605

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE ______ OF ______

Project Name	Project Number
Project Manager: Todd Waldrop	Report CC
Company/Address: 481 Carlisle Dr. Herndon VA. 20170	
Phone #: (571) 217-3627	Email: todd.waldrop@inventumeng.com
Sampler's Signature: Keith Adderley	Sampler's Printed Name: Keith Adderley

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs • 8260 • 624 • CLP Full TCLP	GC/MS SVOAs • 8270 • 625 Metals	GC VOAs • 8021 • 601/602 Corr., Ign., React.	PESTICIDES • 8081 • 608 Cn, NH3, Solids	PCBs • 8082 • 608 8260	METALS, TOTAL (List in comments below) TCLP VOA	METALS, DISSOLVED (List in comments below) 8270, 8082								REMARKS/ ALTERNATE DESCRIPTION
SD-MS-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1415-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1350-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1329-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1266-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1219-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1350-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ______

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
✓ Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE
______

REPORT REQUIREMENTS
____ I. Results Only
✓ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data

Edata ____ Yes ____ No

INVOICE INFORMATION
PO #
BILL TO: Same as Company address

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Keith Adderley	Signature: [signature]	Signature	Signature	Signature	
Printed Name: Keith Adderley	Printed Name: Daniel White	Printed Name	Printed Name	Printed Name	
Firm	Firm: ALS	Firm	Firm	Firm	
Date/Time	Date/Time: 9/12/2020/ 0850	Date/Time	Date/Time	Date/Time	

R2008433 5
Inventum Engineering
Riverview

Distribution: White - Lab Copy; Yellow - Return to Originator

R2008433 5
Inventum Engineering
Riverview

Cooler Receipt and Preservation Check Form

Project/Client_____ Folder Number_____.

Cooler received on 9/12/2020 by: DW

COURIER: ALS UPS ~~FEDEX~~ VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)
2	**Custody papers** properly completed (ink, signed)?	(Y) N
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N
4	Circle: **Wet Ice** **Dry Ice** **Gel packs** present?	(Y) N

5a	**Perchlorate** samples have required headspace?	Y N (NA)
5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N (NA)
6	Where did the bottles originate?	(ALS/ROC) CLIENT
7	Soil VOA received as: Bulk Encore 5035set	(NA)

8. Temperature Readings Date: 9/12/2020 Time: 0855 ID: IR#7 ~~IR#10~~ From: ~~Temp Blank~~ Sample Bottle

Observed Temp (°C)	2.1	4.0					
Within 0-6°C?	(Y) N	(Y) N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-007 by DW on 9/12/2020 at 0855
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 9/15/2020 Time: 0900 by: AD

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? ~~YES~~ (NO)
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 081020-1SB
Explain all Discrepancies/ Other Comments:

"SB-130-" on COC twice.

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: (1)
PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.

J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).

B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.

E Organics- Concentration has exceeded the calibration range for that specific analysis.

D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.

* Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.

H Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.

Spike was diluted out.

\+ Correlation coefficient for MSA is <0.995.

N Inorganics- Matrix spike recovery was outside laboratory limits.

N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.

S Concentration has been determined using Method of Standard Additions (MSA).

W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.

P Concentration >40% difference between the two GC columns.

C Confirmed by GC/MS

Q DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).

X See Case Narrative for discussion.

MRL Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Inventum Engineering **Service Request:** R2008433
Project: Riverview

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
350.1M	Soil	Ammonia as Nitrogen, undistilled
ALS SOP	Soil	Total Solids

Client: Inventum Engineering **Service Request:** R2008433
Project: Riverview/

Sample Name: SD-MS-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-001 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
350.1M	GNITAJOUPPI	MROGERSON
6010C	AKONZEL	NMANSEN
7471B	AKONZEL	KMCLAEN
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
9045D		STALARICO
ALS SOP		KAWONG

Sample Name: SD-MS-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-001.R01 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8260C		FNAEGLER
8270D	JMISIUREWICZ	JMISIUREWICZ

Sample Name: SD-BC-1415-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-002 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
350.1M	GNITAJOUPPI	MROGERSON
6010C	AKONZEL	NMANSEN
7471B	AKONZEL	KMCLAEN
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	JMISIUREWICZ	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
9045D		STALARICO
ALS SOP		KAWONG

Client: Inventum Engineering **Service Request:** R2008433
Project: Riverview/

Sample Name: SD-BC-1350-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-003 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
350.1M	GNITAJOUPPI	MROGERSON
6010C	AKONZEL	NMANSEN
7471B	AKONZEL	KMCLAEN
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	JMISIUREWICZ	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
9045D		STALARICO
ALS SOP		KAWONG

Sample Name: SD-BC-1350-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-003.R01 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8270D	JMISIUREWICZ	JMISIUREWICZ

Sample Name: SD-BC-1329-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-004 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
350.1M	GNITAJOUPPI	MROGERSON
6010C	AKONZEL	NMANSEN
7471B	AKONZEL	KMCLAEN
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	JMISIUREWICZ	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
9045D		STALARICO
ALS SOP		KAWONG

Client: Inventum Engineering **Service Request:** R2008433
Project: Riverview/

Sample Name: SD-BC-1329-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-004.R01 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8260C		FNAEGLER
8270D	JMISIUREWICZ	JMISIUREWICZ

Sample Name: SD-BC-1266-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-005 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
350.1M	GNITAJOUPPI	MROGERSON
6010C	AKONZEL	KMCLAEN
6010C	AKONZEL	NMANSEN
7471B	AKONZEL	KMCLAEN
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	JMISIUREWICZ	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
9045D		STALARICO
ALS SOP		KAWONG

Sample Name: SD-BC-1266-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-005.R01 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8260C		FNAEGLER

Client: Inventum Engineering **Service Request:** R2008433
Project: Riverview/

Sample Name: SD-BC-1219-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-006 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
350.1M	GNITAJOUPPI	MROGERSON
6010C	AKONZEL	NMANSEN
7471B	AKONZEL	KMCLAEN
8082A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	JMISIUREWICZ	JMISIUREWICZ
9012B	MROGERSON	MROGERSON
9045D		STALARICO
ALS SOP		KAWONG

Sample Name: SD-BC-1219-09082020 **Date Collected:** 09/8/20
Lab Code: R2008433-006.R01 **Date Received:** 09/12/20
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
8260C		FNAEGLER

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
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Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-MS-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-001	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	26 U	26	1	09/16/20 19:39	
1,1,2,2-Tetrachloroethane	26 U	26	1	09/16/20 19:39	
1,1,2-Trichloroethane	26 U	26	1	09/16/20 19:39	
1,1,2-Trichloro-1,2,2-trifluoroethane	26 U	26	1	09/16/20 19:39	
1,1-Dichloroethane (1,1-DCA)	26 U	26	1	09/16/20 19:39	
1,1-Dichloroethene (1,1-DCE)	26 U	26	1	09/16/20 19:39	
1,2,3-Trichlorobenzene	26 U	26	1	09/16/20 19:39	
1,2,4-Trichlorobenzene	26 U	26	1	09/16/20 19:39	
1,2-Dibromo-3-chloropropane (DBCP)	26 U	26	1	09/16/20 19:39	
1,2-Dibromoethane	26 U	26	1	09/16/20 19:39	
1,2-Dichlorobenzene	26 U	26	1	09/16/20 19:39	
1,2-Dichloroethane	26 U	26	1	09/16/20 19:39	
1,2-Dichloropropane	26 U	26	1	09/16/20 19:39	
1,3-Dichlorobenzene	26 U	26	1	09/16/20 19:39	
1,4-Dichlorobenzene	26 U	26	1	09/16/20 19:39	
1,4-Dioxane	520 U	520	1	09/16/20 19:39	
2-Butanone (MEK)	26 U	26	1	09/16/20 19:39	
2-Hexanone	26 U	26	1	09/16/20 19:39	
4-Methyl-2-pentanone	26 U	26	1	09/16/20 19:39	
Acetone	**190**	26	1	09/16/20 19:39	
Benzene	26 U	26	1	09/16/20 19:39	
Bromochloromethane	26 U	26	1	09/16/20 19:39	
Bromodichloromethane	26 U	26	1	09/16/20 19:39	
Bromoform	26 U	26	1	09/16/20 19:39	
Bromomethane	26 U	26	1	09/16/20 19:39	
Carbon Disulfide	26 U	26	1	09/16/20 19:39	
Carbon Tetrachloride	26 U	26	1	09/16/20 19:39	
Chlorobenzene	26 U	26	1	09/16/20 19:39	
Chloroethane	26 U	26	1	09/16/20 19:39	
Chloroform	26 U	26	1	09/16/20 19:39	
Chloromethane	26 U	26	1	09/16/20 19:39	
Cyclohexane	26 U	26	1	09/16/20 19:39	
Dibromochloromethane	26 U	26	1	09/16/20 19:39	
Dichlorodifluoromethane (CFC 12)	26 U	26	1	09/16/20 19:39	
Dichloromethane	26 U	26	1	09/16/20 19:39	
Ethylbenzene	26 U	26	1	09/16/20 19:39	
Isopropylbenzene (Cumene)	26 U	26	1	09/16/20 19:39	
Methyl Acetate	26 U	26	1	09/16/20 19:39	
Methyl tert-Butyl Ether	26 U	26	1	09/16/20 19:39	
Methylcyclohexane	26 U	26	1	09/16/20 19:39	
Styrene	26 U	26	1	09/16/20 19:39	
Tetrachloroethene (PCE)	26 U	26	1	09/16/20 19:39	
Tetrahydrofuran (THF)	26 U	26	1	09/16/20 19:39	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-MS-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-001	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
Toluene	26	U	26	1	09/16/20 19:39	
Trichloroethene (TCE)	26	U	26	1	09/16/20 19:39	
Trichlorofluoromethane (CFC 11)	26	U	26	1	09/16/20 19:39	
Vinyl Chloride	26	U	26	1	09/16/20 19:39	
cis-1,2-Dichloroethene	26	U	26	1	09/16/20 19:39	
cis-1,3-Dichloropropene	26	U	26	1	09/16/20 19:39	
m,p-Xylenes	52	U	52	1	09/16/20 19:39	
o-Xylene	26	U	26	1	09/16/20 19:39	
trans-1,2-Dichloroethene	26	U	26	1	09/16/20 19:39	
trans-1,3-Dichloropropene	26	U	26	1	09/16/20 19:39	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	56	31 - 154	09/16/20 19:39	
Dibromofluoromethane	105	63 - 138	09/16/20 19:39	
Toluene-d8	96	66 - 138	09/16/20 19:39	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1415-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	54 U	54	1	09/16/20 20:03	
1,1,2,2-Tetrachloroethane	54 U	54	1	09/16/20 20:03	
1,1,2-Trichloroethane	54 U	54	1	09/16/20 20:03	
1,1,2-Trichloro-1,2,2-trifluoroethane	54 U	54	1	09/16/20 20:03	
1,1-Dichloroethane (1,1-DCA)	54 U	54	1	09/16/20 20:03	
1,1-Dichloroethene (1,1-DCE)	54 U	54	1	09/16/20 20:03	
1,2,3-Trichlorobenzene	54 U	54	1	09/16/20 20:03	
1,2,4-Trichlorobenzene	54 U	54	1	09/16/20 20:03	
1,2-Dibromo-3-chloropropane (DBCP)	54 U	54	1	09/16/20 20:03	
1,2-Dibromoethane	54 U	54	1	09/16/20 20:03	
1,2-Dichlorobenzene	54 U	54	1	09/16/20 20:03	
1,2-Dichloroethane	54 U	54	1	09/16/20 20:03	
1,2-Dichloropropane	54 U	54	1	09/16/20 20:03	
1,3-Dichlorobenzene	54 U	54	1	09/16/20 20:03	
1,4-Dichlorobenzene	54 U	54	1	09/16/20 20:03	
1,4-Dioxane	1100 U	1100	1	09/16/20 20:03	
2-Butanone (MEK)	54 U	54	1	09/16/20 20:03	
2-Hexanone	54 U	54	1	09/16/20 20:03	
4-Methyl-2-pentanone	54 U	54	1	09/16/20 20:03	
Acetone	**280**	54	1	09/16/20 20:03	
Benzene	54 U	54	1	09/16/20 20:03	
Bromochloromethane	54 U	54	1	09/16/20 20:03	
Bromodichloromethane	54 U	54	1	09/16/20 20:03	
Bromoform	54 U	54	1	09/16/20 20:03	
Bromomethane	54 U	54	1	09/16/20 20:03	
Carbon Disulfide	54 U	54	1	09/16/20 20:03	
Carbon Tetrachloride	54 U	54	1	09/16/20 20:03	
Chlorobenzene	54 U	54	1	09/16/20 20:03	
Chloroethane	54 U	54	1	09/16/20 20:03	
Chloroform	54 U	54	1	09/16/20 20:03	
Chloromethane	54 U	54	1	09/16/20 20:03	
Cyclohexane	54 U	54	1	09/16/20 20:03	
Dibromochloromethane	54 U	54	1	09/16/20 20:03	
Dichlorodifluoromethane (CFC 12)	54 U	54	1	09/16/20 20:03	
Dichloromethane	54 U	54	1	09/16/20 20:03	
Ethylbenzene	54 U	54	1	09/16/20 20:03	
Isopropylbenzene (Cumene)	54 U	54	1	09/16/20 20:03	
Methyl Acetate	54 U	54	1	09/16/20 20:03	
Methyl tert-Butyl Ether	54 U	54	1	09/16/20 20:03	
Methylcyclohexane	54 U	54	1	09/16/20 20:03	
Styrene	54 U	54	1	09/16/20 20:03	
Tetrachloroethene (PCE)	54 U	54	1	09/16/20 20:03	
Tetrahydrofuran (THF)	54 U	54	1	09/16/20 20:03	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1415-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-002	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
Toluene	54	U	54	1	09/16/20 20:03	
Trichloroethene (TCE)	54	U	54	1	09/16/20 20:03	
Trichlorofluoromethane (CFC 11)	54	U	54	1	09/16/20 20:03	
Vinyl Chloride	54	U	54	1	09/16/20 20:03	
cis-1,2-Dichloroethene	54	U	54	1	09/16/20 20:03	
cis-1,3-Dichloropropene	54	U	54	1	09/16/20 20:03	
m,p-Xylenes	110	U	110	1	09/16/20 20:03	
o-Xylene	54	U	54	1	09/16/20 20:03	
trans-1,2-Dichloroethene	54	U	54	1	09/16/20 20:03	
trans-1,3-Dichloropropene	54	U	54	1	09/16/20 20:03	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	73	31 - 154	09/16/20 20:03	
Dibromofluoromethane	105	63 - 138	09/16/20 20:03	
Toluene-d8	96	66 - 138	09/16/20 20:03	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1350-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-003	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	9.1 U	9.1	1	09/16/20 20:26	
1,1,2,2-Tetrachloroethane	9.1 U	9.1	1	09/16/20 20:26	
1,1,2-Trichloroethane	9.1 U	9.1	1	09/16/20 20:26	
1,1,2-Trichloro-1,2,2-trifluoroethane	9.1 U	9.1	1	09/16/20 20:26	
1,1-Dichloroethane (1,1-DCA)	9.1 U	9.1	1	09/16/20 20:26	
1,1-Dichloroethene (1,1-DCE)	9.1 U	9.1	1	09/16/20 20:26	
1,2,3-Trichlorobenzene	9.1 U	9.1	1	09/16/20 20:26	
1,2,4-Trichlorobenzene	9.1 U	9.1	1	09/16/20 20:26	
1,2-Dibromo-3-chloropropane (DBCP)	9.1 U	9.1	1	09/16/20 20:26	
1,2-Dibromoethane	9.1 U	9.1	1	09/16/20 20:26	
1,2-Dichlorobenzene	9.1 U	9.1	1	09/16/20 20:26	
1,2-Dichloroethane	9.1 U	9.1	1	09/16/20 20:26	
1,2-Dichloropropane	9.1 U	9.1	1	09/16/20 20:26	
1,3-Dichlorobenzene	9.1 U	9.1	1	09/16/20 20:26	
1,4-Dichlorobenzene	9.1 U	9.1	1	09/16/20 20:26	
1,4-Dioxane	180 U	180	1	09/16/20 20:26	
2-Butanone (MEK)	9.1 U	9.1	1	09/16/20 20:26	
2-Hexanone	9.1 U	9.1	1	09/16/20 20:26	
4-Methyl-2-pentanone	9.1 U	9.1	1	09/16/20 20:26	
Acetone	**36**	9.1	1	09/16/20 20:26	
Benzene	**16**	9.1	1	09/16/20 20:26	
Bromochloromethane	9.1 U	9.1	1	09/16/20 20:26	
Bromodichloromethane	9.1 U	9.1	1	09/16/20 20:26	
Bromoform	9.1 U	9.1	1	09/16/20 20:26	
Bromomethane	9.1 U	9.1	1	09/16/20 20:26	
Carbon Disulfide	9.1 U	9.1	1	09/16/20 20:26	
Carbon Tetrachloride	9.1 U	9.1	1	09/16/20 20:26	
Chlorobenzene	9.1 U	9.1	1	09/16/20 20:26	
Chloroethane	9.1 U	9.1	1	09/16/20 20:26	
Chloroform	9.1 U	9.1	1	09/16/20 20:26	
Chloromethane	9.1 U	9.1	1	09/16/20 20:26	
Cyclohexane	9.1 U	9.1	1	09/16/20 20:26	
Dibromochloromethane	9.1 U	9.1	1	09/16/20 20:26	
Dichlorodifluoromethane (CFC 12)	9.1 U	9.1	1	09/16/20 20:26	
Dichloromethane	9.1 U	9.1	1	09/16/20 20:26	
Ethylbenzene	9.1 U	9.1	1	09/16/20 20:26	
Isopropylbenzene (Cumene)	9.1 U	9.1	1	09/16/20 20:26	
Methyl Acetate	9.1 U	9.1	1	09/16/20 20:26	
Methyl tert-Butyl Ether	9.1 U	9.1	1	09/16/20 20:26	
Methylcyclohexane	9.1 U	9.1	1	09/16/20 20:26	
Styrene	9.1 U	9.1	1	09/16/20 20:26	
Tetrachloroethene (PCE)	9.1 U	9.1	1	09/16/20 20:26	
Tetrahydrofuran (THF)	9.1 U	9.1	1	09/16/20 20:26	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1350-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-003	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
Toluene	9.1	U	9.1	1	09/16/20 20:26	
Trichloroethene (TCE)	9.1	U	9.1	1	09/16/20 20:26	
Trichlorofluoromethane (CFC 11)	9.1	U	9.1	1	09/16/20 20:26	
Vinyl Chloride	9.1	U	9.1	1	09/16/20 20:26	
cis-1,2-Dichloroethene	9.1	U	9.1	1	09/16/20 20:26	
cis-1,3-Dichloropropene	9.1	U	9.1	1	09/16/20 20:26	
m,p-Xylenes	18	U	18	1	09/16/20 20:26	
o-Xylene	9.1	U	9.1	1	09/16/20 20:26	
trans-1,2-Dichloroethene	9.1	U	9.1	1	09/16/20 20:26	
trans-1,3-Dichloropropene	9.1	U	9.1	1	09/16/20 20:26	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	80	31 - 154	09/16/20 20:26	
Dibromofluoromethane	103	63 - 138	09/16/20 20:26	
Toluene-d8	101	66 - 138	09/16/20 20:26	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1329-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-004	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	7.2 U	7.2	1	09/16/20 20:49	
1,1,2,2-Tetrachloroethane	7.2 U	7.2	1	09/16/20 20:49	
1,1,2-Trichloroethane	7.2 U	7.2	1	09/16/20 20:49	
1,1,2-Trichloro-1,2,2-trifluoroethane	7.2 U	7.2	1	09/16/20 20:49	
1,1-Dichloroethane (1,1-DCA)	7.2 U	7.2	1	09/16/20 20:49	
1,1-Dichloroethene (1,1-DCE)	7.2 U	7.2	1	09/16/20 20:49	
1,2,3-Trichlorobenzene	7.2 U	7.2	1	09/16/20 20:49	
1,2,4-Trichlorobenzene	7.2 U	7.2	1	09/16/20 20:49	
1,2-Dibromo-3-chloropropane (DBCP)	7.2 U	7.2	1	09/16/20 20:49	
1,2-Dibromoethane	7.2 U	7.2	1	09/16/20 20:49	
1,2-Dichlorobenzene	7.2 U	7.2	1	09/16/20 20:49	
1,2-Dichloroethane	7.2 U	7.2	1	09/16/20 20:49	
1,2-Dichloropropane	7.2 U	7.2	1	09/16/20 20:49	
1,3-Dichlorobenzene	7.2 U	7.2	1	09/16/20 20:49	
1,4-Dichlorobenzene	7.2 U	7.2	1	09/16/20 20:49	
1,4-Dioxane	140 U	140	1	09/16/20 20:49	
2-Butanone (MEK)	7.2 U	7.2	1	09/16/20 20:49	
2-Hexanone	7.2 U	7.2	1	09/16/20 20:49	
4-Methyl-2-pentanone	7.2 U	7.2	1	09/16/20 20:49	
Acetone	**32**	7.2	1	09/16/20 20:49	
Benzene	**8.2**	7.2	1	09/16/20 20:49	
Bromochloromethane	7.2 U	7.2	1	09/16/20 20:49	
Bromodichloromethane	7.2 U	7.2	1	09/16/20 20:49	
Bromoform	7.2 U	7.2	1	09/16/20 20:49	
Bromomethane	7.2 U	7.2	1	09/16/20 20:49	
Carbon Disulfide	7.2 U	7.2	1	09/16/20 20:49	
Carbon Tetrachloride	7.2 U	7.2	1	09/16/20 20:49	
Chlorobenzene	7.2 U	7.2	1	09/16/20 20:49	
Chloroethane	7.2 U	7.2	1	09/16/20 20:49	
Chloroform	7.2 U	7.2	1	09/16/20 20:49	
Chloromethane	7.2 U	7.2	1	09/16/20 20:49	
Cyclohexane	7.2 U	7.2	1	09/16/20 20:49	
Dibromochloromethane	7.2 U	7.2	1	09/16/20 20:49	
Dichlorodifluoromethane (CFC 12)	7.2 U	7.2	1	09/16/20 20:49	
Dichloromethane	7.2 U	7.2	1	09/16/20 20:49	
Ethylbenzene	7.2 U	7.2	1	09/16/20 20:49	
Isopropylbenzene (Cumene)	7.2 U	7.2	1	09/16/20 20:49	
Methyl Acetate	7.2 U	7.2	1	09/16/20 20:49	
Methyl tert-Butyl Ether	7.2 U	7.2	1	09/16/20 20:49	
Methylcyclohexane	7.2 U	7.2	1	09/16/20 20:49	
Styrene	7.2 U	7.2	1	09/16/20 20:49	
Tetrachloroethene (PCE)	7.2 U	7.2	1	09/16/20 20:49	
Tetrahydrofuran (THF)	7.2 U	7.2	1	09/16/20 20:49	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1329-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-004	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
Toluene	7.2	U	7.2	1	09/16/20 20:49	
Trichloroethene (TCE)	7.2	U	7.2	1	09/16/20 20:49	
Trichlorofluoromethane (CFC 11)	7.2	U	7.2	1	09/16/20 20:49	
Vinyl Chloride	7.2	U	7.2	1	09/16/20 20:49	
cis-1,2-Dichloroethene	7.2	U	7.2	1	09/16/20 20:49	
cis-1,3-Dichloropropene	7.2	U	7.2	1	09/16/20 20:49	
m,p-Xylenes	14	U	14	1	09/16/20 20:49	
o-Xylene	7.2	U	7.2	1	09/16/20 20:49	
trans-1,2-Dichloroethene	7.2	U	7.2	1	09/16/20 20:49	
trans-1,3-Dichloropropene	7.2	U	7.2	1	09/16/20 20:49	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	54	31 - 154	09/16/20 20:49	
Dibromofluoromethane	104	63 - 138	09/16/20 20:49	
Toluene-d8	98	66 - 138	09/16/20 20:49	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1266-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-005	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	7.9 U	7.9	1	09/16/20 21:35	
1,1,2,2-Tetrachloroethane	7.9 U	7.9	1	09/16/20 21:35	
1,1,2-Trichloroethane	7.9 U	7.9	1	09/16/20 21:35	
1,1,2-Trichloro-1,2,2-trifluoroethane	7.9 U	7.9	1	09/16/20 21:35	
1,1-Dichloroethane (1,1-DCA)	7.9 U	7.9	1	09/16/20 21:35	
1,1-Dichloroethene (1,1-DCE)	7.9 U	7.9	1	09/16/20 21:35	
1,2,3-Trichlorobenzene	7.9 U	7.9	1	09/16/20 21:35	
1,2,4-Trichlorobenzene	7.9 U	7.9	1	09/16/20 21:35	
1,2-Dibromo-3-chloropropane (DBCP)	7.9 U	7.9	1	09/16/20 21:35	
1,2-Dibromoethane	7.9 U	7.9	1	09/16/20 21:35	
1,2-Dichlorobenzene	7.9 U	7.9	1	09/16/20 21:35	
1,2-Dichloroethane	7.9 U	7.9	1	09/16/20 21:35	
1,2-Dichloropropane	7.9 U	7.9	1	09/16/20 21:35	
1,3-Dichlorobenzene	7.9 U	7.9	1	09/16/20 21:35	
1,4-Dichlorobenzene	7.9 U	7.9	1	09/16/20 21:35	
1,4-Dioxane	160 U	160	1	09/16/20 21:35	
2-Butanone (MEK)	7.9 U	7.9	1	09/16/20 21:35	
2-Hexanone	7.9 U	7.9	1	09/16/20 21:35	
4-Methyl-2-pentanone	7.9 U	7.9	1	09/16/20 21:35	
Acetone	**27**	7.9	1	09/16/20 21:35	
Benzene	7.9 U	7.9	1	09/16/20 21:35	
Bromochloromethane	7.9 U	7.9	1	09/16/20 21:35	
Bromodichloromethane	7.9 U	7.9	1	09/16/20 21:35	
Bromoform	7.9 U	7.9	1	09/16/20 21:35	
Bromomethane	7.9 U	7.9	1	09/16/20 21:35	
Carbon Disulfide	7.9 U	7.9	1	09/16/20 21:35	
Carbon Tetrachloride	7.9 U	7.9	1	09/16/20 21:35	
Chlorobenzene	7.9 U	7.9	1	09/16/20 21:35	
Chloroethane	7.9 U	7.9	1	09/16/20 21:35	
Chloroform	7.9 U	7.9	1	09/16/20 21:35	
Chloromethane	7.9 U	7.9	1	09/16/20 21:35	
Cyclohexane	7.9 U	7.9	1	09/16/20 21:35	
Dibromochloromethane	7.9 U	7.9	1	09/16/20 21:35	
Dichlorodifluoromethane (CFC 12)	7.9 U	7.9	1	09/16/20 21:35	
Dichloromethane	7.9 U	7.9	1	09/16/20 21:35	
Ethylbenzene	7.9 U	7.9	1	09/16/20 21:35	
Isopropylbenzene (Cumene)	7.9 U	7.9	1	09/16/20 21:35	
Methyl Acetate	7.9 U	7.9	1	09/16/20 21:35	
Methyl tert-Butyl Ether	7.9 U	7.9	1	09/16/20 21:35	
Methylcyclohexane	7.9 U	7.9	1	09/16/20 21:35	
Styrene	7.9 U	7.9	1	09/16/20 21:35	
Tetrachloroethene (PCE)	7.9 U	7.9	1	09/16/20 21:35	
Tetrahydrofuran (THF)	7.9 U	7.9	1	09/16/20 21:35	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1266-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-005	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
Toluene	7.9	U	7.9	1	09/16/20 21:35	
Trichloroethene (TCE)	7.9	U	7.9	1	09/16/20 21:35	
Trichlorofluoromethane (CFC 11)	7.9	U	7.9	1	09/16/20 21:35	
Vinyl Chloride	7.9	U	7.9	1	09/16/20 21:35	
cis-1,2-Dichloroethene	7.9	U	7.9	1	09/16/20 21:35	
cis-1,3-Dichloropropene	7.9	U	7.9	1	09/16/20 21:35	
m,p-Xylenes	16	U	16	1	09/16/20 21:35	
o-Xylene	7.9	U	7.9	1	09/16/20 21:35	
trans-1,2-Dichloroethene	7.9	U	7.9	1	09/16/20 21:35	
trans-1,3-Dichloropropene	7.9	U	7.9	1	09/16/20 21:35	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	56	31 - 154	09/16/20 21:35	
Dibromofluoromethane	106	63 - 138	09/16/20 21:35	
Toluene-d8	97	66 - 138	09/16/20 21:35	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1219-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-006	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	17 U	17	1	09/16/20 21:12	
1,1,2,2-Tetrachloroethane	17 U	17	1	09/16/20 21:12	
1,1,2-Trichloroethane	17 U	17	1	09/16/20 21:12	
1,1,2-Trichloro-1,2,2-trifluoroethane	17 U	17	1	09/16/20 21:12	
1,1-Dichloroethane (1,1-DCA)	17 U	17	1	09/16/20 21:12	
1,1-Dichloroethene (1,1-DCE)	17 U	17	1	09/16/20 21:12	
1,2,3-Trichlorobenzene	17 U	17	1	09/16/20 21:12	
1,2,4-Trichlorobenzene	17 U	17	1	09/16/20 21:12	
1,2-Dibromo-3-chloropropane (DBCP)	17 U	17	1	09/16/20 21:12	
1,2-Dibromoethane	17 U	17	1	09/16/20 21:12	
1,2-Dichlorobenzene	17 U	17	1	09/16/20 21:12	
1,2-Dichloroethane	17 U	17	1	09/16/20 21:12	
1,2-Dichloropropane	17 U	17	1	09/16/20 21:12	
1,3-Dichlorobenzene	17 U	17	1	09/16/20 21:12	
1,4-Dichlorobenzene	17 U	17	1	09/16/20 21:12	
1,4-Dioxane	340 U	340	1	09/16/20 21:12	
2-Butanone (MEK)	**17**	17	1	09/16/20 21:12	
2-Hexanone	17 U	17	1	09/16/20 21:12	
4-Methyl-2-pentanone	17 U	17	1	09/16/20 21:12	
Acetone	**150**	17	1	09/16/20 21:12	
Benzene	17 U	17	1	09/16/20 21:12	
Bromochloromethane	17 U	17	1	09/16/20 21:12	
Bromodichloromethane	17 U	17	1	09/16/20 21:12	
Bromoform	17 U	17	1	09/16/20 21:12	
Bromomethane	17 U	17	1	09/16/20 21:12	
Carbon Disulfide	17 U	17	1	09/16/20 21:12	
Carbon Tetrachloride	17 U	17	1	09/16/20 21:12	
Chlorobenzene	17 U	17	1	09/16/20 21:12	
Chloroethane	17 U	17	1	09/16/20 21:12	
Chloroform	17 U	17	1	09/16/20 21:12	
Chloromethane	17 U	17	1	09/16/20 21:12	
Cyclohexane	17 U	17	1	09/16/20 21:12	
Dibromochloromethane	17 U	17	1	09/16/20 21:12	
Dichlorodifluoromethane (CFC 12)	17 U	17	1	09/16/20 21:12	
Dichloromethane	17 U	17	1	09/16/20 21:12	
Ethylbenzene	17 U	17	1	09/16/20 21:12	
Isopropylbenzene (Cumene)	17 U	17	1	09/16/20 21:12	
Methyl Acetate	17 U	17	1	09/16/20 21:12	
Methyl tert-Butyl Ether	17 U	17	1	09/16/20 21:12	
Methylcyclohexane	17 U	17	1	09/16/20 21:12	
Styrene	17 U	17	1	09/16/20 21:12	
Tetrachloroethene (PCE)	17 U	17	1	09/16/20 21:12	
Tetrahydrofuran (THF)	17 U	17	1	09/16/20 21:12	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1219-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-006	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
Toluene	17	U	17	1	09/16/20 21:12	
Trichloroethene (TCE)	17	U	17	1	09/16/20 21:12	
Trichlorofluoromethane (CFC 11)	17	U	17	1	09/16/20 21:12	
Vinyl Chloride	17	U	17	1	09/16/20 21:12	
cis-1,2-Dichloroethene	17	U	17	1	09/16/20 21:12	
cis-1,3-Dichloropropene	17	U	17	1	09/16/20 21:12	
m,p-Xylenes	34	U	34	1	09/16/20 21:12	
o-Xylene	17	U	17	1	09/16/20 21:12	
trans-1,2-Dichloroethene	17	U	17	1	09/16/20 21:12	
trans-1,3-Dichloropropene	17	U	17	1	09/16/20 21:12	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	48	31 - 154	09/16/20 21:12	
Dibromofluoromethane	104	63 - 138	09/16/20 21:12	
Toluene-d8	98	66 - 138	09/16/20 21:12	

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-MS-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-001	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	2100 U	2100	1	09/23/20 01:36	9/16/20	
1,2-Dichlorobenzene	2100 U	2100	1	09/23/20 01:36	9/16/20	
1,3-Dichlorobenzene	2100 U	2100	1	09/23/20 01:36	9/16/20	
1,4-Dichlorobenzene	2100 U	2100	1	09/23/20 01:36	9/16/20	
2,4,5-Trichlorophenol	2100 U	2100	1	09/23/20 01:36	9/16/20	
2,4,6-Trichlorophenol	2100 U	2100	1	09/23/20 01:36	9/16/20	
2,4-Dichlorophenol	2100 U	2100	1	09/23/20 01:36	9/16/20	
2,4-Dimethylphenol	2100 U	2100	1	09/23/20 01:36	9/16/20	
2,4-Dinitrophenol	11000 U	11000	1	09/23/20 01:36	9/16/20	
2,4-Dinitrotoluene	2100 U	2100	1	09/23/20 01:36	9/16/20	
2,6-Dinitrotoluene	2100 U	2100	1	09/23/20 01:36	9/16/20	
2-Chloronaphthalene	2100 U	2100	1	09/23/20 01:36	9/16/20	
2-Chlorophenol	2100 U	2100	1	09/23/20 01:36	9/16/20	
2-Methylnaphthalene	2100 U	2100	1	09/23/20 01:36	9/16/20	
2-Methylphenol	2100 U	2100	1	09/23/20 01:36	9/16/20	
2-Nitroaniline	2100 U	2100	1	09/23/20 01:36	9/16/20	
2-Nitrophenol	2100 U	2100	1	09/23/20 01:36	9/16/20	
3,3'-Dichlorobenzidine	2100 U	2100	1	09/23/20 01:36	9/16/20	
3- and 4-Methylphenol Coelution	2100 U	2100	1	09/23/20 01:36	9/16/20	
3-Nitroaniline	2100 U	2100	1	09/23/20 01:36	9/16/20	
4,6-Dinitro-2-methylphenol	11000 U	11000	1	09/23/20 01:36	9/16/20	
4-Bromophenyl Phenyl Ether	2100 U	2100	1	09/23/20 01:36	9/16/20	
4-Chloro-3-methylphenol	2100 U	2100	1	09/23/20 01:36	9/16/20	
4-Chloroaniline	2100 U	2100	1	09/23/20 01:36	9/16/20	
4-Chlorophenyl Phenyl Ether	2100 U	2100	1	09/23/20 01:36	9/16/20	
4-Nitroaniline	2100 U	2100	1	09/23/20 01:36	9/16/20	
4-Nitrophenol	11000 U	11000	1	09/23/20 01:36	9/16/20	
Acenaphthene	2100 U	2100	1	09/23/20 01:36	9/16/20	
Acenaphthylene	2100 U	2100	1	09/23/20 01:36	9/16/20	
Anthracene	2100 U	2100	1	09/23/20 01:36	9/16/20	
Benz(a)anthracene	**2800**	2100	1	09/23/20 01:36	9/16/20	
Benzo(a)pyrene	**3500**	2100	1	09/23/20 01:36	9/16/20	
Benzo(b)fluoranthene	**5100**	2100	1	09/23/20 01:36	9/16/20	
Benzo(g,h,i)perylene	**2500**	2100	1	09/23/20 01:36	9/16/20	
Benzo(k)fluoranthene	2100 U	2100	1	09/23/20 01:36	9/16/20	
Benzyl Alcohol	2100 U	2100	1	09/23/20 01:36	9/16/20	
2,2'-Oxybis(1-chloropropane)	2100 U	2100	1	09/23/20 01:36	9/16/20	
Bis(2-chloroethoxy)methane	2100 U	2100	1	09/23/20 01:36	9/16/20	
Bis(2-chloroethyl) Ether	2100 U	2100	1	09/23/20 01:36	9/16/20	
Bis(2-ethylhexyl) Phthalate	3100 U	3100	1	09/23/20 01:36	9/16/20	
Butyl Benzyl Phthalate	2100 U	2100	1	09/23/20 01:36	9/16/20	
Carbazole	2100 U	2100	1	09/23/20 01:36	9/16/20	
Chrysene	**3300**	2100	1	09/23/20 01:36	9/16/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-MS-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-001	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	2100 U	2100	1	09/23/20 01:36	9/16/20	
Di-n-octyl Phthalate	2100 U	2100	1	09/23/20 01:36	9/16/20	
Dibenz(a,h)anthracene	2100 U	2100	1	09/23/20 01:36	9/16/20	
Dibenzofuran	2100 U	2100	1	09/23/20 01:36	9/16/20	
Diethyl Phthalate	2100 U	2100	1	09/23/20 01:36	9/16/20	
Dimethyl Phthalate	2100 U	2100	1	09/23/20 01:36	9/16/20	
Fluoranthene	**5500**	2100	1	09/23/20 01:36	9/16/20	
Fluorene	2100 U	2100	1	09/23/20 01:36	9/16/20	
Hexachlorobenzene	2100 U	2100	1	09/23/20 01:36	9/16/20	
Hexachlorobutadiene	2100 U	2100	1	09/23/20 01:36	9/16/20	
Hexachlorocyclopentadiene	2100 U	2100	1	09/23/20 01:36	9/16/20	
Hexachloroethane	2100 U	2100	1	09/23/20 01:36	9/16/20	
Indeno(1,2,3-cd)pyrene	**2700**	2100	1	09/23/20 01:36	9/16/20	
Isophorone	2100 U	2100	1	09/23/20 01:36	9/16/20	
N-Nitrosodi-n-propylamine	2100 U	2100	1	09/23/20 01:36	9/16/20	
N-Nitrosodimethylamine	2100 U	2100	1	09/23/20 01:36	9/16/20	
N-Nitrosodiphenylamine	2100 U	2100	1	09/23/20 01:36	9/16/20	
Naphthalene	**2200**	2100	1	09/23/20 01:36	9/16/20	
Nitrobenzene	2100 U	2100	1	09/23/20 01:36	9/16/20	
Pentachlorophenol (PCP)	11000 U	11000	1	09/23/20 01:36	9/16/20	
Phenanthrene	**3300**	2100	1	09/23/20 01:36	9/16/20	
Phenol	2100 U	2100	1	09/23/20 01:36	9/16/20	
Pyrene	**4400**	2100	1	09/23/20 01:36	9/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	13	10 - 109	09/23/20 01:36	
2-Fluorobiphenyl	8 *	10 - 102	09/23/20 01:36	*
2-Fluorophenol	6 *	10 - 88	09/23/20 01:36	*
Nitrobenzene-d5	6 *	10 - 95	09/23/20 01:36	*
Phenol-d6	7 *	10 - 145	09/23/20 01:36	*
p-Terphenyl-d14	8 *	10 - 106	09/23/20 01:36	*

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-MS-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-001	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
1,2-Dichlorobenzene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
1,3-Dichlorobenzene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
1,4-Dichlorobenzene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2,4,5-Trichlorophenol	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2,4,6-Trichlorophenol	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2,4-Dichlorophenol	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2,4-Dimethylphenol	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2,4-Dinitrophenol	8700 U	8700	1	09/25/20 10:44	9/23/20	*
2,4-Dinitrotoluene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2,6-Dinitrotoluene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2-Chloronaphthalene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2-Chlorophenol	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2-Methylnaphthalene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2-Methylphenol	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2-Nitroaniline	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2-Nitrophenol	1700 U	1700	1	09/25/20 10:44	9/23/20	*
3,3'-Dichlorobenzidine	1700 U	1700	1	09/25/20 10:44	9/23/20	*
3- and 4-Methylphenol Coelution	1700 U	1700	1	09/25/20 10:44	9/23/20	*
3-Nitroaniline	1700 U	1700	1	09/25/20 10:44	9/23/20	*
4,6-Dinitro-2-methylphenol	8700 U	8700	1	09/25/20 10:44	9/23/20	*
4-Bromophenyl Phenyl Ether	1700 U	1700	1	09/25/20 10:44	9/23/20	*
4-Chloro-3-methylphenol	1700 U	1700	1	09/25/20 10:44	9/23/20	*
4-Chloroaniline	1700 U	1700	1	09/25/20 10:44	9/23/20	*
4-Chlorophenyl Phenyl Ether	1700 U	1700	1	09/25/20 10:44	9/23/20	*
4-Nitroaniline	1700 U	1700	1	09/25/20 10:44	9/23/20	*
4-Nitrophenol	8700 U	8700	1	09/25/20 10:44	9/23/20	*
Acenaphthene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Acenaphthylene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Anthracene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Benz(a)anthracene	**3100**	1700	1	09/25/20 10:44	9/23/20	*
Benzo(a)pyrene	**3600**	1700	1	09/25/20 10:44	9/23/20	*
Benzo(b)fluoranthene	**5300**	1700	1	09/25/20 10:44	9/23/20	*
Benzo(g,h,i)perylene	**3600**	1700	1	09/25/20 10:44	9/23/20	*
Benzo(k)fluoranthene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Benzyl Alcohol	1700 U	1700	1	09/25/20 10:44	9/23/20	*
2,2'-Oxybis(1-chloropropane)	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Bis(2-chloroethoxy)methane	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Bis(2-chloroethyl) Ether	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Bis(2-ethylhexyl) Phthalate	2600 U	2600	1	09/25/20 10:44	9/23/20	*
Butyl Benzyl Phthalate	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Carbazole	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Chrysene	**3900**	1700	1	09/25/20 10:44	9/23/20	*

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-MS-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-001	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Di-n-octyl Phthalate	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Dibenz(a,h)anthracene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Dibenzofuran	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Diethyl Phthalate	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Dimethyl Phthalate	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Fluoranthene	**5000**	1700	1	09/25/20 10:44	9/23/20	*
Fluorene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Hexachlorobenzene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Hexachlorobutadiene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Hexachlorocyclopentadiene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Hexachloroethane	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Indeno(1,2,3-cd)pyrene	**3600**	1700	1	09/25/20 10:44	9/23/20	*
Isophorone	1700 U	1700	1	09/25/20 10:44	9/23/20	*
N-Nitrosodi-n-propylamine	1700 U	1700	1	09/25/20 10:44	9/23/20	*
N-Nitrosodimethylamine	1700 U	1700	1	09/25/20 10:44	9/23/20	*
N-Nitrosodiphenylamine	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Naphthalene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Nitrobenzene	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Pentachlorophenol (PCP)	8700 U	8700	1	09/25/20 10:44	9/23/20	*
Phenanthrene	**2700**	1700	1	09/25/20 10:44	9/23/20	*
Phenol	1700 U	1700	1	09/25/20 10:44	9/23/20	*
Pyrene	**4200**	1700	1	09/25/20 10:44	9/23/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	31	10 - 109	09/25/20 10:44	
2-Fluorobiphenyl	10	10 - 102	09/25/20 10:44	
2-Fluorophenol	5 *	10 - 88	09/25/20 10:44	*
Nitrobenzene-d5	7 *	10 - 95	09/25/20 10:44	*
Phenol-d6	7 *	10 - 145	09/25/20 10:44	*
p-Terphenyl-d14	33	10 - 106	09/25/20 10:44	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1415-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-002	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	6500	U	6500	1	09/23/20 02:04	9/16/20	
1,2-Dichlorobenzene	6500	U	6500	1	09/23/20 02:04	9/16/20	
1,3-Dichlorobenzene	6500	U	6500	1	09/23/20 02:04	9/16/20	
1,4-Dichlorobenzene	6500	U	6500	1	09/23/20 02:04	9/16/20	
2,4,5-Trichlorophenol	6500	U	6500	1	09/23/20 02:04	9/16/20	
2,4,6-Trichlorophenol	6500	U	6500	1	09/23/20 02:04	9/16/20	
2,4-Dichlorophenol	6500	U	6500	1	09/23/20 02:04	9/16/20	
2,4-Dimethylphenol	6500	U	6500	1	09/23/20 02:04	9/16/20	
2,4-Dinitrophenol	33000	U	33000	1	09/23/20 02:04	9/16/20	
2,4-Dinitrotoluene	6500	U	6500	1	09/23/20 02:04	9/16/20	
2,6-Dinitrotoluene	6500	U	6500	1	09/23/20 02:04	9/16/20	
2-Chloronaphthalene	6500	U	6500	1	09/23/20 02:04	9/16/20	
2-Chlorophenol	6500	U	6500	1	09/23/20 02:04	9/16/20	
2-Methylnaphthalene	6500	U	6500	1	09/23/20 02:04	9/16/20	
2-Methylphenol	6500	U	6500	1	09/23/20 02:04	9/16/20	
2-Nitroaniline	6500	U	6500	1	09/23/20 02:04	9/16/20	
2-Nitrophenol	6500	U	6500	1	09/23/20 02:04	9/16/20	
3,3'-Dichlorobenzidine	6500	U	6500	1	09/23/20 02:04	9/16/20	
3- and 4-Methylphenol Coelution	6500	U	6500	1	09/23/20 02:04	9/16/20	
3-Nitroaniline	6500	U	6500	1	09/23/20 02:04	9/16/20	
4,6-Dinitro-2-methylphenol	33000	U	33000	1	09/23/20 02:04	9/16/20	
4-Bromophenyl Phenyl Ether	6500	U	6500	1	09/23/20 02:04	9/16/20	
4-Chloro-3-methylphenol	6500	U	6500	1	09/23/20 02:04	9/16/20	
4-Chloroaniline	6500	U	6500	1	09/23/20 02:04	9/16/20	
4-Chlorophenyl Phenyl Ether	6500	U	6500	1	09/23/20 02:04	9/16/20	
4-Nitroaniline	6500	U	6500	1	09/23/20 02:04	9/16/20	
4-Nitrophenol	33000	U	33000	1	09/23/20 02:04	9/16/20	
Acenaphthene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Acenaphthylene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Anthracene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Benz(a)anthracene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Benzo(a)pyrene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Benzo(b)fluoranthene	**9800**		6500	1	09/23/20 02:04	9/16/20	
Benzo(g,h,i)perylene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Benzo(k)fluoranthene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Benzyl Alcohol	6500	U	6500	1	09/23/20 02:04	9/16/20	
2,2'-Oxybis(1-chloropropane)	6500	U	6500	1	09/23/20 02:04	9/16/20	
Bis(2-chloroethoxy)methane	6500	U	6500	1	09/23/20 02:04	9/16/20	
Bis(2-chloroethyl) Ether	6500	U	6500	1	09/23/20 02:04	9/16/20	
Bis(2-ethylhexyl) Phthalate	9800	U	9800	1	09/23/20 02:04	9/16/20	
Butyl Benzyl Phthalate	6500	U	6500	1	09/23/20 02:04	9/16/20	
Carbazole	6500	U	6500	1	09/23/20 02:04	9/16/20	
Chrysene	**7500**		6500	1	09/23/20 02:04	9/16/20	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1415-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-002	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	6500	U	6500	1	09/23/20 02:04	9/16/20	
Di-n-octyl Phthalate	6500	U	6500	1	09/23/20 02:04	9/16/20	
Dibenz(a,h)anthracene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Dibenzofuran	6500	U	6500	1	09/23/20 02:04	9/16/20	
Diethyl Phthalate	6500	U	6500	1	09/23/20 02:04	9/16/20	
Dimethyl Phthalate	6500	U	6500	1	09/23/20 02:04	9/16/20	
Fluoranthene	**12000**		6500	1	09/23/20 02:04	9/16/20	
Fluorene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Hexachlorobenzene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Hexachlorobutadiene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Hexachlorocyclopentadiene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Hexachloroethane	6500	U	6500	1	09/23/20 02:04	9/16/20	
Indeno(1,2,3-cd)pyrene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Isophorone	6500	U	6500	1	09/23/20 02:04	9/16/20	
N-Nitrosodi-n-propylamine	6500	U	6500	1	09/23/20 02:04	9/16/20	
N-Nitrosodimethylamine	6500	U	6500	1	09/23/20 02:04	9/16/20	
N-Nitrosodiphenylamine	6500	U	6500	1	09/23/20 02:04	9/16/20	
Naphthalene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Nitrobenzene	6500	U	6500	1	09/23/20 02:04	9/16/20	
Pentachlorophenol (PCP)	33000	U	33000	1	09/23/20 02:04	9/16/20	
Phenanthrene	**6700**		6500	1	09/23/20 02:04	9/16/20	
Phenol	6500	U	6500	1	09/23/20 02:04	9/16/20	
Pyrene	**9500**		6500	1	09/23/20 02:04	9/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	58	10 - 109	09/23/20 02:04	
2-Fluorobiphenyl	21	10 - 102	09/23/20 02:04	
2-Fluorophenol	14	10 - 88	09/23/20 02:04	
Nitrobenzene-d5	12	10 - 95	09/23/20 02:04	
Phenol-d6	18	10 - 145	09/23/20 02:04	
p-Terphenyl-d14	37	10 - 106	09/23/20 02:04	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1350-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-003	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	690	U	690	1	09/23/20 02:32	9/16/20	
1,2-Dichlorobenzene	690	U	690	1	09/23/20 02:32	9/16/20	
1,3-Dichlorobenzene	690	U	690	1	09/23/20 02:32	9/16/20	
1,4-Dichlorobenzene	690	U	690	1	09/23/20 02:32	9/16/20	
2,4,5-Trichlorophenol	690	U	690	1	09/23/20 02:32	9/16/20	
2,4,6-Trichlorophenol	690	U	690	1	09/23/20 02:32	9/16/20	
2,4-Dichlorophenol	690	U	690	1	09/23/20 02:32	9/16/20	
2,4-Dimethylphenol	**870**		690	1	09/23/20 02:32	9/16/20	
2,4-Dinitrophenol	3600	U	3600	1	09/23/20 02:32	9/16/20	
2,4-Dinitrotoluene	690	U	690	1	09/23/20 02:32	9/16/20	
2,6-Dinitrotoluene	690	U	690	1	09/23/20 02:32	9/16/20	
2-Chloronaphthalene	690	U	690	1	09/23/20 02:32	9/16/20	
2-Chlorophenol	690	U	690	1	09/23/20 02:32	9/16/20	
2-Methylnaphthalene	**1800**		690	1	09/23/20 02:32	9/16/20	
2-Methylphenol	**2100**		690	1	09/23/20 02:32	9/16/20	
2-Nitroaniline	690	U	690	1	09/23/20 02:32	9/16/20	
2-Nitrophenol	690	U	690	1	09/23/20 02:32	9/16/20	
3,3'-Dichlorobenzidine	690	U	690	1	09/23/20 02:32	9/16/20	
3- and 4-Methylphenol Coelution	**1600**		690	1	09/23/20 02:32	9/16/20	
3-Nitroaniline	690	U	690	1	09/23/20 02:32	9/16/20	
4,6-Dinitro-2-methylphenol	3600	U	3600	1	09/23/20 02:32	9/16/20	
4-Bromophenyl Phenyl Ether	690	U	690	1	09/23/20 02:32	9/16/20	
4-Chloro-3-methylphenol	690	U	690	1	09/23/20 02:32	9/16/20	
4-Chloroaniline	690	U	690	1	09/23/20 02:32	9/16/20	
4-Chlorophenyl Phenyl Ether	690	U	690	1	09/23/20 02:32	9/16/20	
4-Nitroaniline	690	U	690	1	09/23/20 02:32	9/16/20	
4-Nitrophenol	3600	U	3600	1	09/23/20 02:32	9/16/20	
Acenaphthene	690	U	690	1	09/23/20 02:32	9/16/20	
Acenaphthylene	**1900**		690	1	09/23/20 02:32	9/16/20	
Anthracene	**3500**		690	1	09/23/20 02:32	9/16/20	
Benz(a)anthracene	**10000**	**E**	690	1	09/23/20 02:32	9/16/20	
Benzo(a)pyrene	**9100**	**E**	690	1	09/23/20 02:32	9/16/20	
Benzo(b)fluoranthene	**15000**	**E**	690	1	09/23/20 02:32	9/16/20	
Benzo(g,h,i)perylene	**5000**		690	1	09/23/20 02:32	9/16/20	
Benzo(k)fluoranthene	**4600**		690	1	09/23/20 02:32	9/16/20	
Benzyl Alcohol	690	U	690	1	09/23/20 02:32	9/16/20	
2,2'-Oxybis(1-chloropropane)	690	U	690	1	09/23/20 02:32	9/16/20	
Bis(2-chloroethoxy)methane	690	U	690	1	09/23/20 02:32	9/16/20	
Bis(2-chloroethyl) Ether	690	U	690	1	09/23/20 02:32	9/16/20	
Bis(2-ethylhexyl) Phthalate	1100	U	1100	1	09/23/20 02:32	9/16/20	
Butyl Benzyl Phthalate	690	U	690	1	09/23/20 02:32	9/16/20	
Carbazole	**1800**		690	1	09/23/20 02:32	9/16/20	
Chrysene	**11000**	**E**	690	1	09/23/20 02:32	9/16/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1350-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-003	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	690	U	690	1	09/23/20 02:32	9/16/20	
Di-n-octyl Phthalate	690	U	690	1	09/23/20 02:32	9/16/20	
Dibenz(a,h)anthracene	**1800**		690	1	09/23/20 02:32	9/16/20	
Dibenzofuran	**1700**		690	1	09/23/20 02:32	9/16/20	
Diethyl Phthalate	690	U	690	1	09/23/20 02:32	9/16/20	
Dimethyl Phthalate	690	U	690	1	09/23/20 02:32	9/16/20	
Fluoranthene	**11000**	**E**	690	1	09/23/20 02:32	9/16/20	
Fluorene	**1800**		690	1	09/23/20 02:32	9/16/20	
Hexachlorobenzene	690	U	690	1	09/23/20 02:32	9/16/20	
Hexachlorobutadiene	690	U	690	1	09/23/20 02:32	9/16/20	
Hexachlorocyclopentadiene	690	U	690	1	09/23/20 02:32	9/16/20	
Hexachloroethane	690	U	690	1	09/23/20 02:32	9/16/20	
Indeno(1,2,3-cd)pyrene	**5400**		690	1	09/23/20 02:32	9/16/20	
Isophorone	690	U	690	1	09/23/20 02:32	9/16/20	
N-Nitrosodi-n-propylamine	690	U	690	1	09/23/20 02:32	9/16/20	
N-Nitrosodimethylamine	690	U	690	1	09/23/20 02:32	9/16/20	
N-Nitrosodiphenylamine	690	U	690	1	09/23/20 02:32	9/16/20	
Naphthalene	**4700**		690	1	09/23/20 02:32	9/16/20	
Nitrobenzene	690	U	690	1	09/23/20 02:32	9/16/20	
Pentachlorophenol (PCP)	3600	U	3600	1	09/23/20 02:32	9/16/20	
Phenanthrene	**8100**	**E**	690	1	09/23/20 02:32	9/16/20	
Phenol	**1400**		690	1	09/23/20 02:32	9/16/20	
Pyrene	**9800**	**E**	690	1	09/23/20 02:32	9/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	64	10 - 109	09/23/20 02:32	
2-Fluorobiphenyl	35	10 - 102	09/23/20 02:32	
2-Fluorophenol	26	10 - 88	09/23/20 02:32	
Nitrobenzene-d5	27	10 - 95	09/23/20 02:32	
Phenol-d6	32	10 - 145	09/23/20 02:32	
p-Terphenyl-d14	40	10 - 106	09/23/20 02:32	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1329-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-004	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	480	U	480	1	09/23/20 03:01	9/16/20	
1,2-Dichlorobenzene	480	U	480	1	09/23/20 03:01	9/16/20	
1,3-Dichlorobenzene	480	U	480	1	09/23/20 03:01	9/16/20	
1,4-Dichlorobenzene	480	U	480	1	09/23/20 03:01	9/16/20	
2,4,5-Trichlorophenol	480	U	480	1	09/23/20 03:01	9/16/20	
2,4,6-Trichlorophenol	480	U	480	1	09/23/20 03:01	9/16/20	
2,4-Dichlorophenol	480	U	480	1	09/23/20 03:01	9/16/20	
2,4-Dimethylphenol	480	U	480	1	09/23/20 03:01	9/16/20	
2,4-Dinitrophenol	2500	U	2500	1	09/23/20 03:01	9/16/20	
2,4-Dinitrotoluene	480	U	480	1	09/23/20 03:01	9/16/20	
2,6-Dinitrotoluene	480	U	480	1	09/23/20 03:01	9/16/20	
2-Chloronaphthalene	480	U	480	1	09/23/20 03:01	9/16/20	
2-Chlorophenol	480	U	480	1	09/23/20 03:01	9/16/20	
2-Methylnaphthalene	**910**		480	1	09/23/20 03:01	9/16/20	
2-Methylphenol	480	U	480	1	09/23/20 03:01	9/16/20	
2-Nitroaniline	480	U	480	1	09/23/20 03:01	9/16/20	
2-Nitrophenol	480	U	480	1	09/23/20 03:01	9/16/20	
3,3'-Dichlorobenzidine	480	U	480	1	09/23/20 03:01	9/16/20	
3- and 4-Methylphenol Coelution	480	U	480	1	09/23/20 03:01	9/16/20	
3-Nitroaniline	480	U	480	1	09/23/20 03:01	9/16/20	
4,6-Dinitro-2-methylphenol	2500	U	2500	1	09/23/20 03:01	9/16/20	
4-Bromophenyl Phenyl Ether	480	U	480	1	09/23/20 03:01	9/16/20	
4-Chloro-3-methylphenol	480	U	480	1	09/23/20 03:01	9/16/20	
4-Chloroaniline	480	U	480	1	09/23/20 03:01	9/16/20	
4-Chlorophenyl Phenyl Ether	480	U	480	1	09/23/20 03:01	9/16/20	
4-Nitroaniline	480	U	480	1	09/23/20 03:01	9/16/20	
4-Nitrophenol	2500	U	2500	1	09/23/20 03:01	9/16/20	
Acenaphthene	480	U	480	1	09/23/20 03:01	9/16/20	
Acenaphthylene	**2600**		480	1	09/23/20 03:01	9/16/20	
Anthracene	**2800**		480	1	09/23/20 03:01	9/16/20	
Benz(a)anthracene	**6100**	**E**	480	1	09/23/20 03:01	9/16/20	
Benzo(a)pyrene	**5800**	**E**	480	1	09/23/20 03:01	9/16/20	
Benzo(b)fluoranthene	**9800**	**E**	480	1	09/23/20 03:01	9/16/20	
Benzo(g,h,i)perylene	**4600**		480	1	09/23/20 03:01	9/16/20	
Benzo(k)fluoranthene	**3100**		480	1	09/23/20 03:01	9/16/20	
Benzyl Alcohol	480	U	480	1	09/23/20 03:01	9/16/20	
2,2'-Oxybis(1-chloropropane)	480	U	480	1	09/23/20 03:01	9/16/20	
Bis(2-chloroethoxy)methane	480	U	480	1	09/23/20 03:01	9/16/20	
Bis(2-chloroethyl) Ether	480	U	480	1	09/23/20 03:01	9/16/20	
Bis(2-ethylhexyl) Phthalate	730	U	730	1	09/23/20 03:01	9/16/20	
Butyl Benzyl Phthalate	480	U	480	1	09/23/20 03:01	9/16/20	
Carbazole	**890**		480	1	09/23/20 03:01	9/16/20	
Chrysene	**6300**	**E**	480	1	09/23/20 03:01	9/16/20	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1329-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-004	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	480	U	480	1	09/23/20 03:01	9/16/20	
Di-n-octyl Phthalate	480	U	480	1	09/23/20 03:01	9/16/20	
Dibenz(a,h)anthracene	**1300**		480	1	09/23/20 03:01	9/16/20	
Dibenzofuran	**1100**		480	1	09/23/20 03:01	9/16/20	
Diethyl Phthalate	480	U	480	1	09/23/20 03:01	9/16/20	
Dimethyl Phthalate	480	U	480	1	09/23/20 03:01	9/16/20	
Fluoranthene	**7100**	**E**	480	1	09/23/20 03:01	9/16/20	
Fluorene	**1800**		480	1	09/23/20 03:01	9/16/20	
Hexachlorobenzene	480	U	480	1	09/23/20 03:01	9/16/20	
Hexachlorobutadiene	480	U	480	1	09/23/20 03:01	9/16/20	
Hexachlorocyclopentadiene	480	U	480	1	09/23/20 03:01	9/16/20	
Hexachloroethane	480	U	480	1	09/23/20 03:01	9/16/20	
Indeno(1,2,3-cd)pyrene	**4500**		480	1	09/23/20 03:01	9/16/20	
Isophorone	480	U	480	1	09/23/20 03:01	9/16/20	
N-Nitrosodi-n-propylamine	480	U	480	1	09/23/20 03:01	9/16/20	
N-Nitrosodimethylamine	480	U	480	1	09/23/20 03:01	9/16/20	
N-Nitrosodiphenylamine	480	U	480	1	09/23/20 03:01	9/16/20	
Naphthalene	**3600**		480	1	09/23/20 03:01	9/16/20	
Nitrobenzene	480	U	480	1	09/23/20 03:01	9/16/20	
Pentachlorophenol (PCP)	2500	U	2500	1	09/23/20 03:01	9/16/20	
Phenanthrene	**6200**	**E**	480	1	09/23/20 03:01	9/16/20	
Phenol	480	U	480	1	09/23/20 03:01	9/16/20	
Pyrene	**6200**	**E**	480	1	09/23/20 03:01	9/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	71	10 - 109	09/23/20 03:01	
2-Fluorobiphenyl	34	10 - 102	09/23/20 03:01	
2-Fluorophenol	31	10 - 88	09/23/20 03:01	
Nitrobenzene-d5	31	10 - 95	09/23/20 03:01	
Phenol-d6	35	10 - 145	09/23/20 03:01	
p-Terphenyl-d14	45	10 - 106	09/23/20 03:01	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1329-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-004	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	1500 U	1500	3	09/25/20 14:00	9/16/20	
1,2-Dichlorobenzene	1500 U	1500	3	09/25/20 14:00	9/16/20	
1,3-Dichlorobenzene	1500 U	1500	3	09/25/20 14:00	9/16/20	
1,4-Dichlorobenzene	1500 U	1500	3	09/25/20 14:00	9/16/20	
2,4,5-Trichlorophenol	1500 U	1500	3	09/25/20 14:00	9/16/20	
2,4,6-Trichlorophenol	1500 U	1500	3	09/25/20 14:00	9/16/20	
2,4-Dichlorophenol	1500 U	1500	3	09/25/20 14:00	9/16/20	
2,4-Dimethylphenol	1500 U	1500	3	09/25/20 14:00	9/16/20	
2,4-Dinitrophenol	7500 U	7500	3	09/25/20 14:00	9/16/20	
2,4-Dinitrotoluene	1500 U	1500	3	09/25/20 14:00	9/16/20	
2,6-Dinitrotoluene	1500 U	1500	3	09/25/20 14:00	9/16/20	
2-Chloronaphthalene	1500 U	1500	3	09/25/20 14:00	9/16/20	
2-Chlorophenol	1500 U	1500	3	09/25/20 14:00	9/16/20	
2-Methylnaphthalene	1500 U	1500	3	09/25/20 14:00	9/16/20	
2-Methylphenol	1500 U	1500	3	09/25/20 14:00	9/16/20	
2-Nitroaniline	1500 U	1500	3	09/25/20 14:00	9/16/20	
2-Nitrophenol	1500 U	1500	3	09/25/20 14:00	9/16/20	
3,3'-Dichlorobenzidine	1500 U	1500	3	09/25/20 14:00	9/16/20	
3- and 4-Methylphenol Coelution	1500 U	1500	3	09/25/20 14:00	9/16/20	
3-Nitroaniline	1500 U	1500	3	09/25/20 14:00	9/16/20	
4,6-Dinitro-2-methylphenol	7500 U	7500	3	09/25/20 14:00	9/16/20	
4-Bromophenyl Phenyl Ether	1500 U	1500	3	09/25/20 14:00	9/16/20	
4-Chloro-3-methylphenol	1500 U	1500	3	09/25/20 14:00	9/16/20	
4-Chloroaniline	1500 U	1500	3	09/25/20 14:00	9/16/20	
4-Chlorophenyl Phenyl Ether	1500 U	1500	3	09/25/20 14:00	9/16/20	
4-Nitroaniline	1500 U	1500	3	09/25/20 14:00	9/16/20	
4-Nitrophenol	7500 U	7500	3	09/25/20 14:00	9/16/20	
Acenaphthene	1500 U	1500	3	09/25/20 14:00	9/16/20	
Acenaphthylene	**2800 D**	1500	3	09/25/20 14:00	9/16/20	
Anthracene	**3100 D**	1500	3	09/25/20 14:00	9/16/20	
Benz(a)anthracene	**6800 D**	1500	3	09/25/20 14:00	9/16/20	
Benzo(a)pyrene	**6300 D**	1500	3	09/25/20 14:00	9/16/20	
Benzo(b)fluoranthene	**9600 D**	1500	3	09/25/20 14:00	9/16/20	
Benzo(g,h,i)perylene	**4000 D**	1500	3	09/25/20 14:00	9/16/20	
Benzo(k)fluoranthene	**3200 D**	1500	3	09/25/20 14:00	9/16/20	
Benzyl Alcohol	1500 U	1500	3	09/25/20 14:00	9/16/20	
2,2'-Oxybis(1-chloropropane)	1500 U	1500	3	09/25/20 14:00	9/16/20	
Bis(2-chloroethoxy)methane	1500 U	1500	3	09/25/20 14:00	9/16/20	
Bis(2-chloroethyl) Ether	1500 U	1500	3	09/25/20 14:00	9/16/20	
Bis(2-ethylhexyl) Phthalate	2200 U	2200	3	09/25/20 14:00	9/16/20	
Butyl Benzyl Phthalate	1500 U	1500	3	09/25/20 14:00	9/16/20	
Carbazole	1500 U	1500	3	09/25/20 14:00	9/16/20	
Chrysene	**7300 D**	1500	3	09/25/20 14:00	9/16/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1329-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-004	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	1500 U	1500	3	09/25/20 14:00	9/16/20	
Di-n-octyl Phthalate	1500 U	1500	3	09/25/20 14:00	9/16/20	
Dibenz(a,h)anthracene	1500 U	1500	3	09/25/20 14:00	9/16/20	
Dibenzofuran	1500 U	1500	3	09/25/20 14:00	9/16/20	
Diethyl Phthalate	1500 U	1500	3	09/25/20 14:00	9/16/20	
Dimethyl Phthalate	1500 U	1500	3	09/25/20 14:00	9/16/20	
Fluoranthene	**11000 D**	1500	3	09/25/20 14:00	9/16/20	
Fluorene	**1900 D**	1500	3	09/25/20 14:00	9/16/20	
Hexachlorobenzene	1500 U	1500	3	09/25/20 14:00	9/16/20	
Hexachlorobutadiene	1500 U	1500	3	09/25/20 14:00	9/16/20	
Hexachlorocyclopentadiene	1500 U	1500	3	09/25/20 14:00	9/16/20	
Hexachloroethane	1500 U	1500	3	09/25/20 14:00	9/16/20	
Indeno(1,2,3-cd)pyrene	**4300 D**	1500	3	09/25/20 14:00	9/16/20	
Isophorone	1500 U	1500	3	09/25/20 14:00	9/16/20	
N-Nitrosodi-n-propylamine	1500 U	1500	3	09/25/20 14:00	9/16/20	
N-Nitrosodimethylamine	1500 U	1500	3	09/25/20 14:00	9/16/20	
N-Nitrosodiphenylamine	1500 U	1500	3	09/25/20 14:00	9/16/20	
Naphthalene	**4200 D**	1500	3	09/25/20 14:00	9/16/20	
Nitrobenzene	1500 U	1500	3	09/25/20 14:00	9/16/20	
Pentachlorophenol (PCP)	7500 U	7500	3	09/25/20 14:00	9/16/20	
Phenanthrene	**9100 D**	1500	3	09/25/20 14:00	9/16/20	
Phenol	1500 U	1500	3	09/25/20 14:00	9/16/20	
Pyrene	**8400 D**	1500	3	09/25/20 14:00	9/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	88	10 - 109	09/25/20 14:00	
2-Fluorobiphenyl	37	10 - 102	09/25/20 14:00	
2-Fluorophenol	31	10 - 88	09/25/20 14:00	
Nitrobenzene-d5	39	10 - 95	09/25/20 14:00	
Phenol-d6	36	10 - 145	09/25/20 14:00	
p-Terphenyl-d14	51	10 - 106	09/25/20 14:00	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1266-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-005	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	530 U	530	1	09/23/20 03:29	9/16/20	
1,2-Dichlorobenzene	530 U	530	1	09/23/20 03:29	9/16/20	
1,3-Dichlorobenzene	530 U	530	1	09/23/20 03:29	9/16/20	
1,4-Dichlorobenzene	530 U	530	1	09/23/20 03:29	9/16/20	
2,4,5-Trichlorophenol	530 U	530	1	09/23/20 03:29	9/16/20	
2,4,6-Trichlorophenol	530 U	530	1	09/23/20 03:29	9/16/20	
2,4-Dichlorophenol	530 U	530	1	09/23/20 03:29	9/16/20	
2,4-Dimethylphenol	530 U	530	1	09/23/20 03:29	9/16/20	
2,4-Dinitrophenol	2700 U	2700	1	09/23/20 03:29	9/16/20	
2,4-Dinitrotoluene	530 U	530	1	09/23/20 03:29	9/16/20	
2,6-Dinitrotoluene	530 U	530	1	09/23/20 03:29	9/16/20	
2-Chloronaphthalene	530 U	530	1	09/23/20 03:29	9/16/20	
2-Chlorophenol	530 U	530	1	09/23/20 03:29	9/16/20	
2-Methylnaphthalene	530 U	530	1	09/23/20 03:29	9/16/20	
2-Methylphenol	530 U	530	1	09/23/20 03:29	9/16/20	
2-Nitroaniline	530 U	530	1	09/23/20 03:29	9/16/20	
2-Nitrophenol	530 U	530	1	09/23/20 03:29	9/16/20	
3,3'-Dichlorobenzidine	530 U	530	1	09/23/20 03:29	9/16/20	
3- and 4-Methylphenol Coelution	530 U	530	1	09/23/20 03:29	9/16/20	
3-Nitroaniline	530 U	530	1	09/23/20 03:29	9/16/20	
4,6-Dinitro-2-methylphenol	2700 U	2700	1	09/23/20 03:29	9/16/20	
4-Bromophenyl Phenyl Ether	530 U	530	1	09/23/20 03:29	9/16/20	
4-Chloro-3-methylphenol	530 U	530	1	09/23/20 03:29	9/16/20	
4-Chloroaniline	530 U	530	1	09/23/20 03:29	9/16/20	
4-Chlorophenyl Phenyl Ether	530 U	530	1	09/23/20 03:29	9/16/20	
4-Nitroaniline	530 U	530	1	09/23/20 03:29	9/16/20	
4-Nitrophenol	2700 U	2700	1	09/23/20 03:29	9/16/20	
Acenaphthene	530 U	530	1	09/23/20 03:29	9/16/20	
Acenaphthylene	530 U	530	1	09/23/20 03:29	9/16/20	
Anthracene	**1100**	530	1	09/23/20 03:29	9/16/20	
Benz(a)anthracene	**2800**	530	1	09/23/20 03:29	9/16/20	
Benzo(a)pyrene	**2800**	530	1	09/23/20 03:29	9/16/20	
Benzo(b)fluoranthene	**4400**	530	1	09/23/20 03:29	9/16/20	
Benzo(g,h,i)perylene	**1700**	530	1	09/23/20 03:29	9/16/20	
Benzo(k)fluoranthene	**1500**	530	1	09/23/20 03:29	9/16/20	
Benzyl Alcohol	530 U	530	1	09/23/20 03:29	9/16/20	
2,2'-Oxybis(1-chloropropane)	530 U	530	1	09/23/20 03:29	9/16/20	
Bis(2-chloroethoxy)methane	530 U	530	1	09/23/20 03:29	9/16/20	
Bis(2-chloroethyl) Ether	530 U	530	1	09/23/20 03:29	9/16/20	
Bis(2-ethylhexyl) Phthalate	810 U	810	1	09/23/20 03:29	9/16/20	
Butyl Benzyl Phthalate	530 U	530	1	09/23/20 03:29	9/16/20	
Carbazole	**890**	530	1	09/23/20 03:29	9/16/20	
Chrysene	**3600**	530	1	09/23/20 03:29	9/16/20	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1266-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-005	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	530 U	530	1	09/23/20 03:29	9/16/20	
Di-n-octyl Phthalate	530 U	530	1	09/23/20 03:29	9/16/20	
Dibenz(a,h)anthracene	**550**	530	1	09/23/20 03:29	9/16/20	
Dibenzofuran	530 U	530	1	09/23/20 03:29	9/16/20	
Diethyl Phthalate	530 U	530	1	09/23/20 03:29	9/16/20	
Dimethyl Phthalate	530 U	530	1	09/23/20 03:29	9/16/20	
Fluoranthene	**4600**	530	1	09/23/20 03:29	9/16/20	
Fluorene	530 U	530	1	09/23/20 03:29	9/16/20	
Hexachlorobenzene	530 U	530	1	09/23/20 03:29	9/16/20	
Hexachlorobutadiene	530 U	530	1	09/23/20 03:29	9/16/20	
Hexachlorocyclopentadiene	530 U	530	1	09/23/20 03:29	9/16/20	
Hexachloroethane	530 U	530	1	09/23/20 03:29	9/16/20	
Indeno(1,2,3-cd)pyrene	**1800**	530	1	09/23/20 03:29	9/16/20	
Isophorone	530 U	530	1	09/23/20 03:29	9/16/20	
N-Nitrosodi-n-propylamine	530 U	530	1	09/23/20 03:29	9/16/20	
N-Nitrosodimethylamine	530 U	530	1	09/23/20 03:29	9/16/20	
N-Nitrosodiphenylamine	530 U	530	1	09/23/20 03:29	9/16/20	
Naphthalene	**720**	530	1	09/23/20 03:29	9/16/20	
Nitrobenzene	530 U	530	1	09/23/20 03:29	9/16/20	
Pentachlorophenol (PCP)	2700 U	2700	1	09/23/20 03:29	9/16/20	
Phenanthrene	**2800**	530	1	09/23/20 03:29	9/16/20	
Phenol	530 U	530	1	09/23/20 03:29	9/16/20	
Pyrene	**3700**	530	1	09/23/20 03:29	9/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	68	10 - 109	09/23/20 03:29	
2-Fluorobiphenyl	19	10 - 102	09/23/20 03:29	
2-Fluorophenol	38	10 - 88	09/23/20 03:29	
Nitrobenzene-d5	32	10 - 95	09/23/20 03:29	
Phenol-d6	42	10 - 145	09/23/20 03:29	
p-Terphenyl-d14	31	10 - 106	09/23/20 03:29	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1219-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-006	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	3200	U	3200	1	09/23/20 03:57	9/16/20	
1,2-Dichlorobenzene	3200	U	3200	1	09/23/20 03:57	9/16/20	
1,3-Dichlorobenzene	3200	U	3200	1	09/23/20 03:57	9/16/20	
1,4-Dichlorobenzene	3200	U	3200	1	09/23/20 03:57	9/16/20	
2,4,5-Trichlorophenol	3200	U	3200	1	09/23/20 03:57	9/16/20	
2,4,6-Trichlorophenol	3200	U	3200	1	09/23/20 03:57	9/16/20	
2,4-Dichlorophenol	3200	U	3200	1	09/23/20 03:57	9/16/20	
2,4-Dimethylphenol	3200	U	3200	1	09/23/20 03:57	9/16/20	
2,4-Dinitrophenol	16000	U	16000	1	09/23/20 03:57	9/16/20	
2,4-Dinitrotoluene	3200	U	3200	1	09/23/20 03:57	9/16/20	
2,6-Dinitrotoluene	3200	U	3200	1	09/23/20 03:57	9/16/20	
2-Chloronaphthalene	3200	U	3200	1	09/23/20 03:57	9/16/20	
2-Chlorophenol	3200	U	3200	1	09/23/20 03:57	9/16/20	
2-Methylnaphthalene	3200	U	3200	1	09/23/20 03:57	9/16/20	
2-Methylphenol	3200	U	3200	1	09/23/20 03:57	9/16/20	
2-Nitroaniline	3200	U	3200	1	09/23/20 03:57	9/16/20	
2-Nitrophenol	3200	U	3200	1	09/23/20 03:57	9/16/20	
3,3'-Dichlorobenzidine	3200	U	3200	1	09/23/20 03:57	9/16/20	
3- and 4-Methylphenol Coelution	3200	U	3200	1	09/23/20 03:57	9/16/20	
3-Nitroaniline	3200	U	3200	1	09/23/20 03:57	9/16/20	
4,6-Dinitro-2-methylphenol	16000	U	16000	1	09/23/20 03:57	9/16/20	
4-Bromophenyl Phenyl Ether	3200	U	3200	1	09/23/20 03:57	9/16/20	
4-Chloro-3-methylphenol	3200	U	3200	1	09/23/20 03:57	9/16/20	
4-Chloroaniline	3200	U	3200	1	09/23/20 03:57	9/16/20	
4-Chlorophenyl Phenyl Ether	3200	U	3200	1	09/23/20 03:57	9/16/20	
4-Nitroaniline	3200	U	3200	1	09/23/20 03:57	9/16/20	
4-Nitrophenol	16000	U	16000	1	09/23/20 03:57	9/16/20	
Acenaphthene	3200	U	3200	1	09/23/20 03:57	9/16/20	
Acenaphthylene	3200	U	3200	1	09/23/20 03:57	9/16/20	
Anthracene	3200	U	3200	1	09/23/20 03:57	9/16/20	
Benz(a)anthracene	**8200**		3200	1	09/23/20 03:57	9/16/20	
Benzo(a)pyrene	**8900**		3200	1	09/23/20 03:57	9/16/20	
Benzo(b)fluoranthene	**16000**		3200	1	09/23/20 03:57	9/16/20	
Benzo(g,h,i)perylene	**7300**		3200	1	09/23/20 03:57	9/16/20	
Benzo(k)fluoranthene	**5400**		3200	1	09/23/20 03:57	9/16/20	
Benzyl Alcohol	3200	U	3200	1	09/23/20 03:57	9/16/20	
2,2'-Oxybis(1-chloropropane)	3200	U	3200	1	09/23/20 03:57	9/16/20	
Bis(2-chloroethoxy)methane	3200	U	3200	1	09/23/20 03:57	9/16/20	
Bis(2-chloroethyl) Ether	3200	U	3200	1	09/23/20 03:57	9/16/20	
Bis(2-ethylhexyl) Phthalate	4800	U	4800	1	09/23/20 03:57	9/16/20	
Butyl Benzyl Phthalate	3200	U	3200	1	09/23/20 03:57	9/16/20	
Carbazole	3200	U	3200	1	09/23/20 03:57	9/16/20	
Chrysene	**11000**		3200	1	09/23/20 03:57	9/16/20	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1219-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-006	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	3200 U	3200	1	09/23/20 03:57	9/16/20	
Di-n-octyl Phthalate	3200 U	3200	1	09/23/20 03:57	9/16/20	
Dibenz(a,h)anthracene	3200 U	3200	1	09/23/20 03:57	9/16/20	
Dibenzofuran	3200 U	3200	1	09/23/20 03:57	9/16/20	
Diethyl Phthalate	3200 U	3200	1	09/23/20 03:57	9/16/20	
Dimethyl Phthalate	3200 U	3200	1	09/23/20 03:57	9/16/20	
Fluoranthene	**14000**	3200	1	09/23/20 03:57	9/16/20	
Fluorene	3200 U	3200	1	09/23/20 03:57	9/16/20	
Hexachlorobenzene	3200 U	3200	1	09/23/20 03:57	9/16/20	
Hexachlorobutadiene	3200 U	3200	1	09/23/20 03:57	9/16/20	
Hexachlorocyclopentadiene	3200 U	3200	1	09/23/20 03:57	9/16/20	
Hexachloroethane	3200 U	3200	1	09/23/20 03:57	9/16/20	
Indeno(1,2,3-cd)pyrene	**7200**	3200	1	09/23/20 03:57	9/16/20	
Isophorone	3200 U	3200	1	09/23/20 03:57	9/16/20	
N-Nitrosodi-n-propylamine	3200 U	3200	1	09/23/20 03:57	9/16/20	
N-Nitrosodimethylamine	3200 U	3200	1	09/23/20 03:57	9/16/20	
N-Nitrosodiphenylamine	3200 U	3200	1	09/23/20 03:57	9/16/20	
Naphthalene	**6600**	3200	1	09/23/20 03:57	9/16/20	
Nitrobenzene	3200 U	3200	1	09/23/20 03:57	9/16/20	
Pentachlorophenol (PCP)	16000 U	16000	1	09/23/20 03:57	9/16/20	
Phenanthrene	**9400**	3200	1	09/23/20 03:57	9/16/20	
Phenol	3200 U	3200	1	09/23/20 03:57	9/16/20	
Pyrene	**11000**	3200	1	09/23/20 03:57	9/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	74	10 - 109	09/23/20 03:57	
2-Fluorobiphenyl	33	10 - 102	09/23/20 03:57	
2-Fluorophenol	39	10 - 88	09/23/20 03:57	
Nitrobenzene-d5	38	10 - 95	09/23/20 03:57	
Phenol-d6	42	10 - 145	09/23/20 03:57	
p-Terphenyl-d14	44	10 - 106	09/23/20 03:57	

Semivolatile Organic Compounds by GC

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-MS-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-001	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	320 U	320	1	09/24/20 21:15	9/23/20	*
Aroclor 1221	650 U	650	1	09/24/20 21:15	9/23/20	*
Aroclor 1232	320 U	320	1	09/24/20 21:15	9/23/20	*
Aroclor 1242	320 U	320	1	09/24/20 21:15	9/23/20	*
Aroclor 1248	320 U	320	1	09/24/20 21:15	9/23/20	*
Aroclor 1254	320 U	320	1	09/24/20 21:15	9/23/20	*
Aroclor 1260	320 U	320	1	09/24/20 21:15	9/23/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	53	22 - 128	09/24/20 21:15	
Tetrachloro-m-xylene	47	14 - 119	09/24/20 21:15	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1415-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-002	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	1100 U	1100	1	09/24/20 21:34	9/23/20	*
Aroclor 1221	2200 U	2200	1	09/24/20 21:34	9/23/20	*
Aroclor 1232	1100 U	1100	1	09/24/20 21:34	9/23/20	*
Aroclor 1242	1100 U	1100	1	09/24/20 21:34	9/23/20	*
Aroclor 1248	1100 U	1100	1	09/24/20 21:34	9/23/20	*
Aroclor 1254	1100 U	1100	1	09/24/20 21:34	9/23/20	*
Aroclor 1260	1100 U	1100	1	09/24/20 21:34	9/23/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	66	22 - 128	09/24/20 21:34	
Tetrachloro-m-xylene	58	14 - 119	09/24/20 21:34	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1350-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-003	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	88 U	88	1	09/24/20 21:54	9/23/20	*
Aroclor 1221	180 U	180	1	09/24/20 21:54	9/23/20	*
Aroclor 1232	88 U	88	1	09/24/20 21:54	9/23/20	*
Aroclor 1242	88 U	88	1	09/24/20 21:54	9/23/20	*
Aroclor 1248	88 U	88	1	09/24/20 21:54	9/23/20	*
Aroclor 1254	88 U	88	1	09/24/20 21:54	9/23/20	*
Aroclor 1260	88 U	88	1	09/24/20 21:54	9/23/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	53	22 - 128	09/24/20 21:54	
Tetrachloro-m-xylene	47	14 - 119	09/24/20 21:54	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1329-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-004	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	48 U	48	1	09/24/20 22:13	9/23/20	*
Aroclor 1221	98 U	98	1	09/24/20 22:13	9/23/20	*
Aroclor 1232	48 U	48	1	09/24/20 22:13	9/23/20	*
Aroclor 1242	48 U	48	1	09/24/20 22:13	9/23/20	*
Aroclor 1248	48 U	48	1	09/24/20 22:13	9/23/20	*
Aroclor 1254	48 U	48	1	09/24/20 22:13	9/23/20	*
Aroclor 1260	48 U	48	1	09/24/20 22:13	9/23/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	37	22 - 128	09/24/20 22:13	
Tetrachloro-m-xylene	34	14 - 119	09/24/20 22:13	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1266-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-005	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	54 U	54	1	09/24/20 22:33	9/23/20	*
Aroclor 1221	110 U	110	1	09/24/20 22:33	9/23/20	*
Aroclor 1232	54 U	54	1	09/24/20 22:33	9/23/20	*
Aroclor 1242	54 U	54	1	09/24/20 22:33	9/23/20	*
Aroclor 1248	54 U	54	1	09/24/20 22:33	9/23/20	*
Aroclor 1254	54 U	54	1	09/24/20 22:33	9/23/20	*
Aroclor 1260	54 U	54	1	09/24/20 22:33	9/23/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	44	22 - 128	09/24/20 22:33	
Tetrachloro-m-xylene	41	14 - 119	09/24/20 22:33	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1219-09082020	**Units:**	ug/Kg
Lab Code:	R2008433-006	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	300 U	300	1	09/24/20 22:53	9/23/20	*
Aroclor 1221	610 U	610	1	09/24/20 22:53	9/23/20	*
Aroclor 1232	300 U	300	1	09/24/20 22:53	9/23/20	*
Aroclor 1242	300 U	300	1	09/24/20 22:53	9/23/20	*
Aroclor 1248	300 U	300	1	09/24/20 22:53	9/23/20	*
Aroclor 1254	300 U	300	1	09/24/20 22:53	9/23/20	*
Aroclor 1260	300 U	300	1	09/24/20 22:53	9/23/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	49	22 - 128	09/24/20 22:53	
Tetrachloro-m-xylene	44	14 - 119	09/24/20 22:53	

Metals

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Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-MS-09082020	**Basis:**	Dry
Lab Code:	R2008433-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	**18100**		mg/Kg	96	1	09/18/20 00:52	09/17/20	
Antimony, Total	6010C	29	U	mg/Kg	29	1	09/18/20 00:52	09/17/20	
Arsenic, Total	6010C	**12.7**		mg/Kg	4.8	1	09/18/20 00:52	09/17/20	
Barium, Total	6010C	**78.7**		mg/Kg	9.6	1	09/18/20 00:52	09/17/20	
Beryllium, Total	6010C	**1.8**		mg/Kg	1.4	1	09/18/20 00:52	09/17/20	
Cadmium, Total	6010C	**3.0**		mg/Kg	2.4	1	09/18/20 00:52	09/17/20	
Calcium, Total	6010C	**39600**		mg/Kg	480	1	09/18/20 00:52	09/17/20	
Chromium, Total	6010C	**103**		mg/Kg	4.8	1	09/18/20 00:52	09/17/20	
Cobalt, Total	6010C	24	U	mg/Kg	24	1	09/18/20 00:52	09/17/20	
Copper, Total	6010C	**176**		mg/Kg	9.6	1	09/18/20 00:52	09/17/20	
Iron, Total	6010C	**74300**		mg/Kg	960	10	09/18/20 02:23	09/17/20	
Lead, Total	6010C	**95**		mg/Kg	24	1	09/18/20 00:52	09/17/20	
Magnesium, Total	6010C	**8620**		mg/Kg	480	1	09/18/20 00:52	09/17/20	
Manganese, Total	6010C	**435**		mg/Kg	9.6	1	09/18/20 00:52	09/17/20	
Mercury, Total	7471B	**2.40**		mg/Kg	0.17	1	09/16/20 13:11	09/15/20	
Nickel, Total	6010C	**21**		mg/Kg	19	1	09/18/20 00:52	09/17/20	
Potassium, Total	6010C	960	U	mg/Kg	960	1	09/18/20 00:52	09/17/20	
Selenium, Total	6010C	4.8	U	mg/Kg	4.8	1	09/18/20 00:52	09/17/20	
Silver, Total	6010C	4.8	U	mg/Kg	4.8	1	09/18/20 00:52	09/17/20	
Sodium, Total	6010C	**660**		mg/Kg	480	1	09/18/20 00:52	09/17/20	
Thallium, Total	6010C	4.8	U	mg/Kg	4.8	1	09/18/20 00:52	09/17/20	
Vanadium, Total	6010C	**40**		mg/Kg	24	1	09/18/20 00:52	09/17/20	
Zinc, Total	6010C	**315**		mg/Kg	9.6	1	09/18/20 00:52	09/17/20	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1415-09082020	**Basis:**	Dry
Lab Code:	R2008433-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	**40500**		mg/Kg	200	1	09/18/20 00:55	09/17/20	
Antimony, Total	6010C	60	U	mg/Kg	60	1	09/18/20 00:55	09/17/20	
Arsenic, Total	6010C	**30**		mg/Kg	10	1	09/18/20 00:55	09/17/20	
Barium, Total	6010C	**366**		mg/Kg	20	1	09/18/20 00:55	09/17/20	
Beryllium, Total	6010C	**5.7**		mg/Kg	3.0	1	09/18/20 00:55	09/17/20	
Cadmium, Total	6010C	**6.4**		mg/Kg	5.0	1	09/18/20 00:55	09/17/20	
Calcium, Total	6010C	**842000**		mg/Kg	10000	10	09/18/20 02:33	09/17/20	
Chromium, Total	6010C	**197**		mg/Kg	10	1	09/18/20 00:55	09/17/20	
Cobalt, Total	6010C	50	U	mg/Kg	50	1	09/18/20 00:55	09/17/20	
Copper, Total	6010C	**356**		mg/Kg	20	1	09/18/20 00:55	09/17/20	
Iron, Total	6010C	**237000**		mg/Kg	2000	10	09/18/20 02:33	09/17/20	
Lead, Total	6010C	**142**		mg/Kg	50	1	09/18/20 00:55	09/17/20	
Magnesium, Total	6010C	**73000**		mg/Kg	1000	1	09/18/20 00:55	09/17/20	
Manganese, Total	6010C	**3370**		mg/Kg	20	1	09/18/20 00:55	09/17/20	
Mercury, Total	7471B	**3.41**		mg/Kg	0.35	1	09/16/20 13:13	09/15/20	
Nickel, Total	6010C	**166**		mg/Kg	40	1	09/18/20 00:55	09/17/20	
Potassium, Total	6010C	**3500**		mg/Kg	2000	1	09/18/20 00:55	09/17/20	
Selenium, Total	6010C	10	U	mg/Kg	10	1	09/18/20 00:55	09/17/20	
Silver, Total	6010C	10	U	mg/Kg	10	1	09/18/20 00:55	09/17/20	
Sodium, Total	6010C	**2200**		mg/Kg	1000	1	09/18/20 00:55	09/17/20	
Thallium, Total	6010C	10	U	mg/Kg	10	1	09/18/20 00:55	09/17/20	
Vanadium, Total	6010C	**99**		mg/Kg	50	1	09/18/20 00:55	09/17/20	
Zinc, Total	6010C	**741**		mg/Kg	20	1	09/18/20 00:55	09/17/20	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1350-09082020	**Basis:**	Dry
Lab Code:	R2008433-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	**7910**	mg/Kg	35	1	09/18/20 00:59	09/17/20	
Antimony, Total	6010C	11 U	mg/Kg	11	1	09/18/20 00:59	09/17/20	
Arsenic, Total	6010C	**6.3**	mg/Kg	1.8	1	09/18/20 00:59	09/17/20	
Barium, Total	6010C	**82.4**	mg/Kg	3.5	1	09/18/20 00:59	09/17/20	
Beryllium, Total	6010C	**0.88**	mg/Kg	0.53	1	09/18/20 00:59	09/17/20	
Cadmium, Total	6010C	**1.65**	mg/Kg	0.88	1	09/18/20 00:59	09/17/20	
Calcium, Total	6010C	**38700**	mg/Kg	180	1	09/18/20 00:59	09/17/20	
Chromium, Total	6010C	**49.3**	mg/Kg	1.8	1	09/18/20 00:59	09/17/20	
Cobalt, Total	6010C	8.8 U	mg/Kg	8.8	1	09/18/20 00:59	09/17/20	
Copper, Total	6010C	**103**	mg/Kg	3.5	1	09/18/20 00:59	09/17/20	
Iron, Total	6010C	**38000**	mg/Kg	350	10	09/18/20 02:36	09/17/20	
Lead, Total	6010C	**137**	mg/Kg	8.8	1	09/18/20 00:59	09/17/20	
Magnesium, Total	6010C	**5030**	mg/Kg	180	1	09/18/20 00:59	09/17/20	
Manganese, Total	6010C	**400**	mg/Kg	3.5	1	09/18/20 00:59	09/17/20	
Mercury, Total	7471B	**3.08**	mg/Kg	0.29	5	09/16/20 13:47	09/15/20	
Nickel, Total	6010C	**21.7**	mg/Kg	7.0	1	09/18/20 00:59	09/17/20	
Potassium, Total	6010C	**520**	mg/Kg	350	1	09/18/20 00:59	09/17/20	
Selenium, Total	6010C	1.8 U	mg/Kg	1.8	1	09/18/20 00:59	09/17/20	
Silver, Total	6010C	1.8 U	mg/Kg	1.8	1	09/18/20 00:59	09/17/20	
Sodium, Total	6010C	**530**	mg/Kg	180	1	09/18/20 00:59	09/17/20	
Thallium, Total	6010C	1.8 U	mg/Kg	1.8	1	09/18/20 00:59	09/17/20	
Vanadium, Total	6010C	**16.3**	mg/Kg	8.8	1	09/18/20 00:59	09/17/20	
Zinc, Total	6010C	**311**	mg/Kg	3.5	1	09/18/20 00:59	09/17/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1329-09082020	**Basis:**	Dry
Lab Code:	R2008433-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	**3090**	mg/Kg	27	1	09/18/20 01:02	09/17/20	
Antimony, Total	6010C	8.0 U	mg/Kg	8.0	1	09/18/20 01:02	09/17/20	
Arsenic, Total	6010C	**4.4**	mg/Kg	1.3	1	09/18/20 01:02	09/17/20	
Barium, Total	6010C	**34.7**	mg/Kg	2.7	1	09/18/20 01:02	09/17/20	
Beryllium, Total	6010C	**0.54**	mg/Kg	0.40	1	09/18/20 01:02	09/17/20	
Cadmium, Total	6010C	**0.91**	mg/Kg	0.67	1	09/18/20 01:02	09/17/20	
Calcium, Total	6010C	**9730**	mg/Kg	130	1	09/18/20 01:02	09/17/20	
Chromium, Total	6010C	**19.9**	mg/Kg	1.3	1	09/18/20 01:02	09/17/20	
Cobalt, Total	6010C	6.7 U	mg/Kg	6.7	1	09/18/20 01:02	09/17/20	
Copper, Total	6010C	**22.1**	mg/Kg	2.7	1	09/18/20 01:02	09/17/20	
Iron, Total	6010C	**17700**	mg/Kg	270	10	09/18/20 02:39	09/17/20	
Lead, Total	6010C	**20.3**	mg/Kg	6.7	1	09/18/20 01:02	09/17/20	
Magnesium, Total	6010C	**3510**	mg/Kg	130	1	09/18/20 01:02	09/17/20	
Manganese, Total	6010C	**106**	mg/Kg	2.7	1	09/18/20 01:02	09/17/20	
Mercury, Total	7471B	**0.361**	mg/Kg	0.045	1	09/16/20 13:18	09/15/20	
Nickel, Total	6010C	**12.1**	mg/Kg	5.4	1	09/18/20 01:02	09/17/20	
Potassium, Total	6010C	**320**	mg/Kg	270	1	09/18/20 01:02	09/17/20	
Selenium, Total	6010C	1.3 U	mg/Kg	1.3	1	09/18/20 01:02	09/17/20	
Silver, Total	6010C	1.3 U	mg/Kg	1.3	1	09/18/20 01:02	09/17/20	
Sodium, Total	6010C	**210**	mg/Kg	130	1	09/18/20 01:02	09/17/20	
Thallium, Total	6010C	1.3 U	mg/Kg	1.3	1	09/18/20 01:02	09/17/20	
Vanadium, Total	6010C	**11.8**	mg/Kg	6.7	1	09/18/20 01:02	09/17/20	
Zinc, Total	6010C	**82.2**	mg/Kg	2.7	1	09/18/20 01:02	09/17/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1266-09082020	**Basis:**	Dry
Lab Code:	R2008433-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	**1680**	mg/Kg	29	1	09/18/20 01:05	09/17/20	
Antimony, Total	6010C	8.8 U	mg/Kg	8.8	1	09/18/20 01:05	09/17/20	
Arsenic, Total	6010C	**3.7**	mg/Kg	1.5	1	09/18/20 01:05	09/17/20	
Barium, Total	6010C	**35.9**	mg/Kg	2.9	1	09/18/20 01:05	09/17/20	
Beryllium, Total	6010C	**0.60**	mg/Kg	0.44	1	09/18/20 01:05	09/17/20	
Cadmium, Total	6010C	0.73 U	mg/Kg	0.73	1	09/18/20 01:05	09/17/20	
Calcium, Total	6010C	**19700**	mg/Kg	150	1	09/18/20 01:05	09/17/20	
Chromium, Total	6010C	**9.9**	mg/Kg	1.5	1	09/18/20 01:05	09/17/20	
Cobalt, Total	6010C	7.3 U	mg/Kg	7.3	1	09/18/20 01:05	09/17/20	
Copper, Total	6010C	**36.2**	mg/Kg	2.9	1	09/18/20 01:05	09/17/20	
Iron, Total	6010C	**11300**	mg/Kg	290	10	09/18/20 17:49	09/17/20	
Lead, Total	6010C	**16.7**	mg/Kg	7.3	1	09/18/20 01:05	09/17/20	
Magnesium, Total	6010C	**870**	mg/Kg	150	1	09/18/20 01:05	09/17/20	
Manganese, Total	6010C	**99.2**	mg/Kg	2.9	1	09/18/20 01:05	09/17/20	
Mercury, Total	7471B	**0.142**	mg/Kg	0.052	1	09/16/20 13:21	09/15/20	
Nickel, Total	6010C	**10.5**	mg/Kg	5.9	1	09/18/20 01:05	09/17/20	
Potassium, Total	6010C	290 U	mg/Kg	290	1	09/18/20 01:05	09/17/20	
Selenium, Total	6010C	1.5 U	mg/Kg	1.5	1	09/18/20 01:05	09/17/20	
Silver, Total	6010C	1.5 U	mg/Kg	1.5	1	09/18/20 01:05	09/17/20	
Sodium, Total	6010C	**200**	mg/Kg	150	1	09/18/20 01:05	09/17/20	
Thallium, Total	6010C	1.5 U	mg/Kg	1.5	1	09/18/20 01:05	09/17/20	
Vanadium, Total	6010C	**8.1**	mg/Kg	7.3	1	09/18/20 01:05	09/17/20	
Zinc, Total	6010C	**82.0**	mg/Kg	2.9	1	09/18/20 01:05	09/17/20	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1219-09082020	**Basis:**	Dry
Lab Code:	R2008433-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	**4920**		mg/Kg	68	1	09/18/20 01:15	09/17/20	
Antimony, Total	6010C	20	U	mg/Kg	20	1	09/18/20 01:15	09/17/20	
Arsenic, Total	6010C	**37.0**		mg/Kg	3.4	1	09/18/20 01:15	09/17/20	
Barium, Total	6010C	**64.0**		mg/Kg	6.8	1	09/18/20 01:15	09/17/20	
Beryllium, Total	6010C	1.0	U	mg/Kg	1.0	1	09/18/20 01:15	09/17/20	
Cadmium, Total	6010C	1.7	U	mg/Kg	1.7	1	09/18/20 01:15	09/17/20	
Calcium, Total	6010C	**3660**		mg/Kg	340	1	09/18/20 01:15	09/17/20	
Chromium, Total	6010C	**70.6**		mg/Kg	3.4	1	09/18/20 01:15	09/17/20	
Cobalt, Total	6010C	17	U	mg/Kg	17	1	09/18/20 01:15	09/17/20	
Copper, Total	6010C	**114**		mg/Kg	6.8	1	09/18/20 01:15	09/17/20	
Iron, Total	6010C	**85300**		mg/Kg	680	10	09/18/20 02:46	09/17/20	
Lead, Total	6010C	**44**		mg/Kg	17	1	09/18/20 01:15	09/17/20	
Magnesium, Total	6010C	**770**		mg/Kg	340	1	09/18/20 01:15	09/17/20	
Manganese, Total	6010C	**167**		mg/Kg	6.8	1	09/18/20 01:15	09/17/20	
Mercury, Total	7471B	**0.73**		mg/Kg	0.11	1	09/16/20 13:23	09/15/20	
Nickel, Total	6010C	14	U	mg/Kg	14	1	09/18/20 01:15	09/17/20	
Potassium, Total	6010C	680	U	mg/Kg	680	1	09/18/20 01:15	09/17/20	
Selenium, Total	6010C	34	U	mg/Kg	34	10	09/18/20 02:46	09/17/20	
Silver, Total	6010C	3.4	U	mg/Kg	3.4	1	09/18/20 01:15	09/17/20	
Sodium, Total	6010C	**390**		mg/Kg	340	1	09/18/20 01:15	09/17/20	
Thallium, Total	6010C	34	U	mg/Kg	34	10	09/18/20 02:46	09/17/20	
Vanadium, Total	6010C	**40**		mg/Kg	17	1	09/18/20 01:15	09/17/20	
Zinc, Total	6010C	**70.0**		mg/Kg	6.8	1	09/18/20 01:15	09/17/20	

General Chemistry

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-MS-09082020	**Basis:**	Dry
Lab Code:	R2008433-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	350.1M	**79**	mg/Kg	26	1	09/29/20 22:23	09/29/20	
Cyanide, Total	9012B	**96.8**	mg/Kg	1.4	1	09/18/20 17:26	09/17/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-MS-09082020	**Basis:**	As Received
Lab Code:	R2008433-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**6.51**	pH Units	-	1	09/15/20 10:20	NA	
Total Solids	ALS SOP	**19.2**	Percent	-	1	09/18/20 06:15	NA	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1415-09082020	**Basis:**	Dry
Lab Code:	R2008433-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	350.1M	**152**	mg/Kg	54	1	09/29/20 22:25	09/29/20	
Cyanide, Total	9012B	**254**	mg/Kg	2.8	1	09/18/20 17:27	09/17/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1415-09082020	**Basis:**	As Received
Lab Code:	R2008433-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**6.85**	pH Units	-	1	09/15/20 10:20	NA	
Total Solids	ALS SOP	**9.20**	Percent	-	1	09/18/20 06:15	NA	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1350-09082020	**Basis:**	Dry
Lab Code:	R2008433-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	350.1M	**18.8**	mg/Kg	9.1	1	09/29/20 22:26	09/29/20	
Cyanide, Total	9012B	**8.00**	mg/Kg	0.38	1	09/18/20 17:27	09/17/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1350-09082020	**Basis:**	As Received
Lab Code:	R2008433-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**6.99**	pH Units	-	1	09/15/20 10:20	NA	
Total Solids	ALS SOP	**54.7**	Percent	-	1	09/18/20 06:15	NA	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1329-09082020	**Basis:**	Dry
Lab Code:	R2008433-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	350.1M	**39.7**	mg/Kg	7.2	1	09/29/20 22:27	09/29/20	
Cyanide, Total	9012B	**10.3**	mg/Kg	0.43	1	09/18/20 17:28	09/17/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1329-09082020	**Basis:**	As Received
Lab Code:	R2008433-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**6.91**	pH Units	-	1	09/15/20 10:20	NA	
Total Solids	ALS SOP	**69.2**	Percent	-	1	09/18/20 06:15	NA	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1266-09082020	**Basis:**	Dry
Lab Code:	R2008433-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	350.1M	**12.9**	mg/Kg	7.9	1	09/29/20 22:28	09/29/20	
Cyanide, Total	9012B	**7.12**	mg/Kg	0.44	1	09/18/20 17:29	09/17/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1266-09082020	**Basis:**	As Received
Lab Code:	R2008433-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**7.29**	pH Units	-	1	09/15/20 10:20	NA	
Total Solids	ALS SOP	**63.3**	Percent	-	1	09/18/20 06:15	NA	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1219-09082020	**Basis:**	Dry
Lab Code:	R2008433-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	350.1M	**77**	mg/Kg	17	1	09/29/20 22:29	09/29/20	
Cyanide, Total	9012B	**90.9**	mg/Kg	4.9	5	09/18/20 17:52	09/17/20	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20 08:50
Sample Name:	SD-BC-1219-09082020	**Basis:**	As Received
Lab Code:	R2008433-006		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	**6.30**	pH Units	-	1	09/15/20 10:20	NA	
Total Solids	ALS SOP	**29.0**	Percent	-	1	09/18/20 06:15	NA	

QC Summary Forms

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Volatile Organic Compounds by GC/MS

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Client: Inventum Engineering **Service Request:** R2008433
Project: Riverview
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene 31-154	Dibromofluoromethane 63-138	Toluene-d8 66-138
SD-MS-09082020	R2008433-001	56	105	96
SD-BC-1415-09082020	R2008433-002	73	105	96
SD-BC-1350-09082020	R2008433-003	80	103	101
SD-BC-1329-09082020	R2008433-004	54	104	98
SD-BC-1266-09082020	R2008433-005	56	106	97
SD-BC-1219-09082020	R2008433-006	48	104	98
Method Blank	RQ2010822-04	97	99	102
Lab Control Sample	RQ2010822-03	101	103	103

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2010822-04	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.0 U	5.0	1	09/16/20 14:20	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	1	09/16/20 14:20	
1,1,2-Trichloroethane	5.0 U	5.0	1	09/16/20 14:20	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0 U	5.0	1	09/16/20 14:20	
1,1-Dichloroethane (1,1-DCA)	5.0 U	5.0	1	09/16/20 14:20	
1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	1	09/16/20 14:20	
1,2,3-Trichlorobenzene	5.0 U	5.0	1	09/16/20 14:20	
1,2,4-Trichlorobenzene	5.0 U	5.0	1	09/16/20 14:20	
1,2-Dibromo-3-chloropropane (DBCP)	5.0 U	5.0	1	09/16/20 14:20	
1,2-Dibromoethane	5.0 U	5.0	1	09/16/20 14:20	
1,2-Dichlorobenzene	5.0 U	5.0	1	09/16/20 14:20	
1,2-Dichloroethane	5.0 U	5.0	1	09/16/20 14:20	
1,2-Dichloropropane	5.0 U	5.0	1	09/16/20 14:20	
1,3-Dichlorobenzene	5.0 U	5.0	1	09/16/20 14:20	
1,4-Dichlorobenzene	5.0 U	5.0	1	09/16/20 14:20	
1,4-Dioxane	100 U	100	1	09/16/20 14:20	
2-Butanone (MEK)	5.0 U	5.0	1	09/16/20 14:20	
2-Hexanone	5.0 U	5.0	1	09/16/20 14:20	
4-Methyl-2-pentanone	5.0 U	5.0	1	09/16/20 14:20	
Acetone	5.0 U	5.0	1	09/16/20 14:20	
Benzene	5.0 U	5.0	1	09/16/20 14:20	
Bromochloromethane	5.0 U	5.0	1	09/16/20 14:20	
Bromodichloromethane	5.0 U	5.0	1	09/16/20 14:20	
Bromoform	5.0 U	5.0	1	09/16/20 14:20	
Bromomethane	5.0 U	5.0	1	09/16/20 14:20	
Carbon Disulfide	5.0 U	5.0	1	09/16/20 14:20	
Carbon Tetrachloride	5.0 U	5.0	1	09/16/20 14:20	
Chlorobenzene	5.0 U	5.0	1	09/16/20 14:20	
Chloroethane	5.0 U	5.0	1	09/16/20 14:20	
Chloroform	5.0 U	5.0	1	09/16/20 14:20	
Chloromethane	5.0 U	5.0	1	09/16/20 14:20	
Cyclohexane	5.0 U	5.0	1	09/16/20 14:20	
Dibromochloromethane	5.0 U	5.0	1	09/16/20 14:20	
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0	1	09/16/20 14:20	
Dichloromethane	5.0 U	5.0	1	09/16/20 14:20	
Ethylbenzene	5.0 U	5.0	1	09/16/20 14:20	
Isopropylbenzene (Cumene)	5.0 U	5.0	1	09/16/20 14:20	
Methyl Acetate	5.0 U	5.0	1	09/16/20 14:20	
Methyl tert-Butyl Ether	5.0 U	5.0	1	09/16/20 14:20	
Methylcyclohexane	5.0 U	5.0	1	09/16/20 14:20	
Styrene	5.0 U	5.0	1	09/16/20 14:20	
Tetrachloroethene (PCE)	5.0 U	5.0	1	09/16/20 14:20	
Tetrahydrofuran (THF)	5.0 U	5.0	1	09/16/20 14:20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2010822-04	**Basis:**	Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
Toluene	5.0	U	5.0	1	09/16/20 14:20	
Trichloroethene (TCE)	5.0	U	5.0	1	09/16/20 14:20	
Trichlorofluoromethane (CFC 11)	5.0	U	5.0	1	09/16/20 14:20	
Vinyl Chloride	5.0	U	5.0	1	09/16/20 14:20	
cis-1,2-Dichloroethene	5.0	U	5.0	1	09/16/20 14:20	
cis-1,3-Dichloropropene	5.0	U	5.0	1	09/16/20 14:20	
m,p-Xylenes	10	U	10	1	09/16/20 14:20	
o-Xylene	5.0	U	5.0	1	09/16/20 14:20	
trans-1,2-Dichloroethene	5.0	U	5.0	1	09/16/20 14:20	
trans-1,3-Dichloropropene	5.0	U	5.0	1	09/16/20 14:20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	31 - 154	09/16/20 14:20	
Dibromofluoromethane	99	63 - 138	09/16/20 14:20	
Toluene-d8	102	66 - 138	09/16/20 14:20	

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Analyzed: 09/16/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unp

Units:ug/Kg
Basis: Dry

Lab Control Sample
RQ2010822-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	16.9	20.0	85	68-123
1,1,2,2-Tetrachloroethane	8260C	22.4	20.0	112	78-121
1,1,2-Trichloroethane	8260C	19.5	20.0	97	84-117
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	17.0	20.0	85	54-121
1,1-Dichloroethane (1,1-DCA)	8260C	19.0	20.0	95	76-123
1,1-Dichloroethene (1,1-DCE)	8260C	20.1	20.0	101	65-115
1,2,3-Trichlorobenzene	8260C	19.7	20.0	99	60-128
1,2,4-Trichlorobenzene	8260C	20.3	20.0	102	62-130
1,2-Dibromo-3-chloropropane (DBCP)	8260C	17.2	20.0	86	54-135
1,2-Dibromoethane	8260C	18.5	20.0	92	77-117
1,2-Dichlorobenzene	8260C	18.9	20.0	94	75-116
1,2-Dichloroethane	8260C	19.2	20.0	96	74-116
1,2-Dichloropropane	8260C	19.3	20.0	97	79-112
1,3-Dichlorobenzene	8260C	19.1	20.0	96	72-118
1,4-Dichlorobenzene	8260C	19.0	20.0	95	72-117
1,4-Dioxane	8260C	299	400	75	59-147
2-Butanone (MEK)	8260C	19.6	20.0	98	67-129
2-Hexanone	8260C	20.2	20.0	101	68-118
4-Methyl-2-pentanone	8260C	17.5	20.0	88	64-123
Acetone	8260C	24.3	20.0	121	32-154
Benzene	8260C	18.4	20.0	92	77-114
Bromochloromethane	8260C	18.3	20.0	91	78-117
Bromodichloromethane	8260C	17.4	20.0	87	72-118
Bromoform	8260C	16.6	20.0	83	55-134
Bromomethane	8260C	16.4	20.0	82	10-150
Carbon Disulfide	8260C	18.0	20.0	90	44-139
Carbon Tetrachloride	8260C	15.9	20.0	80	51-123
Chlorobenzene	8260C	18.8	20.0	94	79-115
Chloroethane	8260C	19.7	20.0	99	10-140
Chloroform	8260C	19.0	20.0	95	76-115
Chloromethane	8260C	19.6	20.0	98	10-131
Cyclohexane	8260C	22.1	20.0	111	67-122
Dibromochloromethane	8260C	18.0	20.0	90	68-121

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Analyzed: 09/16/20

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unp

Units:ug/Kg
Basis: Dry

Lab Control Sample
RQ2010822-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	8260C	19.9	20.0	100	51-144
Dichloromethane	8260C	17.6	20.0	88	72-118
Ethylbenzene	8260C	18.6	20.0	93	64-118
Isopropylbenzene (Cumene)	8260C	18.6	20.0	93	60-123
Methyl Acetate	8260C	15.1	20.0	75	31-122
Methyl tert-Butyl Ether	8260C	18.6	20.0	93	76-118
Methylcyclohexane	8260C	21.7	20.0	108	70-124
Styrene	8260C	18.6	20.0	93	74-117
Tetrachloroethene (PCE)	8260C	17.6	20.0	88	58-124
Tetrahydrofuran (THF)	8260C	16.6	20.0	83	63-126
Toluene	8260C	18.4	20.0	92	72-116
Trichloroethene (TCE)	8260C	16.1	20.0	80	69-118
Trichlorofluoromethane (CFC 11)	8260C	17.7	20.0	89	52-127
Vinyl Chloride	8260C	18.8	20.0	94	59-153
cis-1,2-Dichloroethene	8260C	18.9	20.0	95	79-113
cis-1,3-Dichloropropene	8260C	17.7	20.0	88	66-117
m,p-Xylenes	8260C	37.3	40.0	93	68-118
o-Xylene	8260C	19.0	20.0	95	71-116
trans-1,2-Dichloroethene	8260C	19.7	20.0	98	73-114
trans-1,3-Dichloropropene	8260C	17.5	20.0	88	57-135

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Inventum Engineering **Service Request:** R2008433
Project: Riverview
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	2,4,6-Tribromophenol 10-109	2-Fluorobiphenyl 10-102	2-Fluorophenol 10-88
SD-MS-09082020	R2008433-001	13	8*	6*
SD-MS-09082020 RE	R2008433-001	31	10	5*
SD-BC-1415-09082020	R2008433-002	58	21	14
SD-BC-1350-09082020	R2008433-003	64	35	26
SD-BC-1329-09082020	R2008433-004	71	34	31
SD-BC-1329-09082020 DL	R2008433-004	88	37	31
SD-BC-1266-09082020	R2008433-005	68	19	38
SD-BC-1219-09082020	R2008433-006	74	33	39
Method Blank	RQ2010797-01	39	28	29
Method Blank	RQ2011169-01	40	27	14
Lab Control Sample	RQ2010797-02	68	47	38
Duplicate Lab Control Sample	RQ2010797-03	72	46	36
Lab Control Sample	RQ2011169-02	56	43	24
Duplicate Lab Control Sample	RQ2011169-03	62	50	31

Client: Inventum Engineering **Service Request:** R2008433
Project: Riverview
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Nitrobenzene-d5 10-95	Phenol-d6 10-145	p-Terphenyl-d14 10-106
SD-MS-09082020	R2008433-001	6*	7*	8*
SD-MS-09082020 RE	R2008433-001	7*	7*	33
SD-BC-1415-09082020	R2008433-002	12	18	37
SD-BC-1350-09082020	R2008433-003	27	32	40
SD-BC-1329-09082020	R2008433-004	31	35	45
SD-BC-1329-09082020 DL	R2008433-004	39	36	51
SD-BC-1266-09082020	R2008433-005	32	42	31
SD-BC-1219-09082020	R2008433-006	38	42	44
Method Blank	RQ2010797-01	33	34	45
Method Blank	RQ2011169-01	25	20	61
Lab Control Sample	RQ2010797-02	47	42	50
Duplicate Lab Control Sample	RQ2010797-03	46	41	52
Lab Control Sample	RQ2011169-02	38	32	62
Duplicate Lab Control Sample	RQ2011169-03	47	40	67

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2010797-01	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	330 U	330	1	09/17/20 18:03	9/16/20	
1,2-Dichlorobenzene	330 U	330	1	09/17/20 18:03	9/16/20	
1,3-Dichlorobenzene	330 U	330	1	09/17/20 18:03	9/16/20	
1,4-Dichlorobenzene	330 U	330	1	09/17/20 18:03	9/16/20	
2,4,5-Trichlorophenol	330 U	330	1	09/17/20 18:03	9/16/20	
2,4,6-Trichlorophenol	330 U	330	1	09/17/20 18:03	9/16/20	
2,4-Dichlorophenol	330 U	330	1	09/17/20 18:03	9/16/20	
2,4-Dimethylphenol	330 U	330	1	09/17/20 18:03	9/16/20	
2,4-Dinitrophenol	1700 U	1700	1	09/17/20 18:03	9/16/20	
2,4-Dinitrotoluene	330 U	330	1	09/17/20 18:03	9/16/20	
2,6-Dinitrotoluene	330 U	330	1	09/17/20 18:03	9/16/20	
2-Chloronaphthalene	330 U	330	1	09/17/20 18:03	9/16/20	
2-Chlorophenol	330 U	330	1	09/17/20 18:03	9/16/20	
2-Methylnaphthalene	330 U	330	1	09/17/20 18:03	9/16/20	
2-Methylphenol	330 U	330	1	09/17/20 18:03	9/16/20	
2-Nitroaniline	330 U	330	1	09/17/20 18:03	9/16/20	
2-Nitrophenol	330 U	330	1	09/17/20 18:03	9/16/20	
3,3'-Dichlorobenzidine	330 U	330	1	09/17/20 18:03	9/16/20	
3- and 4-Methylphenol Coelution	330 U	330	1	09/17/20 18:03	9/16/20	
3-Nitroaniline	330 U	330	1	09/17/20 18:03	9/16/20	
4,6-Dinitro-2-methylphenol	1700 U	1700	1	09/17/20 18:03	9/16/20	
4-Bromophenyl Phenyl Ether	330 U	330	1	09/17/20 18:03	9/16/20	
4-Chloro-3-methylphenol	330 U	330	1	09/17/20 18:03	9/16/20	
4-Chloroaniline	330 U	330	1	09/17/20 18:03	9/16/20	
4-Chlorophenyl Phenyl Ether	330 U	330	1	09/17/20 18:03	9/16/20	
4-Nitroaniline	330 U	330	1	09/17/20 18:03	9/16/20	
4-Nitrophenol	1700 U	1700	1	09/17/20 18:03	9/16/20	
Acenaphthene	330 U	330	1	09/17/20 18:03	9/16/20	
Acenaphthylene	330 U	330	1	09/17/20 18:03	9/16/20	
Anthracene	330 U	330	1	09/17/20 18:03	9/16/20	
Benz(a)anthracene	330 U	330	1	09/17/20 18:03	9/16/20	
Benzo(a)pyrene	330 U	330	1	09/17/20 18:03	9/16/20	
Benzo(b)fluoranthene	330 U	330	1	09/17/20 18:03	9/16/20	
Benzo(g,h,i)perylene	330 U	330	1	09/17/20 18:03	9/16/20	
Benzo(k)fluoranthene	330 U	330	1	09/17/20 18:03	9/16/20	
Benzyl Alcohol	330 U	330	1	09/17/20 18:03	9/16/20	
2,2'-Oxybis(1-chloropropane)	330 U	330	1	09/17/20 18:03	9/16/20	
Bis(2-chloroethoxy)methane	330 U	330	1	09/17/20 18:03	9/16/20	
Bis(2-chloroethyl) Ether	330 U	330	1	09/17/20 18:03	9/16/20	
Bis(2-ethylhexyl) Phthalate	500 U	500	1	09/17/20 18:03	9/16/20	
Butyl Benzyl Phthalate	330 U	330	1	09/17/20 18:03	9/16/20	
Carbazole	330 U	330	1	09/17/20 18:03	9/16/20	
Chrysene	330 U	330	1	09/17/20 18:03	9/16/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2010797-01	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	330	U	330	1	09/17/20 18:03	9/16/20	
Di-n-octyl Phthalate	330	U	330	1	09/17/20 18:03	9/16/20	
Dibenz(a,h)anthracene	330	U	330	1	09/17/20 18:03	9/16/20	
Dibenzofuran	330	U	330	1	09/17/20 18:03	9/16/20	
Diethyl Phthalate	330	U	330	1	09/17/20 18:03	9/16/20	
Dimethyl Phthalate	330	U	330	1	09/17/20 18:03	9/16/20	
Fluoranthene	330	U	330	1	09/17/20 18:03	9/16/20	
Fluorene	330	U	330	1	09/17/20 18:03	9/16/20	
Hexachlorobenzene	330	U	330	1	09/17/20 18:03	9/16/20	
Hexachlorobutadiene	330	U	330	1	09/17/20 18:03	9/16/20	
Hexachlorocyclopentadiene	330	U	330	1	09/17/20 18:03	9/16/20	
Hexachloroethane	330	U	330	1	09/17/20 18:03	9/16/20	
Indeno(1,2,3-cd)pyrene	330	U	330	1	09/17/20 18:03	9/16/20	
Isophorone	330	U	330	1	09/17/20 18:03	9/16/20	
N-Nitrosodi-n-propylamine	330	U	330	1	09/17/20 18:03	9/16/20	
N-Nitrosodimethylamine	330	U	330	1	09/17/20 18:03	9/16/20	
N-Nitrosodiphenylamine	330	U	330	1	09/17/20 18:03	9/16/20	
Naphthalene	330	U	330	1	09/17/20 18:03	9/16/20	
Nitrobenzene	330	U	330	1	09/17/20 18:03	9/16/20	
Pentachlorophenol (PCP)	1700	U	1700	1	09/17/20 18:03	9/16/20	
Phenanthrene	330	U	330	1	09/17/20 18:03	9/16/20	
Phenol	330	U	330	1	09/17/20 18:03	9/16/20	
Pyrene	330	U	330	1	09/17/20 18:03	9/16/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	39	10 - 109	09/17/20 18:03	
2-Fluorobiphenyl	28	10 - 102	09/17/20 18:03	
2-Fluorophenol	29	10 - 88	09/17/20 18:03	
Nitrobenzene-d5	33	10 - 95	09/17/20 18:03	
Phenol-d6	34	10 - 145	09/17/20 18:03	
p-Terphenyl-d14	45	10 - 106	09/17/20 18:03	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2011169-01	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	330 U	330	1	09/25/20 08:52	9/23/20	
1,2-Dichlorobenzene	330 U	330	1	09/25/20 08:52	9/23/20	
1,3-Dichlorobenzene	330 U	330	1	09/25/20 08:52	9/23/20	
1,4-Dichlorobenzene	330 U	330	1	09/25/20 08:52	9/23/20	
2,4,5-Trichlorophenol	330 U	330	1	09/25/20 08:52	9/23/20	
2,4,6-Trichlorophenol	330 U	330	1	09/25/20 08:52	9/23/20	
2,4-Dichlorophenol	330 U	330	1	09/25/20 08:52	9/23/20	
2,4-Dimethylphenol	330 U	330	1	09/25/20 08:52	9/23/20	
2,4-Dinitrophenol	1700 U	1700	1	09/25/20 08:52	9/23/20	
2,4-Dinitrotoluene	330 U	330	1	09/25/20 08:52	9/23/20	
2,6-Dinitrotoluene	330 U	330	1	09/25/20 08:52	9/23/20	
2-Chloronaphthalene	330 U	330	1	09/25/20 08:52	9/23/20	
2-Chlorophenol	330 U	330	1	09/25/20 08:52	9/23/20	
2-Methylnaphthalene	330 U	330	1	09/25/20 08:52	9/23/20	
2-Methylphenol	330 U	330	1	09/25/20 08:52	9/23/20	
2-Nitroaniline	330 U	330	1	09/25/20 08:52	9/23/20	
2-Nitrophenol	330 U	330	1	09/25/20 08:52	9/23/20	
3,3'-Dichlorobenzidine	330 U	330	1	09/25/20 08:52	9/23/20	
3- and 4-Methylphenol Coelution	330 U	330	1	09/25/20 08:52	9/23/20	
3-Nitroaniline	330 U	330	1	09/25/20 08:52	9/23/20	
4,6-Dinitro-2-methylphenol	1700 U	1700	1	09/25/20 08:52	9/23/20	
4-Bromophenyl Phenyl Ether	330 U	330	1	09/25/20 08:52	9/23/20	
4-Chloro-3-methylphenol	330 U	330	1	09/25/20 08:52	9/23/20	
4-Chloroaniline	330 U	330	1	09/25/20 08:52	9/23/20	
4-Chlorophenyl Phenyl Ether	330 U	330	1	09/25/20 08:52	9/23/20	
4-Nitroaniline	330 U	330	1	09/25/20 08:52	9/23/20	
4-Nitrophenol	1700 U	1700	1	09/25/20 08:52	9/23/20	
Acenaphthene	330 U	330	1	09/25/20 08:52	9/23/20	
Acenaphthylene	330 U	330	1	09/25/20 08:52	9/23/20	
Anthracene	330 U	330	1	09/25/20 08:52	9/23/20	
Benz(a)anthracene	330 U	330	1	09/25/20 08:52	9/23/20	
Benzo(a)pyrene	330 U	330	1	09/25/20 08:52	9/23/20	
Benzo(b)fluoranthene	330 U	330	1	09/25/20 08:52	9/23/20	
Benzo(g,h,i)perylene	330 U	330	1	09/25/20 08:52	9/23/20	
Benzo(k)fluoranthene	330 U	330	1	09/25/20 08:52	9/23/20	
Benzyl Alcohol	330 U	330	1	09/25/20 08:52	9/23/20	
2,2'-Oxybis(1-chloropropane)	330 U	330	1	09/25/20 08:52	9/23/20	
Bis(2-chloroethoxy)methane	330 U	330	1	09/25/20 08:52	9/23/20	
Bis(2-chloroethyl) Ether	330 U	330	1	09/25/20 08:52	9/23/20	
Bis(2-ethylhexyl) Phthalate	510 U	510	1	09/25/20 08:52	9/23/20	
Butyl Benzyl Phthalate	330 U	330	1	09/25/20 08:52	9/23/20	
Carbazole	330 U	330	1	09/25/20 08:52	9/23/20	
Chrysene	330 U	330	1	09/25/20 08:52	9/23/20	

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2011169-01	**Basis:**	Dry

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Di-n-butyl Phthalate	330 U	330	1	09/25/20 08:52	9/23/20	
Di-n-octyl Phthalate	330 U	330	1	09/25/20 08:52	9/23/20	
Dibenz(a,h)anthracene	330 U	330	1	09/25/20 08:52	9/23/20	
Dibenzofuran	330 U	330	1	09/25/20 08:52	9/23/20	
Diethyl Phthalate	330 U	330	1	09/25/20 08:52	9/23/20	
Dimethyl Phthalate	330 U	330	1	09/25/20 08:52	9/23/20	
Fluoranthene	330 U	330	1	09/25/20 08:52	9/23/20	
Fluorene	330 U	330	1	09/25/20 08:52	9/23/20	
Hexachlorobenzene	330 U	330	1	09/25/20 08:52	9/23/20	
Hexachlorobutadiene	330 U	330	1	09/25/20 08:52	9/23/20	
Hexachlorocyclopentadiene	330 U	330	1	09/25/20 08:52	9/23/20	
Hexachloroethane	330 U	330	1	09/25/20 08:52	9/23/20	
Indeno(1,2,3-cd)pyrene	330 U	330	1	09/25/20 08:52	9/23/20	
Isophorone	330 U	330	1	09/25/20 08:52	9/23/20	
N-Nitrosodi-n-propylamine	330 U	330	1	09/25/20 08:52	9/23/20	
N-Nitrosodimethylamine	330 U	330	1	09/25/20 08:52	9/23/20	
N-Nitrosodiphenylamine	330 U	330	1	09/25/20 08:52	9/23/20	
Naphthalene	330 U	330	1	09/25/20 08:52	9/23/20	
Nitrobenzene	330 U	330	1	09/25/20 08:52	9/23/20	
Pentachlorophenol (PCP)	1700 U	1700	1	09/25/20 08:52	9/23/20	
Phenanthrene	330 U	330	1	09/25/20 08:52	9/23/20	
Phenol	330 U	330	1	09/25/20 08:52	9/23/20	
Pyrene	330 U	330	1	09/25/20 08:52	9/23/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	40	10 - 109	09/25/20 08:52	
2-Fluorobiphenyl	27	10 - 102	09/25/20 08:52	
2-Fluorophenol	14	10 - 88	09/25/20 08:52	
Nitrobenzene-d5	25	10 - 95	09/25/20 08:52	
Phenol-d6	20	10 - 145	09/25/20 08:52	
p-Terphenyl-d14	61	10 - 106	09/25/20 08:52	

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Analyzed: 09/17/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2010797-02			RQ2010797-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trichlorobenzene	8270D	618	1680	37	569	1650	34	17-80	8	30
1,2-Dichlorobenzene	8270D	566	1680	34	508	1650	31	14-77	9	30
1,3-Dichlorobenzene	8270D	553	1680	33	484	1650	29	12-75	13	30
1,4-Dichlorobenzene	8270D	552	1680	33	487	1650	30	13-74	10	30
2,4,5-Trichlorophenol	8270D	872	1680	52	882	1650	53	29-97	2	30
2,4,6-Trichlorophenol	8270D	834	1680	50	808	1650	49	26-97	2	30
2,4-Dichlorophenol	8270D	756	1680	45	714	1650	43	25-90	5	30
2,4-Dimethylphenol	8270D	754	1680	45	700	1650	42	26-89	7	30
2,4-Dinitrophenol	8270D	925 J	1680	55	920 J	1650	56	10-128	2	30
2,4-Dinitrotoluene	8270D	1490	1680	89	1480	1650	90	30-111	1	30
2,6-Dinitrotoluene	8270D	1410	1680	84	1380	1650	84	28-105	<1	30
2-Chloronaphthalene	8270D	788	1680	47	744	1650	45	21-88	4	30
2-Chlorophenol	8270D	631	1680	38	578	1650	35	18-87	8	30
2-Methylnaphthalene	8270D	714	1680	43	665	1650	40	21-83	7	30
2-Methylphenol	8270D	741	1680	44	694	1650	42	22-86	5	30
2-Nitroaniline	8270D	1380	1680	82	1340	1650	81	27-105	1	30
2-Nitrophenol	8270D	940	1680	56	891	1650	54	20-88	4	30
3- and 4-Methylphenol Coelution	8270D	745	1680	44	701	1650	42	27-92	5	30
3-Nitroaniline	8270D	1300	1680	78	1310	1650	79	27-98	1	30
4,6-Dinitro-2-methylphenol	8270D	1400 J	1680	84	1410 J	1650	85	11-96	1	30
4-Bromophenyl Phenyl Ether	8270D	943	1680	56	915	1650	55	25-96	2	30
4-Chloro-3-methylphenol	8270D	893	1680	53	861	1650	52	29-92	2	30
4-Chloroaniline	8270D	703	1680	42	676	1650	41	21-72	2	30
4-Chlorophenyl Phenyl Ether	8270D	804	1680	48	794	1650	48	25-92	<1	30
4-Nitroaniline	8270D	1360	1680	81	1360	1650	82	27-102	1	30
4-Nitrophenol	8270D	1190 J	1680	71	1200 J	1650	73	10-130	3	30
Acenaphthene	8270D	832	1680	50	809	1650	49	25-92	2	30
Acenaphthylene	8270D	914	1680	55	879	1650	53	27-93	4	30
Anthracene	8270D	1150	1680	69	1130	1650	68	32-106	1	30
Benz(a)anthracene	8270D	1100	1680	66	1090	1650	66	33-109	<1	30
Benzo(a)pyrene	8270D	1370	1680	81	1340	1650	81	34-115	<1	30
Benzo(b)fluoranthene	8270D	1260	1680	75	1220	1650	74	31-107	1	30
Benzo(g,h,i)perylene	8270D	1510	1680	90	1490	1650	90	30-127	<1	30

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Analyzed: 09/17/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2010797-02			RQ2010797-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(k)fluoranthene	8270D	1350	1680	80	1320	1650	80	34-111	<1	30
Benzyl Alcohol	8270D	717	1680	43	697	1650	42	21-100	2	30
2,2'-Oxybis(1-chloropropane)	8270D	511	1680	30	467	1650	28	10-82	7	30
Bis(2-chloroethoxy)methane	8270D	670	1680	40	625	1650	38	17-85	5	30
Bis(2-chloroethyl) Ether	8270D	553	1680	33	489	1650	30	10-79	10	30
Bis(2-ethylhexyl) Phthalate	8270D	1320	1680	79	1310	1650	80	31-115	1	30
Butyl Benzyl Phthalate	8270D	1260	1680	75	1220	1650	74	31-115	1	30
Carbazole	8270D	1380	1680	82	1370	1650	83	23-129	1	30
Chrysene	8270D	1160	1680	69	1160	1650	71	34-108	3	30
Di-n-butyl Phthalate	8270D	1270	1680	76	1270	1650	77	33-114	1	30
Di-n-octyl Phthalate	8270D	1540	1680	92	1500	1650	91	32-116	1	30
Dibenz(a,h)anthracene	8270D	1440	1680	86	1410	1650	86	23-122	<1	30
Dibenzofuran	8270D	904	1680	54	880	1650	53	27-94	2	30
Diethyl Phthalate	8270D	1020	1680	61	1000	1650	61	26-101	<1	30
Dimethyl Phthalate	8270D	1010	1680	60	980	1650	59	27-98	2	30
Fluoranthene	8270D	1250	1680	75	1220	1650	74	34-111	1	30
Fluorene	8270D	943	1680	56	929	1650	56	27-95	<1	30
Hexachlorobenzene	8270D	1110	1680	66	1090	1650	66	30-104	<1	30
Hexachlorobutadiene	8270D	636	1680	38	573	1650	35	10-142	8	30
Hexachlorocyclopentadiene	8270D	502	1680	30	464	1650	28	10-133	7	30
Hexachloroethane	8270D	532	1680	32	471	1650	29	10-129	10	30
Indeno(1,2,3-cd)pyrene	8270D	1300	1680	77	1280	1650	78	33-121	1	30
Isophorone	8270D	578	1680	34	542	1650	33	21-79	3	30
N-Nitrosodi-n-propylamine	8270D	700	1680	42	648	1650	39	15-78	7	30
N-Nitrosodimethylamine	8270D	611	1680	36	561	1650	34	15-76	6	30
N-Nitrosodiphenylamine	8270D	1260	1680	75	1230	1650	74	29-108	1	30
Naphthalene	8270D	649	1680	39	606	1650	37	18-81	5	30
Nitrobenzene	8270D	725	1680	43	669	1650	41	14-80	5	30
Pentachlorophenol (PCP)	8270D	1180 J	1680	70	1220 J	1650	74	13-117	6	30
Phenanthrene	8270D	1110	1680	66	1080	1650	65	33-103	2	30
Phenol	8270D	690	1680	41	647	1650	39	10-144	5	30
Pyrene	8270D	1200	1680	72	1180	1650	72	33-111	<1	30

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Analyzed: 09/25/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2011169-02			RQ2011169-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trichlorobenzene	8270D	683	1720	40	807	1640	49	17-80	20	30
1,2-Dichlorobenzene	8270D	611	1720	36	726	1640	44	14-77	20	30
1,3-Dichlorobenzene	8270D	585	1720	34	702	1640	43	12-75	23	30
1,4-Dichlorobenzene	8270D	580	1720	34	698	1640	43	13-74	23	30
2,4,5-Trichlorophenol	8270D	979	1720	57	1070	1640	65	29-97	13	30
2,4,6-Trichlorophenol	8270D	906	1720	53	1000	1640	61	26-97	14	30
2,4-Dichlorophenol	8270D	782	1720	45	903	1640	55	25-90	20	30
2,4-Dimethylphenol	8270D	756	1720	44	838	1640	51	26-89	15	30
2,4-Dinitrophenol	8270D	887 J	1720	52	1700 U	1640	0 *	10-128	NC	30
2,4-Dinitrotoluene	8270D	1040	1720	61	1190	1640	73	30-111	18	30
2,6-Dinitrotoluene	8270D	977	1720	57	1120	1640	68	28-105	18	30
2-Chloronaphthalene	8270D	788	1720	46	893	1640	54	21-88	16	30
2-Chlorophenol	8270D	604	1720	35	718	1640	44	18-87	23	30
2-Methylnaphthalene	8270D	732	1720	43	847	1640	52	21-83	19	30
2-Methylphenol	8270D	697	1720	41	811	1640	49	22-86	18	30
2-Nitroaniline	8270D	967	1720	56	1090	1640	66	27-105	16	30
2-Nitrophenol	8270D	803	1720	47	928	1640	57	20-88	19	30
3- and 4-Methylphenol Coelution	8270D	677	1720	39	789	1640	48	27-92	21	30
3-Nitroaniline	8270D	991	1720	58	1060	1640	65	27-98	11	30
4,6-Dinitro-2-methylphenol	8270D	924 J	1720	54	966 J	1640	59	11-96	9	30
4-Bromophenyl Phenyl Ether	8270D	847	1720	49	933	1640	57	25-96	15	30
4-Chloro-3-methylphenol	8270D	903	1720	53	1010	1640	62	29-92	16	30
4-Chloroaniline	8270D	795	1720	46	817	1640	50	21-72	8	30
4-Chlorophenyl Phenyl Ether	8270D	792	1720	46	886	1640	54	25-92	16	30
4-Nitroaniline	8270D	1020	1720	59	1140	1640	70	27-102	17	30
4-Nitrophenol	8270D	954 J	1720	55	1080 J	1640	66	10-130	18	30
Acenaphthene	8270D	831	1720	48	926	1640	56	25-92	15	30
Acenaphthylene	8270D	883	1720	51	982	1640	60	27-93	16	30
Anthracene	8270D	981	1720	57	1070	1640	65	32-106	13	30
Benz(a)anthracene	8270D	1070	1720	62	1210	1640	74	33-109	18	30
Benzo(a)pyrene	8270D	1240	1720	72	1410	1640	86	34-115	18	30
Benzo(b)fluoranthene	8270D	1110	1720	64	1250	1640	76	31-107	17	30
Benzo(g,h,i)perylene	8270D	1240	1720	72	1410	1640	86	30-127	18	30

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Analyzed: 09/25/20

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2011169-02			RQ2011169-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzo(k)fluoranthene	8270D	1180	1720	69	1340	1640	82	34-111	17	30
Benzyl Alcohol	8270D	747	1720	43	862	1640	52	21-100	19	30
2,2'-Oxybis(1-chloropropane)	8270D	530	1720	31	625	1640	38	10-82	20	30
Bis(2-chloroethoxy)methane	8270D	654	1720	38	767	1640	47	17-85	21	30
Bis(2-chloroethyl) Ether	8270D	517	1720	30	612	1640	37	10-79	21	30
Bis(2-ethylhexyl) Phthalate	8270D	1170	1720	68	1280	1640	78	31-115	14	30
Butyl Benzyl Phthalate	8270D	1160	1720	68	1280	1640	78	31-115	14	30
Carbazole	8270D	1130	1720	66	1230	1640	75	23-129	13	30
Chrysene	8270D	1140	1720	66	1310	1640	80	34-108	19	30
Di-n-butyl Phthalate	8270D	1170	1720	68	1290	1640	79	33-114	15	30
Di-n-octyl Phthalate	8270D	1200	1720	70	1310	1640	80	32-116	13	30
Dibenz(a,h)anthracene	8270D	1270	1720	74	1450	1640	89	23-122	18	30
Dibenzofuran	8270D	888	1720	52	971	1640	59	27-94	13	30
Diethyl Phthalate	8270D	907	1720	53	996	1640	61	26-101	14	30
Dimethyl Phthalate	8270D	905	1720	53	984	1640	60	27-98	12	30
Fluoranthene	8270D	1120	1720	65	1260	1640	77	34-111	17	30
Fluorene	8270D	895	1720	52	984	1640	60	27-95	14	30
Hexachlorobenzene	8270D	937	1720	55	1030	1640	63	30-104	14	30
Hexachlorobutadiene	8270D	765	1720	44	879	1640	54	10-142	20	30
Hexachlorocyclopentadiene	8270D	596	1720	35	705	1640	43	10-133	21	30
Hexachloroethane	8270D	574	1720	33	685	1640	42	10-129	24	30
Indeno(1,2,3-cd)pyrene	8270D	1190	1720	69	1350	1640	82	33-121	17	30
Isophorone	8270D	589	1720	34	663	1640	40	21-79	16	30
N-Nitrosodi-n-propylamine	8270D	645	1720	38	763	1640	46	15-78	19	30
N-Nitrosodimethylamine	8270D	340 U	1720	0 *	330 U	1640	0 *	15-76	NC	30
N-Nitrosodiphenylamine	8270D	1020	1720	59	1120	1640	68	29-108	14	30
Naphthalene	8270D	718	1720	42	832	1640	51	18-81	19	30
Nitrobenzene	8270D	654	1720	38	801	1640	49	14-80	25	30
Pentachlorophenol (PCP)	8270D	1360 J	1720	79	1430 J	1640	87	13-117	10	30
Phenanthrene	8270D	963	1720	56	1070	1640	65	33-103	15	30
Phenol	8270D	572	1720	33	687	1640	42	10-144	24	30
Pyrene	8270D	1090	1720	63	1250	1640	76	33-111	19	30

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Inventum Engineering **Service Request:** R2008433
Project: Riverview
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl 22-128	Tetrachloro-m-xylene 14-119
SD-MS-09082020	R2008433-001	53	47
SD-BC-1415-09082020	R2008433-002	66	58
SD-BC-1350-09082020	R2008433-003	53	47
SD-BC-1329-09082020	R2008433-004	37	34
SD-BC-1266-09082020	R2008433-005	44	41
SD-BC-1219-09082020	R2008433-006	49	44
Method Blank	RQ2010840-01	84	82
Lab Control Sample	RQ2010840-02	84	78
Duplicate Lab Control Sample	RQ2010840-03	89	77

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2010840-01	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	32 U	32	1	09/24/20 19:56	9/23/20	
Aroclor 1221	66 U	66	1	09/24/20 19:56	9/23/20	
Aroclor 1232	32 U	32	1	09/24/20 19:56	9/23/20	
Aroclor 1242	32 U	32	1	09/24/20 19:56	9/23/20	
Aroclor 1248	32 U	32	1	09/24/20 19:56	9/23/20	
Aroclor 1254	32 U	32	1	09/24/20 19:56	9/23/20	
Aroclor 1260	32 U	32	1	09/24/20 19:56	9/23/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	84	22 - 128	09/24/20 19:56	
Tetrachloro-m-xylene	82	14 - 119	09/24/20 19:56	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Analyzed: 09/24/20

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/Kg
Basis: Dry

		Lab Control Sample			**Duplicate Lab Control Sample**					
		RQ2010840-02			RQ2010840-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	8082A	129	167	77	137	168	82	41-127	7	30
Aroclor 1260	8082A	137	167	82	151	168	90	37-127	10	30

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	R2008433-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum, Total	6010C	20 U	mg/Kg	20	1	09/18/20 00:36	09/17/20	
Antimony, Total	6010C	6.0 U	mg/Kg	6.0	1	09/18/20 00:36	09/17/20	
Arsenic, Total	6010C	1.0 U	mg/Kg	1.0	1	09/18/20 00:36	09/17/20	
Barium, Total	6010C	2.0 U	mg/Kg	2.0	1	09/18/20 00:36	09/17/20	
Beryllium, Total	6010C	0.30 U	mg/Kg	0.30	1	09/18/20 00:36	09/17/20	
Cadmium, Total	6010C	0.50 U	mg/Kg	0.50	1	09/18/20 00:36	09/17/20	
Calcium, Total	6010C	100 U	mg/Kg	100	1	09/18/20 00:36	09/17/20	
Chromium, Total	6010C	1.0 U	mg/Kg	1.0	1	09/18/20 00:36	09/17/20	
Cobalt, Total	6010C	5.0 U	mg/Kg	5.0	1	09/18/20 00:36	09/17/20	
Copper, Total	6010C	2.0 U	mg/Kg	2.0	1	09/18/20 00:36	09/17/20	
Iron, Total	6010C	20 U	mg/Kg	20	1	09/18/20 00:36	09/17/20	
Lead, Total	6010C	5.0 U	mg/Kg	5.0	1	09/18/20 00:36	09/17/20	
Magnesium, Total	6010C	100 U	mg/Kg	100	1	09/18/20 00:36	09/17/20	
Manganese, Total	6010C	2.0 U	mg/Kg	2.0	1	09/18/20 00:36	09/17/20	
Mercury, Total	7471B	0.033 U	mg/Kg	0.033	1	09/16/20 12:37	09/15/20	
Nickel, Total	6010C	4.0 U	mg/Kg	4.0	1	09/18/20 00:36	09/17/20	
Potassium, Total	6010C	200 U	mg/Kg	200	1	09/18/20 00:36	09/17/20	
Selenium, Total	6010C	1.0 U	mg/Kg	1.0	1	09/18/20 00:36	09/17/20	
Silver, Total	6010C	1.0 U	mg/Kg	1.0	1	09/18/20 00:36	09/17/20	
Sodium, Total	6010C	100 U	mg/Kg	100	1	09/18/20 00:36	09/17/20	
Thallium, Total	6010C	1.0 U	mg/Kg	1.0	1	09/18/20 00:36	09/17/20	
Vanadium, Total	6010C	5.0 U	mg/Kg	5.0	1	09/18/20 00:36	09/17/20	
Zinc, Total	6010C	2.0 U	mg/Kg	2.0	1	09/18/20 00:36	09/17/20	

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Analyzed: 09/16/20 - 09/18/20

Lab Control Sample Summary
Inorganic Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2008433-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Aluminum, Total	6010C	195	200	97	80-120
Antimony, Total	6010C	46.6	50.0	93	80-120
Arsenic, Total	6010C	3.66	4.0	92	80-120
Barium, Total	6010C	204	200	102	80-120
Beryllium, Total	6010C	4.89	5.00	98	80-120
Cadmium, Total	6010C	5.05	5.00	101	80-120
Calcium, Total	6010C	202	200	101	80-120
Chromium, Total	6010C	20.3	20.0	102	80-120
Cobalt, Total	6010C	50.7	50.0	101	80-120
Copper, Total	6010C	25.2	25.0	101	80-120
Iron, Total	6010C	100	100	100	80-120
Lead, Total	6010C	50.2	50.0	100	80-120
Magnesium, Total	6010C	195	200	98	80-120
Manganese, Total	6010C	49.5	50.0	99	80-120
Mercury, Total	7471B	0.170	0.167	102	80-120
Nickel, Total	6010C	50.6	50.0	101	80-120
Potassium, Total	6010C	1860	2000	93	80-120
Selenium, Total	6010C	85.2	101	84	80-120
Silver, Total	6010C	4.78	5.0	96	80-120
Sodium, Total	6010C	1990	2000	99	80-120
Thallium, Total	6010C	189	200	94	80-120
Vanadium, Total	6010C	50.0	50.0	100	80-120
Zinc, Total	6010C	48.3	50.0	97	80-120

General Chemistry

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Analytical Report

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	R2008433-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	350.1M	5.0	U	mg/Kg	5.0	1	09/29/20 21:48	09/29/20	
Cyanide, Total	9012B	0.30	U	mg/Kg	0.30	1	09/18/20 17:23	09/17/20	

Client:	Inventum Engineering	**Service Request:**	R2008433
Project:	Riverview	**Date Collected:**	09/08/20
Sample Matrix:	Soil	**Date Received:**	09/12/20
		Date Analyzed:	09/18/20
		Date Extracted:	09/17/20

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	SD-BC-1219-09082020	**Units:**	mg/Kg
Lab Code:	R2008433-006	**Basis:**	Dry
Analysis Method:	9012B		
Prep Method:	Method		

		Matrix Spike			Duplicate Matrix Spike					
		R2008433-006MS			R2008433-006DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	90.9	89.1	8.8	-20 #	111	9.3	219 #	10-159	22	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Analyzed: 09/18/20 - 09/29/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2008433-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Ammonia as Nitrogen, undistilled	350.1M	24.9	25.0	100	69-142
Cyanide, Total	9012B	2.66	3.00	89	85-115

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008433
Date Analyzed: 09/18/20

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R2008433-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	16.7	18.0	93	85-115

October 05, 2020 Service Request No:R2008432

Mr. Todd Waldrop
Inventum Engineering
481 Carlisle Drive
Herndon, VA 20170

Laboratory Results for: Riverview

Dear Mr.Waldrop,

Enclosed are the results of the sample(s) submitted to our laboratory September 12, 2020
For your reference, these analyses have been assigned our service request number **R2008432.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

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Phone (585) 288-5380 Fax (585) 288-8475
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ALS Environmental

Client: Inventum Engineering
Project: Riverview
Sample Matrix: Soil

Service Request: R2008432
Date Received: 09/12/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Six soil samples were received for analysis at ALS Environmental on 09/12/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Subcontracted Analytical Parameters:

No significant anomalies were noted with this analysis.

Approved by _____ Date 10/05/2020

Sample Receipt Information

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003605

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE _____ OF _____

Project Name	Project Number
Project Manager: Todd Waldrop	Report CC
Company/Address: 481 Carlisle Dr. Herndon VA. 20170	
Phone #: (571) 217-3627	Email: todd.waldrop@inventumem.com
Sampler's Signature: Keith Adderley	Sampler's Printed Name: Keith Adderley

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs • 8260 • 624 • CLP: Full TCLP	GC/MS SVOAs • 8270 • 625: Metals	GC VOAs • 8021 • 601/602: Cont., Ign., React	PESTICIDES • 8081 • 608: Cn, NH3, Solids	PCBs • 8082 • 608: 8260	METALS, TOTAL (List in comments below): TCLP VOA	METALS, DISSOLVED (List in comments below): 8270, 8082								REMARKS/ ALTERNATE DESCRIPTION
SD-MS-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1415-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1350-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1329-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1266-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1219-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								
SD-BC-1350-09082020		9/8/20				✓	✓	✓	✓	✓	✓	✓								

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
✓ Standard (10 business days-No Surcharge)
REQUESTED REPORT DATE _____

REPORT REQUIREMENTS
____ I. Results Only
✓ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
Edata ____ Yes ____ No

INVOICE INFORMATION
PO #
BILL TO: Same as Company address

STATE WHERE SAMPLES WERE COLLECTED

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Keith Adderley	Signature:	Signature	Signature	Signature	Signature
Printed Name: Keith Adderley	Printed Name: David White	Printed Name	Printed Name	Printed Name	
Firm	Firm: ALS	Firm	Firm	Firm	
Date/Time	Date/Time: 9/12/2020 0800	Date/Time	Date/Time	Date/Time	

R2008432
Inventum Engineering
Soils/Waters
5

Distribution: White - Lab Copy; Yellow - Return to Originator

Cooler Receipt and Preservation Check Form

R2008432 5
Inventum Engineering
Soils/Waters

Project/Client _____ Folder Number _____

Cooler received on 9/12/2020 by: DW

COURIER: ALS UPS ~~FEDEX~~ VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y ~~N~~	5a	**Perchlorate** samples have required headspace?	Y N ~~NA~~
2	**Custody papers** properly completed (ink, signed)?	Y N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N ~~NA~~
3	Did all bottles arrive in good **condition** (unbroken)?	Y N	6	Where did the bottles originate?	~~ALS~~/ROC CLIENT
4	Circle: ~~Wet Ice~~ **Dry Ice Gel packs** present?	Y N	7	Soil VOA received as: Bulk Encore 5035set	~~NA~~

8. Temperature Readings Date: 9/12/2020 Time: 0855 ID: IR#7 ~~IR#10~~ From: ~~Temp Blank~~ Sample Bottle

Observed Temp (°C)	2.1	6.0					
Within 0-6°C?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by DW on 9/12/2020 at 0855
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 9/15/2020 Time: 0912 by: @

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? YES (NO)
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO ~~N/A~~
13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated ~~N/A~~

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 081020-1SB
Explain all Discrepancies/ Other Comments:

SB-1350 on COC twice

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: @
PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

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REPORT QUALIFIERS AND DEFINITIONS

U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.

J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).

B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.

E Organics- Concentration has exceeded the calibration range for that specific analysis.

D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.

* Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.

H Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.

Spike was diluted out.

\+ Correlation coefficient for MSA is <0.995.

N Inorganics- Matrix spike recovery was outside laboratory limits.

N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.

S Concentration has been determined using Method of Standard Additions (MSA).

W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.

P Concentration >40% difference between the two GC columns.

C Confirmed by GC/MS

Q DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).

X See Case Narrative for discussion.

MRL Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Subcontracted Analytical Parameters

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ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

September 30, 2020

Reports and Invoices
ALS Environmental
1565 Jefferson Road
Building 300, Suite 360
Rochester, NY 14623

Certificate of Analysis

Project Name:	**R2008432**	Workorder:	**3128790**
Purchase Order:	**58R2008432**	Workorder ID:	**R2008432**

Dear Reports Invoices:

Enclosed are the analytical results for samples received by the laboratory on Thursday, September 17, 2020.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Sarah S Leung (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Michael Chevalier , Mr. Brady Kalkman , Ms. Janice Jaeger

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Ms. Sarah S Leung
Project Coordinator

SAMPLE SUMMARY

Workorder: 3128790 R2008432

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3128790001	SD-MS-09082020	Solid	9/8/2020 00:00	9/17/2020 08:35	Collected by Client
3128790002	SD-BC-1415-09082020	Solid	9/8/2020 00:00	9/17/2020 08:35	Collected by Client
3128790003	SD-BC-1350 08082020	Solid	9/8/2020 00:00	9/17/2020 08:35	Collected by Client
3128790004	SD-BC-1329-09082020	Solid	9/8/2020 00:00	9/17/2020 08:35	Collected by Client
3128790005	SD-BC-1266-09082020	Solid	9/8/2020 00:00	9/17/2020 08:35	Collected by Client
3128790006	SD-BC-1219-08082020	Solid	9/8/2020 00:00	9/17/2020 08:35	Collected by Client

SAMPLE SUMMARY

Workorder: 3128790 R2008432

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

PROJECT SUMMARY

Workorder: 3128790 R2008432

Sample Comments

Lab ID: 3128790001 **Sample ID:** SD-MS-09082020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3128790002 **Sample ID:** SD-BC-1415-09082020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3128790003 **Sample ID:** SD-BC-1350 08082020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3128790004 **Sample ID:** SD-BC-1329-09082020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3128790005 **Sample ID:** SD-BC-1266-09082020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3128790006 **Sample ID:** SD-BC-1219-08082020 **Sample Type:** SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790001** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-MS-09082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			9/22/20 12:35	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			9/22/20 12:35	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			9/22/20 12:35	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			9/22/20 12:35	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			9/22/20 12:35	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			9/22/20 12:35	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 12:35	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 12:35	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 12:35	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			9/22/20 12:35	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	110		%	62 - 133	SW846 8260C			9/22/20 12:35	DPC	C
4-Bromofluorobenzene (S)	90.2		%	79 - 114	SW846 8260C			9/22/20 12:35	DPC	C
Dibromofluoromethane (S)	104		%	78 - 116	SW846 8260C			9/22/20 12:35	DPC	C
Toluene-d8 (S)	99.4		%	76 - 127	SW846 8260C			9/22/20 12:35	DPC	C
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	9/22/20 14:30	VXF	9/24/20 14:01	CTD	A
Ignitability	See Comment	1,2, 3	Deg. F		SW-846 1010AM			9/30/20 11:00	II	A
Moisture	75.5		%	0.1	S2540G-11			9/18/20 11:35	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	9/22/20 14:30	VXF	9/22/20 17:45	VXF	A
Total Solids	24.5	6	%	0.1	S2540G-11			9/18/20 11:35	AXD	
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:12	SRT	A1
Barium, Total	ND		mg/L	2.8	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:12	SRT	A1
Cadmium, Total	0.016		mg/L	0.011	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:12	SRT	A1
Chromium, Total	ND		mg/L	0.028	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:12	SRT	A1
Lead, Total	ND		mg/L	0.033	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:12	SRT	A1
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	9/19/20 10:55	AHI	9/19/20 15:04	AHI	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:12	SRT	A1
Silver, Total	ND		mg/L	0.022	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:12	SRT	A1
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790001** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-MS-09082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
Pyridine	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	63.6		%	47 - 128	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
2-Fluorobiphenyl (S)	71.1		%	52 - 118	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
2-Fluorophenol (S)	47.9		%	20 - 87	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
Nitrobenzene-d5 (S)	82.5		%	27 - 139	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
Phenol-d5 (S)	35.6		%	10 - 81	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
Terphenyl-d14 (S)	48.1		%	46 - 133	SW846 8270D	9/21/20 12:55	MXL	9/22/20 18:54	GEC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:28	KJH	C
Chlordane	ND		ug/L	10.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:28	KJH	C
Endrin	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:28	KJH	C
Heptachlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:28	KJH	C
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:28	KJH	C
Methoxychlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:28	KJH	C
Toxaphene	ND		ug/L	20.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:28	KJH	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	21.9	4,5	%	30 - 140	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:28	KJH	C
Tetrachloro-m-xylene (S)	56.7		%	30 - 123	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:28	KJH	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 16:45	BS	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 16:45	BS	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	81.9		%	14 - 172	SW846 8151A	9/24/20 16:20	DXL	9/25/20 16:45	BS	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790001** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-MS-09082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790002** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1415-09082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			9/22/20 12:58	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			9/22/20 12:58	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			9/22/20 12:58	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			9/22/20 12:58	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			9/22/20 12:58	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			9/22/20 12:58	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 12:58	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 12:58	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 12:58	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			9/22/20 12:58	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	109		%	62 - 133	SW846 8260C			9/22/20 12:58	DPC	C
4-Bromofluorobenzene (S)	92.2		%	79 - 114	SW846 8260C			9/22/20 12:58	DPC	C
Dibromofluoromethane (S)	105		%	78 - 116	SW846 8260C			9/22/20 12:58	DPC	C
Toluene-d8 (S)	101		%	76 - 127	SW846 8260C			9/22/20 12:58	DPC	C
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	9/22/20 14:30	VXF	9/24/20 14:01	CTD	A
Ignitability	See Comment	1,2, 3	Deg. F		SW-846 1010AM			9/30/20 11:00	II	A
Moisture	90.1		%	0.1	S2540G-11			9/18/20 11:35	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	9/22/20 14:30	VXF	9/22/20 17:45	VXF	A
Total Solids	9.9	6	%	0.1	S2540G-11			9/18/20 11:35	AXD	
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:26	SRT	A1
Barium, Total	ND		mg/L	2.8	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:26	SRT	A1
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:26	SRT	A1
Chromium, Total	ND		mg/L	0.028	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:26	SRT	A1
Lead, Total	ND		mg/L	0.033	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:26	SRT	A1
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	9/19/20 10:55	AHI	9/19/20 15:05	AHI	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:26	SRT	A1
Silver, Total	ND		mg/L	0.022	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:26	SRT	A1
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790002** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1415-09082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
Pyridine	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	85.9		%	47 - 128	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
2-Fluorobiphenyl (S)	75		%	52 - 118	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
2-Fluorophenol (S)	58.4		%	20 - 87	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
Nitrobenzene-d5 (S)	86.4		%	27 - 139	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
Phenol-d5 (S)	36.9		%	10 - 81	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
Terphenyl-d14 (S)	72.3		%	46 - 133	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:21	GEC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:38	KJH	C
Chlordane	ND		ug/L	10.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:38	KJH	C
Endrin	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:38	KJH	C
Heptachlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:38	KJH	C
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:38	KJH	C
Methoxychlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:38	KJH	C
Toxaphene	ND		ug/L	20.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:38	KJH	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	24	4,5	%	30 - 140	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:38	KJH	C
Tetrachloro-m-xylene (S)	60.3		%	30 - 123	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:38	KJH	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 17:10	BS	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 17:10	BS	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	91.7		%	14 - 172	SW846 8151A	9/24/20 16:20	DXL	9/25/20 17:10	BS	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID:	**3128790002**	Date Collected:	9/8/2020 00:00	Matrix:	Solid
Sample ID:	**SD-BC-1415-09082020**	Date Received:	9/17/2020 08:35		

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790003** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1350 08082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			9/22/20 13:21	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			9/22/20 13:21	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			9/22/20 13:21	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			9/22/20 13:21	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			9/22/20 13:21	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			9/22/20 13:21	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 13:21	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 13:21	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 13:21	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			9/22/20 13:21	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	108		%	62 - 133	SW846 8260C			9/22/20 13:21	DPC	C
4-Bromofluorobenzene (S)	90.6		%	79 - 114	SW846 8260C			9/22/20 13:21	DPC	C
Dibromofluoromethane (S)	104		%	78 - 116	SW846 8260C			9/22/20 13:21	DPC	C
Toluene-d8 (S)	100		%	76 - 127	SW846 8260C			9/22/20 13:21	DPC	C
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	9/22/20 14:30	VXF	9/24/20 14:01	CTD	A
Ignitability	See Comment	1,2, 3	Deg. F		SW-846 1010AM			9/30/20 11:00	II	A
Moisture	35.8		%	0.1	S2540G-11			9/18/20 11:35	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	9/22/20 14:30	VXF	9/22/20 17:45	VXF	A
Total Solids	64.2	6	%	0.1	S2540G-11			9/18/20 11:35	AXD	
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:40	SRT	A1
Barium, Total	ND		mg/L	2.8	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:40	SRT	A1
Cadmium, Total	0.013		mg/L	0.011	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:40	SRT	A1
Chromium, Total	ND		mg/L	0.028	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:40	SRT	A1
Lead, Total	ND		mg/L	0.033	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:40	SRT	A1
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	9/19/20 10:55	AHI	9/19/20 15:07	AHI	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:40	SRT	A1
Silver, Total	ND		mg/L	0.022	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:40	SRT	A1
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790003** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1350 08082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
Pyridine	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	79.6		%	47 - 128	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
2-Fluorobiphenyl (S)	73		%	52 - 118	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
2-Fluorophenol (S)	58.1		%	20 - 87	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
Nitrobenzene-d5 (S)	86.6		%	27 - 139	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
Phenol-d5 (S)	36.5		%	10 - 81	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
Terphenyl-d14 (S)	65.9		%	46 - 133	SW846 8270D	9/21/20 12:55	MXL	9/22/20 19:47	GEC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:49	KJH	C
Chlordane	ND		ug/L	10.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:49	KJH	C
Endrin	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:49	KJH	C
Heptachlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:49	KJH	C
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:49	KJH	C
Methoxychlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:49	KJH	C
Toxaphene	ND		ug/L	20.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:49	KJH	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	12.9	4,5	%	30 - 140	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:49	KJH	C
Tetrachloro-m-xylene (S)	52.2		%	30 - 123	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:49	KJH	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 18:53	BS	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 18:53	BS	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	81.9		%	14 - 172	SW846 8151A	9/24/20 16:20	DXL	9/25/20 18:53	BS	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID:	**3128790003**	Date Collected:	9/8/2020 00:00	Matrix:	Solid
Sample ID:	**SD-BC-1350 08082020**	Date Received:	9/17/2020 08:35		

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ALS Environmental

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790004** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1329-09082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			9/22/20 13:43	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			9/22/20 13:43	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			9/22/20 13:43	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			9/22/20 13:43	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			9/22/20 13:43	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			9/22/20 13:43	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 13:43	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 13:43	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 13:43	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			9/22/20 13:43	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	110		%	62 - 133	SW846 8260C			9/22/20 13:43	DPC	C
4-Bromofluorobenzene (S)	89.4		%	79 - 114	SW846 8260C			9/22/20 13:43	DPC	C
Dibromofluoromethane (S)	103		%	78 - 116	SW846 8260C			9/22/20 13:43	DPC	C
Toluene-d8 (S)	99.3		%	76 - 127	SW846 8260C			9/22/20 13:43	DPC	C
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	9/22/20 14:30	VXF	9/24/20 14:01	CTD	A
Ignitability	See Comment	1,2, 3	Deg. F		SW-846 1010AM			9/30/20 11:00	II	A
Moisture	42.9		%	0.1	S2540G-11			9/18/20 11:35	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	9/22/20 14:30	VXF	9/22/20 17:45	VXF	A
Total Solids	57.1	6	%	0.1	S2540G-11			9/18/20 11:35	AXD	
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:44	SRT	A1
Barium, Total	ND		mg/L	2.8	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:44	SRT	A1
Cadmium, Total	0.020		mg/L	0.011	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:44	SRT	A1
Chromium, Total	ND		mg/L	0.028	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:44	SRT	A1
Lead, Total	ND		mg/L	0.033	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:44	SRT	A1
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	9/19/20 10:55	AHI	9/19/20 15:08	AHI	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:44	SRT	A1
Silver, Total	ND		mg/L	0.022	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:44	SRT	A1
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790004** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1329-09082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
Pyridine	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	75.7		%	47 - 128	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
2-Fluorobiphenyl (S)	67.2		%	52 - 118	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
2-Fluorophenol (S)	53		%	20 - 87	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
Nitrobenzene-d5 (S)	77.6		%	27 - 139	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
Phenol-d5 (S)	34.5		%	10 - 81	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
Terphenyl-d14 (S)	62.1		%	46 - 133	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:14	GEC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:59	KJH	C
Chlordane	ND		ug/L	10.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:59	KJH	C
Endrin	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:59	KJH	C
Heptachlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:59	KJH	C
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:59	KJH	C
Methoxychlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:59	KJH	C
Toxaphene	ND		ug/L	20.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:59	KJH	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	26.7	4,5	%	30 - 140	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:59	KJH	C
Tetrachloro-m-xylene (S)	54		%	30 - 123	SW846 8081B	9/22/20 07:50	MXL	9/23/20 16:59	KJH	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 19:19	BS	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 19:19	BS	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	80.1		%	14 - 172	SW846 8151A	9/24/20 16:20	DXL	9/25/20 19:19	BS	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790004** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1329-09082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790005** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1266-09082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			9/22/20 14:06	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			9/22/20 14:06	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			9/22/20 14:06	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			9/22/20 14:06	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			9/22/20 14:06	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			9/22/20 14:06	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 14:06	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 14:06	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 14:06	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			9/22/20 14:06	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	107		%	62 - 133	SW846 8260C			9/22/20 14:06	DPC	C
4-Bromofluorobenzene (S)	91.3		%	79 - 114	SW846 8260C			9/22/20 14:06	DPC	C
Dibromofluoromethane (S)	102		%	78 - 116	SW846 8260C			9/22/20 14:06	DPC	C
Toluene-d8 (S)	99.5		%	76 - 127	SW846 8260C			9/22/20 14:06	DPC	C
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	9/22/20 14:30	VXF	9/24/20 14:01	CTD	A
Ignitability	See Comment	1,2, 3	Deg. F		SW-846 1010AM			9/30/20 11:00	II	A
Moisture	40.3		%	0.1	S2540G-11			9/18/20 11:35	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	9/22/20 14:30	VXF	9/22/20 17:45	VXF	A
Total Solids	59.7	6	%	0.1	S2540G-11			9/18/20 11:35	AXD	
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:48	SRT	A1
Barium, Total	ND		mg/L	2.8	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:48	SRT	A1
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:48	SRT	A1
Chromium, Total	ND		mg/L	0.028	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:48	SRT	A1
Lead, Total	ND		mg/L	0.033	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:48	SRT	A1
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	9/19/20 10:55	AHI	9/19/20 15:09	AHI	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:48	SRT	A1
Silver, Total	ND		mg/L	0.022	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:48	SRT	A1
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790005** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1266-09082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
Pyridine	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	83.2		%	47 - 128	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
2-Fluorobiphenyl (S)	76		%	52 - 118	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
2-Fluorophenol (S)	60.5		%	20 - 87	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
Nitrobenzene-d5 (S)	87.4		%	27 - 139	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
Phenol-d5 (S)	38.4		%	10 - 81	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
Terphenyl-d14 (S)	64.9		%	46 - 133	SW846 8270D	9/21/20 12:55	MXL	9/22/20 20:41	GEC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:10	KJH	C
Chlordane	ND		ug/L	10.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:10	KJH	C
Endrin	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:10	KJH	C
Heptachlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:10	KJH	C
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:10	KJH	C
Methoxychlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:10	KJH	C
Toxaphene	ND		ug/L	20.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:10	KJH	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	14.1	4,5	%	30 - 140	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:10	KJH	C
Tetrachloro-m-xylene (S)	52.5		%	30 - 123	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:10	KJH	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 19:45	BS	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 19:45	BS	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	80.9		%	14 - 172	SW846 8151A	9/24/20 16:20	DXL	9/25/20 19:45	BS	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID:	**3128790005**	Date Collected:	9/8/2020 00:00	Matrix:	Solid
Sample ID:	**SD-BC-1266-09082020**	Date Received:	9/17/2020 08:35		

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790006** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1219-08082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND		ug/L	20.0	SW846 8260C			9/22/20 14:28	DPC	C
2-Butanone	ND		ug/L	200	SW846 8260C			9/22/20 14:28	DPC	C
Carbon Tetrachloride	ND		ug/L	20.0	SW846 8260C			9/22/20 14:28	DPC	C
Chlorobenzene	ND		ug/L	20.0	SW846 8260C			9/22/20 14:28	DPC	C
Chloroform	ND		ug/L	20.0	SW846 8260C			9/22/20 14:28	DPC	C
1,2-Dichloroethane	ND		ug/L	20.0	SW846 8260C			9/22/20 14:28	DPC	C
1,1-Dichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 14:28	DPC	C
Tetrachloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 14:28	DPC	C
Trichloroethene	ND		ug/L	20.0	SW846 8260C			9/22/20 14:28	DPC	C
Vinyl Chloride	ND		ug/L	20.0	SW846 8260C			9/22/20 14:28	DPC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	109		%	62 - 133	SW846 8260C			9/22/20 14:28	DPC	C
4-Bromofluorobenzene (S)	91.5		%	79 - 114	SW846 8260C			9/22/20 14:28	DPC	C
Dibromofluoromethane (S)	101		%	78 - 116	SW846 8260C			9/22/20 14:28	DPC	C
Toluene-d8 (S)	101		%	76 - 127	SW846 8260C			9/22/20 14:28	DPC	C
WET CHEMISTRY										
Cyanide, Reactive	ND		mg/kg	10	SW-846 7.3CN	9/22/20 14:30	VXF	9/24/20 14:01	CTD	A
Ignitability	See Comment	1,2, 3	Deg. F		SW-846 1010AM			9/30/20 11:00	II	A
Moisture	54.5		%	0.1	S2540G-11			9/18/20 11:35	AXD	
Sulfide, Reactive	ND		mg/kg	6.2	SW846 7.3	9/22/20 14:30	VXF	9/22/20 17:45	VXF	A
Total Solids	45.5	11	%	0.1	S2540G-11			9/18/20 11:35	AXD	
TCLP EPA 1311 METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:51	SRT	A1
Barium, Total	ND		mg/L	2.8	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:51	SRT	A1
Cadmium, Total	ND		mg/L	0.011	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:51	SRT	A1
Chromium, Total	ND		mg/L	0.028	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:51	SRT	A1
Lead, Total	ND		mg/L	0.033	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:51	SRT	A1
Mercury, Total	ND		mg/L	0.0020	SW846 7470A	9/19/20 10:55	AHI	9/19/20 15:15	AHI	A
Selenium, Total	ND		mg/L	0.11	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:51	SRT	A1
Silver, Total	ND		mg/L	0.022	SW846 6010C	9/19/20 14:40	AHI	9/21/20 14:51	SRT	A1
TCLP EPA 1311 SEMI-VOLATILES										
mp-Cresol	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
o-Cresol	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
1,4-Dichlorobenzene	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790006** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1219-08082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2,4-Dinitrotoluene	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
Hexachlorobenzene	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
Hexachlorobutadiene	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
Hexachloroethane	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
Nitrobenzene	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
Pentachlorophenol	ND		ug/L	120	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
Pyridine	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
2,4,5-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
2,4,6-Trichlorophenol	ND		ug/L	60.0	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	31.6	10	%	47 - 128	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
2-Fluorobiphenyl (S)	72.7		%	52 - 118	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
2-Fluorophenol (S)	19.5	9	%	20 - 87	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
Nitrobenzene-d5 (S)	81.3		%	27 - 139	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
Phenol-d5 (S)	20.8		%	10 - 81	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
Terphenyl-d14 (S)	87.3		%	46 - 133	SW846 8270D	9/22/20 17:10	DXL	9/25/20 13:47	GEC	C
TCLP EPA 1311 PESTICIDES										
gamma-BHC	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:21	KJH	C
Chlordane	ND		ug/L	10.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:21	KJH	C
Endrin	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:21	KJH	C
Heptachlor	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:21	KJH	C
Heptachlor Epoxide	ND		ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:21	KJH	C
Methoxychlor	ND	4	ug/L	0.40	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:21	KJH	C
Toxaphene	ND		ug/L	20.0	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:21	KJH	C
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	21.1	5,6, 7,8	%	30 - 140	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:21	KJH	C
Tetrachloro-m-xylene (S)	52.2		%	30 - 123	SW846 8081B	9/22/20 07:50	MXL	9/23/20 17:21	KJH	C
TCLP EPA 1311 HERBICIDES										
2,4-D	ND		ug/L	20.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 20:10	BS	A
2,4,5-TP	ND		ug/L	4.0	SW846 8151A	9/24/20 16:20	DXL	9/25/20 20:10	BS	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4-Dichlorophenylacetic acid (S)	77.5		%	14 - 172	SW846 8151A	9/24/20 16:20	DXL	9/25/20 20:10	BS	A

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State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

Lab ID: **3128790006** Date Collected: 9/8/2020 00:00 Matrix: Solid

Sample ID: **SD-BC-1219-08082020** Date Received: 9/17/2020 08:35

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*

Ms. Sarah S Leung
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3128790001	1	SD-MS-09082020	SW-846 1010AM	Ignitability
Analyte was analyzed past the 14 day holding time.				
3128790001	2	SD-MS-09082020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3128790001	3	SD-MS-09082020	SW-846 1010AM	Ignitability
Sample did not flash up to 200°F				
3128790001	4	SD-MS-09082020	SW846 8081B	Decachlorobiphenyl
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This surrogate compound was biased low 30% in the bracketing CCV.				
3128790001	5	SD-MS-09082020	SW846 8081B	Decachlorobiphenyl
The surrogate Decachlorobiphenyl for method SW846 8081B was outside of control limits. The % Recovery was reported as 21.9 and the control limits were 30 to 140. This result was reported at a dilution of 1.				
3128790001	6	SD-MS-09082020	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
3128790002	1	SD-BC-1415-09082020	SW-846 1010AM	Ignitability
Analyte was analyzed past the 14 day holding time.				
3128790002	2	SD-BC-1415-09082020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3128790002	3	SD-BC-1415-09082020	SW-846 1010AM	Ignitability
Sample did not flash up to 200°F				
3128790002	4	SD-BC-1415-09082020	SW846 8081B	Decachlorobiphenyl
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This surrogate compound was biased low 30% in the bracketing CCV.				
3128790002	5	SD-BC-1415-09082020	SW846 8081B	Decachlorobiphenyl
The surrogate Decachlorobiphenyl for method SW846 8081B was outside of control limits. The % Recovery was reported as 24 and the control limits were 30 to 140. This result was reported at a dilution of 1.				
3128790002	6	SD-BC-1415-09082020	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
3128790003	1	SD-BC-1350 08082020	SW-846 1010AM	Ignitability
Analyte was analyzed past the 14 day holding time.				
3128790003	2	SD-BC-1350 08082020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3128790003	3	SD-BC-1350 08082020	SW-846 1010AM	Ignitability
Sample did not flash up to 200°F				
3128790003	4	SD-BC-1350 08082020	SW846 8081B	Decachlorobiphenyl
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This surrogate compound was biased low 30% in the bracketing CCV.				
3128790003	5	SD-BC-1350 08082020	SW846 8081B	Decachlorobiphenyl
The surrogate Decachlorobiphenyl for method SW846 8081B was outside of control limits. The % Recovery was reported as 12.9 and the control limits were 30 to 140. This result was reported at a dilution of 1.				

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

3128790003	6	SD-BC-1350 08082020	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
3128790004	1	SD-BC-1329-09082020	SW-846 1010AM	Ignitability
Analyte was analyzed past the 14 day holding time.				
3128790004	2	SD-BC-1329-09082020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3128790004	3	SD-BC-1329-09082020	SW-846 1010AM	Ignitability
Sample did not flash up to 200°F				
3128790004	4	SD-BC-1329-09082020	SW846 8081B	Decachlorobiphenyl
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This surrogate compound was biased low 30% in the bracketing CCV.				
3128790004	5	SD-BC-1329-09082020	SW846 8081B	Decachlorobiphenyl
The surrogate Decachlorobiphenyl for method SW846 8081B was outside of control limits. The % Recovery was reported as 26.7 and the control limits were 30 to 140. This result was reported at a dilution of 1.				
3128790004	6	SD-BC-1329-09082020	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
3128790005	1	SD-BC-1266-09082020	SW-846 1010AM	Ignitability
Analyte was analyzed past the 14 day holding time.				
3128790005	2	SD-BC-1266-09082020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3128790005	3	SD-BC-1266-09082020	SW-846 1010AM	Ignitability
Sample did not flash up to 200°F				
3128790005	4	SD-BC-1266-09082020	SW846 8081B	Decachlorobiphenyl
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This surrogate compound was biased low 30% in the bracketing CCV.				
3128790005	5	SD-BC-1266-09082020	SW846 8081B	Decachlorobiphenyl
The surrogate Decachlorobiphenyl for method SW846 8081B was outside of control limits. The % Recovery was reported as 14.1 and the control limits were 30 to 140. This result was reported at a dilution of 1.				
3128790005	6	SD-BC-1266-09082020	S2540G-11	Total Solids
WETC-103				
3128790006	1	SD-BC-1219-08082020	SW-846 1010AM	Ignitability
Analyte was analyzed past the 14 day holding time.				
3128790006	2	SD-BC-1219-08082020	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3128790006	3	SD-BC-1219-08082020	SW-846 1010AM	Ignitability
Sample did not flash up to 200°F				
3128790006	4	SD-BC-1219-08082020	SW846 8081B	Methoxychlor
The QC sample type MS for method SW846 8081B was outside the control limits for the analyte Methoxychlor. The % Recovery was reported as 55.1 and the control limits were 56 to 140.				
3128790006	5	SD-BC-1219-08082020	SW846 8081B	Decachlorobiphenyl
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This surrogate compound was biased low 30% in the bracketing CCV.				

ANALYTICAL RESULTS

Workorder: 3128790 R2008432

3128790006	6	SD-BC-1219-08082020	SW846 8081B	Decachlorobiphenyl

The surrogate Decachlorobiphenyl for method SW846 8081B was outside of control limits in the associated matrix spike (MS). The % Recovery was reported as 19.1 and the control limits were 30 to 140. This result was reported at a dilution of 1.

3128790006	7	SD-BC-1219-08082020	SW846 8081B	Decachlorobiphenyl

The surrogate Decachlorobiphenyl for method SW846 8081B was outside of control limits. The % Recovery was reported as 21.1 and the control limits were 30 to 140. This result was reported at a dilution of 1.

3128790006	8	SD-BC-1219-08082020	SW846 8081B	Decachlorobiphenyl

The surrogate Decachlorobiphenyl for method SW846 8081B was outside of control limits in the associated matrix spike duplicate (MSD). The % Recovery was reported as 19.5 and the control limits were 30 to 140. This result was reported at a dilution of 1.

3128790006	9	SD-BC-1219-08082020	SW846 8270D	2-Fluorophenol

The surrogate 2-Fluorophenol for method SW846 8270D was outside of control limits. The % Recovery was reported as 19.5 and the control limits were 20 to 87. This result was reported at a dilution of 1.

3128790006	10	SD-BC-1219-08082020	SW846 8270D	2,4,6-Tribromophenol

The surrogate 2,4,6-Tribromophenol for method SW846 8270D was outside of control limits. The % Recovery was reported as 31.6 and the control limits were 47 to 128. This result was reported at a dilution of 1.

3128790006	11	SD-BC-1219-08082020	S2540G-11	Total Solids

Analyte was analyzed past the 7 day holding time.

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3128790 R2008432

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3128790001	SD-MS-09082020	S2540G-11		
3128790001	SD-MS-09082020	SW-846 1010AM		
3128790001	SD-MS-09082020	SW-846 7.3CN	SW-846 7.3CN	
3128790001	SD-MS-09082020	SW846 6010C	SW846 3015	SW846 1311
3128790001	SD-MS-09082020	SW846 7.3	SW846 7.3	
3128790001	SD-MS-09082020	SW846 7470A	SW846 7470A	SW846 1311
3128790001	SD-MS-09082020	SW846 8081B	SW846 3510C	SW846 1311
3128790001	SD-MS-09082020	SW846 8151A	SW846 8151A	SW846 1311
3128790001	SD-MS-09082020	SW846 8260C		SW846 1311
3128790001	SD-MS-09082020	SW846 8270D	SW846 3510C	SW846 1311
3128790002	SD-BC-1415-09082020	S2540G-11		
3128790002	SD-BC-1415-09082020	SW-846 1010AM		
3128790002	SD-BC-1415-09082020	SW-846 7.3CN	SW-846 7.3CN	
3128790002	SD-BC-1415-09082020	SW846 6010C	SW846 3015	SW846 1311
3128790002	SD-BC-1415-09082020	SW846 7.3	SW846 7.3	
3128790002	SD-BC-1415-09082020	SW846 7470A	SW846 7470A	SW846 1311
3128790002	SD-BC-1415-09082020	SW846 8081B	SW846 3510C	SW846 1311
3128790002	SD-BC-1415-09082020	SW846 8151A	SW846 8151A	SW846 1311
3128790002	SD-BC-1415-09082020	SW846 8260C		SW846 1311
3128790002	SD-BC-1415-09082020	SW846 8270D	SW846 3510C	SW846 1311
3128790003	SD-BC-1350 08082020	S2540G-11		
3128790003	SD-BC-1350 08082020	SW-846 1010AM		
3128790003	SD-BC-1350 08082020	SW-846 7.3CN	SW-846 7.3CN	
3128790003	SD-BC-1350 08082020	SW846 6010C	SW846 3015	SW846 1311
3128790003	SD-BC-1350 08082020	SW846 7.3	SW846 7.3	
3128790003	SD-BC-1350 08082020	SW846 7470A	SW846 7470A	SW846 1311
3128790003	SD-BC-1350 08082020	SW846 8081B	SW846 3510C	SW846 1311
3128790003	SD-BC-1350 08082020	SW846 8151A	SW846 8151A	SW846 1311
3128790003	SD-BC-1350 08082020	SW846 8260C		SW846 1311
3128790003	SD-BC-1350 08082020	SW846 8270D	SW846 3510C	SW846 1311
3128790004	SD-BC-1329-09082020	S2540G-11		
3128790004	SD-BC-1329-09082020	SW-846 1010AM		
3128790004	SD-BC-1329-09082020	SW-846 7.3CN	SW-846 7.3CN	
3128790004	SD-BC-1329-09082020	SW846 6010C	SW846 3015	SW846 1311
3128790004	SD-BC-1329-09082020	SW846 7.3	SW846 7.3	
3128790004	SD-BC-1329-09082020	SW846 7470A	SW846 7470A	SW846 1311
3128790004	SD-BC-1329-09082020	SW846 8081B	SW846 3510C	SW846 1311
3128790004	SD-BC-1329-09082020	SW846 8151A	SW846 8151A	SW846 1311
3128790004	SD-BC-1329-09082020	SW846 8260C		SW846 1311
3128790004	SD-BC-1329-09082020	SW846 8270D	SW846 3510C	SW846 1311
3128790005	SD-BC-1266-09082020	S2540G-11		
3128790005	SD-BC-1266-09082020	SW-846 1010AM		
3128790005	SD-BC-1266-09082020	SW-846 7.3CN	SW-846 7.3CN	
3128790005	SD-BC-1266-09082020	SW846 6010C	SW846 3015	SW846 1311
3128790005	SD-BC-1266-09082020	SW846 7.3	SW846 7.3	
3128790005	SD-BC-1266-09082020	SW846 7470A	SW846 7470A	SW846 1311

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3128790 R2008432

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3128790005	SD-BC-1266-09082020	SW846 8081B	SW846 3510C	SW846 1311
3128790005	SD-BC-1266-09082020	SW846 8151A	SW846 8151A	SW846 1311
3128790005	SD-BC-1266-09082020	SW846 8260C		SW846 1311
3128790005	SD-BC-1266-09082020	SW846 8270D	SW846 3510C	SW846 1311
3128790006	SD-BC-1219-08082020	S2540G-11		
3128790006	SD-BC-1219-08082020	SW-846 1010AM		
3128790006	SD-BC-1219-08082020	SW-846 7.3CN	SW-846 7.3CN	
3128790006	SD-BC-1219-08082020	SW846 6010C	SW846 3015	SW846 1311
3128790006	SD-BC-1219-08082020	SW846 7.3	SW846 7.3	
3128790006	SD-BC-1219-08082020	SW846 7470A	SW846 7470A	SW846 1311
3128790006	SD-BC-1219-08082020	SW846 8081B	SW846 3510C	SW846 1311
3128790006	SD-BC-1219-08082020	SW846 8151A	SW846 8151A	SW846 1311
3128790006	SD-BC-1219-08082020	SW846 8260C		SW846 1311
3128790006	SD-BC-1219-08082020	SW846 8270D	SW846 3510C	SW846 1311

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: EXTR/61916 **Analysis Method:** SW846 8270D

QC Batch Method: SW846 3510C

Associated Lab Samples: 3128790001, 3128790002, 3128790003, 3128790004, 3128790005

METHOD BLANK: 3201744

Parameter	Blank Result	Units	Reporting Limit
mp-Cresol	ND	ug/L	12.0
o-Cresol	ND	ug/L	12.0
1,4-Dichlorobenzene	ND	ug/L	12.0
2,4-Dinitrotoluene	ND	ug/L	12.0
Hexachlorobenzene	ND	ug/L	12.0
Hexachlorobutadiene	ND	ug/L	12.0
Hexachloroethane	ND	ug/L	12.0
Nitrobenzene	ND	ug/L	12.0
Pentachlorophenol	ND	ug/L	24.0
Pyridine	ND	ug/L	12.0
2,4,5-Trichlorophenol	ND	ug/L	12.0
2,4,6-Trichlorophenol	ND	ug/L	12.0
2,4,6-Tribromophenol (S)	83	%	47 - 128
2-Fluorobiphenyl (S)	64	%	52 - 118
2-Fluorophenol (S)	67	%	20 - 87
Nitrobenzene-d5 (S)	81.8	%	27 - 139
Phenol-d5 (S)	46.4	%	10 - 81
Terphenyl-d14 (S)	56.4	%	46 - 133

LABORATORY CONTROL SAMPLE: 3201745

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
mp-Cresol	71.1	ug/L	400	284	28 - 128
o-Cresol	76.5	ug/L	400	306	34 - 136
1,4-Dichlorobenzene	41.7	ug/L	200	83.4	5 - 116
2,4-Dinitrotoluene	90.2	ug/L	200	180	49 - 138
Hexachlorobenzene	74.1	ug/L	200	148	59 - 109
Hexachlorobutadiene	42.7	ug/L	200	85.4	5 - 126
Hexachloroethane	37.9	ug/L	200	75.8	5 - 111
Nitrobenzene	77.9	ug/L	200	156	41 - 128
Pentachlorophenol	87.7	ug/L	400	351	41 - 149
Pyridine	21.2	ug/L	200	42.5	5 - 115
2,4,5-Trichlorophenol	82.8	ug/L	400	331	44 - 148
2,4,6-Trichlorophenol	82.7	ug/L	400	331	41 - 148
2,4,6-Tribromophenol (S)	80.7	%			47 - 128

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

2-Fluorobiphenyl (S)	65.1	%	52 - 118
2-Fluorophenol (S)	63.3	%	20 - 87
Nitrobenzene-d5 (S)	75.5	%	27 - 139
Phenol-d5 (S)	45	%	10 - 81
Terphenyl-d14 (S)	69.9	%	46 - 133

MATRIX SPIKE: 3201746 DUPLICATE: 3201747 ORIGINAL: 3128717001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
mp-Cresol	0	ug/L	2000	1290.91	1463	64.5	73.2	28 - 128	12.5	20
o-Cresol	0	ug/L	2000	1426.7	1548.97	71.3	77.4	34 - 136	8.22	23
1,4-Dichlorobenzene	0	ug/L	1000	498.88	552.38	49.9	55.2	5 - 116	10.2	30
2,4-Dinitrotoluene	0	ug/L	1000	910.211	969.771	91	97	49 - 138	6.34	22
Hexachlorobenzene	0	ug/L	1000	722.76	756.462	72.3	75.6	59 - 109	4.56	21
Hexachlorobutadiene	0	ug/L	1000	501.268	534.403	50.1	53.4	5 - 126	6.4	30
Hexachloroethane	0	ug/L	1000	471.863	511.535	47.2	51.2	5 - 111	8.07	30
Nitrobenzene	0	ug/L	1000	808.079	849.212	80.8	84.9	41 - 128	4.96	19
Pentachlorophenol	0	ug/L	2000	1831.92	1914.68	91.6	95.7	41 - 149	4.42	28
Pyridine	0	ug/L	1000	246.74	267.415	24.7	26.7	5 - 115	8.04	30
2,4,5-Trichlorophenol	0	ug/L	2000	1673.11	1759.24	83.7	88	44 - 148	5.02	23
2,4,6-Trichlorophenol	0	ug/L	2000	1686.43	1722.79	84.3	86.1	41 - 148	2.13	23
2,4,6-Tribromophenol (S)	80.6	%				80.6	84.4	47 - 128		
2-Fluorobiphenyl (S)	70.2	%				70.2	75.4	52 - 118		
2-Fluorophenol (S)	57.7	%				57.7	63.1	20 - 87		
Nitrobenzene-d5 (S)	79.5	%				79.5	83.7	27 - 139		
Phenol-d5 (S)	37.7	%				37.7	41.6	10 - 81		
Terphenyl-d14 (S)	45.9	%				45.9*	48.4	46 - 133		

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QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: EXTR/61927 **Analysis Method:** SW846 8081B

QC Batch Method: SW846 3510C

Associated Lab Samples: 3128790001, 3128790002, 3128790003, 3128790004, 3128790005, 3128790006

METHOD BLANK: 3202359

Parameter	Blank Result	Units	Reporting Limit
gamma-BHC	ND	ug/L	0.080
Chlordane	ND	ug/L	2.0
Endrin	ND	ug/L	0.080
Heptachlor	ND	ug/L	0.080
Heptachlor Epoxide	ND	ug/L	0.080
Methoxychlor	ND	ug/L	0.080
Toxaphene	ND	ug/L	4.0
Decachlorobiphenyl (S)	42.8	%	30 - 140
Tetrachloro-m-xylene (S)	41.1	%	30 - 123

LABORATORY CONTROL SAMPLE: 3202360

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
gamma-BHC	101	ug/L	2	2.0	58 - 138
Chlordane		ug/L		ND	
Endrin	100	ug/L	2	2.0	58 - 143
Heptachlor	57.9	ug/L	2	1.2	41 - 124
Heptachlor Epoxide	92	ug/L	2	1.8	62 - 131
Methoxychlor	85.7	ug/L	2	1.7	56 - 140
Toxaphene		ug/L		ND	
Decachlorobiphenyl (S)	51.6	%			30 - 140
Tetrachloro-m-xylene (S)	40.6	%			30 - 123

MATRIX SPIKE: 3202361 DUPLICATE: 3202362 ORIGINAL: 3128790006

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
gamma-BHC	0	ug/L	10	9.2138	10.4476	92.1	104	58 - 138	12.6	30
Endrin	0	ug/L	10	8.5855	9.345	85.9	93.5	58 - 143	8.47	28
Heptachlor	0	ug/L	10	5.9469	6.4489	59.5	64.5	41 - 124	8.1	28
Heptachlor Epoxide	0	ug/L	10	8.2197	9.0916	82.2	90.9	62 - 131	10.1	27
Methoxychlor	0	ug/L	10	5.5137	5.6543	55.1*	56.5	56 - 140	2.52	21

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

Decachlorobiphenyl (S)	19.1	%	19.1*	19.5*	30 - 140
Tetrachloro-m-xylene (S)	53.6	%	53.6	57.8	30 - 123

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: EXTR/61937 **Analysis Method:** SW846 8270D

QC Batch Method: SW846 3510C

Associated Lab Samples: 3128790006

METHOD BLANK: 3202783

Parameter	Blank Result	Units	Reporting Limit
mp-Cresol	ND	ug/L	3.0
o-Cresol	ND	ug/L	3.0
1,4-Dichlorobenzene	ND	ug/L	3.0
2,4-Dinitrotoluene	ND	ug/L	3.0
Hexachlorobenzene	ND	ug/L	3.0
Hexachlorobutadiene	ND	ug/L	3.0
Hexachloroethane	ND	ug/L	3.0
Nitrobenzene	ND	ug/L	3.0
Pentachlorophenol	ND	ug/L	6.0
Pyridine	ND	ug/L	3.0
2,4,5-Trichlorophenol	ND	ug/L	3.0
2,4,6-Trichlorophenol	ND	ug/L	3.0
2,4,6-Tribromophenol (S)	82.3	%	47 - 128
2-Fluorobiphenyl (S)	64.2	%	52 - 118
2-Fluorophenol (S)	55.8	%	20 - 87
Nitrobenzene-d5 (S)	82.3	%	27 - 139
Phenol-d5 (S)	36.6	%	10 - 81
Terphenyl-d14 (S)	86	%	46 - 133

LABORATORY CONTROL SAMPLE: 3202784

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
mp-Cresol	72.9	ug/L	100	72.9	28 - 128
o-Cresol	79	ug/L	100	79.0	34 - 136
1,4-Dichlorobenzene	47	ug/L	50	23.5	5 - 116
2,4-Dinitrotoluene	89.2	ug/L	50	44.6	49 - 138
Hexachlorobenzene	72.3	ug/L	50	36.1	59 - 109
Hexachlorobutadiene	50.3	ug/L	50	25.2	5 - 126
Hexachloroethane	44.3	ug/L	50	22.2	5 - 111
Nitrobenzene	78.2	ug/L	50	39.1	41 - 128
Pentachlorophenol	86.6	ug/L	100	86.6	41 - 149
Pyridine	56.7	ug/L	50	28.4	5 - 115
2,4,5-Trichlorophenol	84.1	ug/L	100	84.1	44 - 148
2,4,6-Trichlorophenol	80.1	ug/L	100	80.1	41 - 148
2,4,6-Tribromophenol (S)	86.7	%			47 - 128

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

2-Fluorobiphenyl (S)	73.3	%	52 - 118
2-Fluorophenol (S)	59.4	%	20 - 87
Nitrobenzene-d5 (S)	82.8	%	27 - 139
Phenol-d5 (S)	38.9	%	10 - 81
Terphenyl-d14 (S)	86	%	46 - 133

MATRIX SPIKE: 3202785 DUPLICATE: 3202786 ORIGINAL: 3129209003

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
mp-Cresol	0	ug/L	2000	1525.04	1550.33	76.3	77.5	28 - 128	1.64	20
o-Cresol	0	ug/L	2000	1627.3	1696.44	81.4	84.8	34 - 136	4.16	23
1,4-Dichlorobenzene	0	ug/L	1000	463.178	489.187	46.3	48.9	5 - 116	5.46	30
2,4-Dinitrotoluene	0	ug/L	1000	870.84	944.245	87.1	94.4	49 - 138	8.09	22
Hexachlorobenzene	0	ug/L	1000	746.022	778.689	74.6	77.9	59 - 109	4.29	21
Hexachlorobutadiene	0	ug/L	1000	507.916	534.678	50.8	53.5	5 - 126	5.13	30
Hexachloroethane	0	ug/L	1000	436.335	456.529	43.6	45.7	5 - 111	4.52	30
Nitrobenzene	0	ug/L	1000	786.652	820.354	78.7	82	41 - 128	4.19	19
Pentachlorophenol	0	ug/L	2000	1771.53	1382	88.6	69.1	41 - 149	24.7	28
Pyridine	0	ug/L	1000	593.365	605.264	59.3	60.5	5 - 115	1.99	30
2,4,5-Trichlorophenol	0	ug/L	2000	1735.33	1580.18	86.8	79	44 - 148	9.36	23
2,4,6-Trichlorophenol	0	ug/L	2000	1641.75	1445.9	82.1	72.3	41 - 148	12.7	23
2,4,6-Tribromophenol (S)	88.7	%				88.7	81.7	47 - 128		
2-Fluorobiphenyl (S)	75	%				75	79.1	52 - 118		
2-Fluorophenol (S)	64	%				64	56.1	20 - 87		
Nitrobenzene-d5 (S)	85.7	%				85.7	88	27 - 139		
Phenol-d5 (S)	43.6	%				43.6	40.8	10 - 81		
Terphenyl-d14 (S)	85.9	%				85.9	88.4	46 - 133		

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: EXTR/61981 **Analysis Method:** SW846 8151A

QC Batch Method: SW846 8151A

Associated Lab Samples: 3128790001, 3128790002, 3128790003, 3128790004, 3128790005, 3128790006

METHOD BLANK: 3204642

Parameter	Blank Result	Units	Reporting Limit
2,4-D	ND	ug/L	1.0
2,4,5-TP	ND	ug/L	0.20
2,4-Dichlorophenylacetic acid (S)	90.1	%	14 - 172

LABORATORY CONTROL SAMPLE: 3204643

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
2,4-D	81	ug/L	2	1.6	56 - 156
2,4,5-TP	81.3	ug/L	2	1.6	58 - 123
2,4-Dichlorophenylacetic acid (S)	86.7	%			14 - 172

MATRIX SPIKE: 3204644 DUPLICATE: 3204645 ORIGINAL: 3128790002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
2,4-D	0	ug/L	40	30.7196	36.5164	76.8	91.3	56 - 156	17.2	17
2,4,5-TP	0	ug/L	40	33.3877	37.1965	83.5	93	58 - 123	10.8	16
2,4-Dichlorophenylacetic acid (S)	86.1	%				86.1	92.1	14 - 172		

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: MDIG/85803 **Analysis Method:** SW846 7470A

QC Batch Method: SW846 7470A

Associated Lab Samples: 3128790001, 3128790002, 3128790003, 3128790004, 3128790005, 3128790006

METHOD BLANK: 3201424

Parameter	Blank Result	Units	Reporting Limit
Mercury, Total	ND	mg/L	0.0020

LABORATORY CONTROL SAMPLE: 3201425

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Mercury, Total	95.5	mg/L	.002	ND	85 - 115

MATRIX SPIKE: 3201426 DUPLICATE: 3201427 ORIGINAL: 3128790005

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Mercury, Total	0	mg/L	.005	.00558	.00581	112	116	70 - 130	4.04	20

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: MDIG/85806 **Analysis Method:** SW846 6010C

QC Batch Method: SW846 3015

Associated Lab Samples: 3128790001, 3128790002, 3128790003, 3128790004, 3128790005, 3128790006

METHOD BLANK: 3201433

Parameter	Blank Result	Units	Reporting Limit
Arsenic, Total	ND	mg/L	0.028
Barium, Total	ND	mg/L	0.56
Cadmium, Total	ND	mg/L	0.0022
Chromium, Total	ND	mg/L	0.0056
Lead, Total	ND	mg/L	0.0067
Selenium, Total	ND	mg/L	0.022
Silver, Total	ND	mg/L	0.0044

LABORATORY CONTROL SAMPLE: 3201434

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Arsenic, Total	106	mg/L	.11	0.12	80 - 120
Barium, Total	105	mg/L	1.1	1.2	80 - 120
Cadmium, Total	105	mg/L	.11	0.12	80 - 120
Chromium, Total	103	mg/L	.11	0.11	80 - 120
Lead, Total	105	mg/L	.11	0.12	80 - 120
Selenium, Total	106	mg/L	1.1	1.2	80 - 120
Silver, Total	101	mg/L	.11	0.11	80 - 120

MATRIX SPIKE: 3201435 DUPLICATE: 3201436 ORIGINAL: 3128790001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Arsenic, Total	.00222	mg/L	.11	.12444	.125	110	110	50 - 150	.45	20
Barium, Total	.37777	mg/L	1.1	1.64332	1.63998	114	114	50 - 150	.2	20
Cadmium, Total	.01556	mg/L	.11	.145	.14555	116	117	50 - 150	.38	20
Chromium, Total	.00611	mg/L	.11	.13222	.13555	113	116	50 - 150	2.49	20
Lead, Total	.02167	mg/L	.11	.15889	.14389	123	110	50 - 150	9.91	20
Selenium, Total	.01556	mg/L	1.1	1.30554	1.30888	116	116	50 - 150	.25	20
Silver, Total	0	mg/L	.11	.12055	.11944	108	107	50 - 150	.93	20

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: VOMS/56488 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 3128790001, 3128790002, 3128790003, 3128790004, 3128790005, 3128790006

METHOD BLANK: 3202638

Parameter	Blank Result	Units	Reporting Limit
Benzene	ND	ug/L	1.0
2-Butanone	ND	ug/L	10.0
Carbon Tetrachloride	ND	ug/L	1.0
Chlorobenzene	ND	ug/L	1.0
Chloroform	ND	ug/L	1.0
1,2-Dichloroethane	ND	ug/L	1.0
1,1-Dichloroethene	ND	ug/L	1.0
Tetrachloroethene	ND	ug/L	1.0
Trichloroethene	ND	ug/L	1.0
Vinyl Chloride	ND	ug/L	1.0
1,2-Dichloroethane-d4 (S)	107	%	62 - 133
4-Bromofluorobenzene (S)	90	%	79 - 114
Dibromofluoromethane (S)	99.2	%	78 - 116
Toluene-d8 (S)	99.8	%	76 - 127

LABORATORY CONTROL SAMPLE: 3202639

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Benzene	109	ug/L	20	21.8	80 - 124
2-Butanone	117	ug/L	100	117	50 - 152
Carbon Tetrachloride	107	ug/L	20	21.3	62 - 132
Chlorobenzene	97.8	ug/L	20	19.6	85 - 117
Chloroform	106	ug/L	20	21.1	78 - 122
1,2-Dichloroethane	110	ug/L	20	22.0	70 - 133
1,1-Dichloroethene	106	ug/L	20	21.2	63 - 128
Tetrachloroethene	99.7	ug/L	20	19.9	72 - 124
Trichloroethene	109	ug/L	20	21.9	77 - 124
Vinyl Chloride	102	ug/L	20	20.4	27 - 138
1,2-Dichloroethane-d4 (S)	108	%			62 - 133
4-Bromofluorobenzene (S)	89.6	%			79 - 114
Dibromofluoromethane (S)	101	%			78 - 116
Toluene-d8 (S)	94	%			76 - 127

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

MATRIX SPIKE: 3202726 DUPLICATE: 3202727 ORIGINAL: 3129470001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Benzene	0	ug/L	400	475.531	464.856	119	116	80 - 124	2.27	26
2-Butanone	177.266	ug/L	2000	2667.34	2805.35	125	131	50 - 152	5.04	16
Carbon Tetrachloride	0	ug/L	400	469.217	461.252	117	115	62 - 132	1.71	17
Chlorobenzene	0	ug/L	400	405.683	395.289	101	98.8	85 - 117	2.6	15
Chloroform	5.58835	ug/L	400	472.823	464.424	117	115	78 - 122	1.79	16
1,2-Dichloroethane	0	ug/L	400	474.989	465.786	119	116	70 - 133	1.96	19
1,1-Dichloroethene	0	ug/L	400	481.557	488.903	120	122	63 - 128	1.51	21
Tetrachloroethene	0	ug/L	400	419.417	408.615	105	102	72 - 124	2.61	38
Trichloroethene	0	ug/L	400	477.555	469.479	119	117	77 - 124	1.71	18
Vinyl Chloride	0	ug/L	400	461.03	422.631	115	106	27 - 138	8.69	40
1,2-Dichloroethane-d4 (S)	112	%				112	112	62 - 133		
4-Bromofluorobenzene (S)	87.3	%				87.3	87.3	79 - 114		
Dibromofluoromethane (S)	103	%				103	105	78 - 116		
Toluene-d8 (S)	93.8	%				93.8	94.8	76 - 127		

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: WCPR/52438 **Analysis Method:** SW-846 7.3CN

QC Batch Method: SW-846 7.3CN

Associated Lab Samples: 3128790001, 3128790002, 3128790003, 3128790004, 3128790005, 3128790006

METHOD BLANK: 3202803

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/kg	10

LABORATORY CONTROL SAMPLE: 3202804

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Cyanide, Reactive	4.5	mg/kg	10	ND	0 - 92

SAMPLE DUPLICATE: 3202805 ORIGINAL: 3129624001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Cyanide, Reactive	.00498	mg/kg	.00499	.15	20

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: WCPR/52439 **Analysis Method:** SW846 7.3

QC Batch Method: SW846 7.3

Associated Lab Samples: 3128790001, 3128790002, 3128790003, 3128790004, 3128790005, 3128790006

METHOD BLANK: 3202811

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.2

LABORATORY CONTROL SAMPLE: 3202812

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Sulfide, Reactive	70.9	mg/kg	565	401	49 - 148

SAMPLE DUPLICATE: 3202813 ORIGINAL: 3129624001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Sulfide, Reactive	2.38925	mg/kg	5.58325	80.1*	20

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: WETC/244236 **Analysis Method:** S2540G-11

QC Batch Method: S2540G-11

Associated Lab Samples: 3128790001, 3128790002, 3128790003, 3128790004, 3128790005, 3128790006

SAMPLE DUPLICATE: 3200699 ORIGINAL: 3128717001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	97.9286	%	97.9513	.02	10
Total Solids	2.0713	%	2.0486	1.1	5

SAMPLE DUPLICATE: 3200700 ORIGINAL: 3128772004

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	15.1992	%	16.902	10.6*	10
Total Solids	84.8007	%	83.0979	2.03	5

SAMPLE DUPLICATE: 3200701 ORIGINAL: 3128796001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	97.9345	%	97.9803	.05	10
Total Solids	2.0654	%	2.0196	2.24	5

SAMPLE DUPLICATE: 3200702 ORIGINAL: 3128949001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	16.2711	%	14.3012	12.9*	10
Total Solids	83.7288	%	85.6987	2.33	5

SAMPLE DUPLICATE: 3200703 ORIGINAL: 3128949011

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	12.7572	%	12.8164	.46	10
Total Solids	87.2427	%	87.1835	.07	5

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

SAMPLE DUPLICATE: 3200704 ORIGINAL: 3128979001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	2.7916	%	2.5115	10.6*	10
Total Solids	97.2083	%	97.4884	.29	5

SAMPLE DUPLICATE: 3200705 ORIGINAL: 3128986002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	3.1979	%	2.9503	8.05	10
Total Solids	96.802	%	97.0496	.26	5

QUALITY CONTROL DATA

Workorder: 3128790 R2008432

QC Batch: WETC/244420 **Analysis Method:** SW846 7.3

QC Batch Method: SW846 7.3

Associated Lab Samples:

METHOD BLANK: 3202890

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

METHOD BLANK: 3202892

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

METHOD BLANK: 3202894

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 3128790 R2008432

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
3128790001	SD-MS-09082020			S2540G-11	WETC/244236
3128790002	SD-BC-1415-09082020			S2540G-11	WETC/244236
3128790003	SD-BC-1350 08082020			S2540G-11	WETC/244236
3128790004	SD-BC-1329-09082020			S2540G-11	WETC/244236
3128790005	SD-BC-1266-09082020			S2540G-11	WETC/244236
3128790006	SD-BC-1219-08082020			S2540G-11	WETC/244236
3128790001	SD-MS-09082020	SW846 7470A	MDIG/85803	SW846 7470A	META/76342
3128790002	SD-BC-1415-09082020	SW846 7470A	MDIG/85803	SW846 7470A	META/76342
3128790003	SD-BC-1350 08082020	SW846 7470A	MDIG/85803	SW846 7470A	META/76342
3128790004	SD-BC-1329-09082020	SW846 7470A	MDIG/85803	SW846 7470A	META/76342
3128790005	SD-BC-1266-09082020	SW846 7470A	MDIG/85803	SW846 7470A	META/76342
3128790006	SD-BC-1219-08082020	SW846 7470A	MDIG/85803	SW846 7470A	META/76342
3128790001	SD-MS-09082020	SW846 3015	MDIG/85806	SW846 6010C	META/76363
3128790002	SD-BC-1415-09082020	SW846 3015	MDIG/85806	SW846 6010C	META/76363
3128790003	SD-BC-1350 08082020	SW846 3015	MDIG/85806	SW846 6010C	META/76363
3128790004	SD-BC-1329-09082020	SW846 3015	MDIG/85806	SW846 6010C	META/76363
3128790005	SD-BC-1266-09082020	SW846 3015	MDIG/85806	SW846 6010C	META/76363
3128790006	SD-BC-1219-08082020	SW846 3015	MDIG/85806	SW846 6010C	META/76363
3128790001	SD-MS-09082020	SW846 3510C	EXTR/61916	SW846 8270D	SVMS/36820
3128790002	SD-BC-1415-09082020	SW846 3510C	EXTR/61916	SW846 8270D	SVMS/36820
3128790003	SD-BC-1350 08082020	SW846 3510C	EXTR/61916	SW846 8270D	SVMS/36820
3128790004	SD-BC-1329-09082020	SW846 3510C	EXTR/61916	SW846 8270D	SVMS/36820
3128790005	SD-BC-1266-09082020	SW846 3510C	EXTR/61916	SW846 8270D	SVMS/36820
3128790001	SD-MS-09082020	SW846 3510C	EXTR/61927	SW846 8081B	SVGC/58295
3128790002	SD-BC-1415-09082020	SW846 3510C	EXTR/61927	SW846 8081B	SVGC/58295
3128790003	SD-BC-1350 08082020	SW846 3510C	EXTR/61927	SW846 8081B	SVGC/58295
3128790004	SD-BC-1329-09082020	SW846 3510C	EXTR/61927	SW846 8081B	SVGC/58295
3128790005	SD-BC-1266-09082020	SW846 3510C	EXTR/61927	SW846 8081B	SVGC/58295

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 3128790 R2008432

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
3128790006	SD-BC-1219-08082020	SW846 3510C	EXTR/61927	SW846 8081B	SVGC/58295
3128790001	SD-MS-09082020			SW846 8260C	VOMS/56488
3128790002	SD-BC-1415-09082020			SW846 8260C	VOMS/56488
3128790003	SD-BC-1350 08082020			SW846 8260C	VOMS/56488
3128790004	SD-BC-1329-09082020			SW846 8260C	VOMS/56488
3128790005	SD-BC-1266-09082020			SW846 8260C	VOMS/56488
3128790006	SD-BC-1219-08082020			SW846 8260C	VOMS/56488
3128790006	SD-BC-1219-08082020	SW846 3510C	EXTR/61937	SW846 8270D	SVMS/36850
3128790001	SD-MS-09082020	SW-846 7.3CN	WCPR/52438	SW-846 7.3CN	WETC/244480
3128790002	SD-BC-1415-09082020	SW-846 7.3CN	WCPR/52438	SW-846 7.3CN	WETC/244480
3128790003	SD-BC-1350 08082020	SW-846 7.3CN	WCPR/52438	SW-846 7.3CN	WETC/244480
3128790004	SD-BC-1329-09082020	SW-846 7.3CN	WCPR/52438	SW-846 7.3CN	WETC/244480
3128790005	SD-BC-1266-09082020	SW-846 7.3CN	WCPR/52438	SW-846 7.3CN	WETC/244480
3128790006	SD-BC-1219-08082020	SW-846 7.3CN	WCPR/52438	SW-846 7.3CN	WETC/244480
3128790001	SD-MS-09082020	SW846 7.3	WCPR/52439	SW846 7.3	WETC/244420
3128790002	SD-BC-1415-09082020	SW846 7.3	WCPR/52439	SW846 7.3	WETC/244420
3128790003	SD-BC-1350 08082020	SW846 7.3	WCPR/52439	SW846 7.3	WETC/244420
3128790004	SD-BC-1329-09082020	SW846 7.3	WCPR/52439	SW846 7.3	WETC/244420
3128790005	SD-BC-1266-09082020	SW846 7.3	WCPR/52439	SW846 7.3	WETC/244420
3128790006	SD-BC-1219-08082020	SW846 7.3	WCPR/52439	SW846 7.3	WETC/244420
3128790001	SD-MS-09082020	SW846 8151A	EXTR/61981	SW846 8151A	SVGC/58331
3128790002	SD-BC-1415-09082020	SW846 8151A	EXTR/61981	SW846 8151A	SVGC/58331
3128790003	SD-BC-1350 08082020	SW846 8151A	EXTR/61981	SW846 8151A	SVGC/58331
3128790004	SD-BC-1329-09082020	SW846 8151A	EXTR/61981	SW846 8151A	SVGC/58331
3128790005	SD-BC-1266-09082020	SW846 8151A	EXTR/61981	SW846 8151A	SVGC/58331
3128790006	SD-BC-1219-08082020	SW846 8151A	EXTR/61981	SW846 8151A	SVGC/58331

ALS Environmental Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

AL

Project Number: R2008432
Project Manager: Meghan Pedro
QAP: LAB QAP

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	Ag TCLP 6010C	As TCLP 6010C	Ba TCLP 6010C	Cd TCLP 6010C	CN React 9014	Cr TCLP 6010C	Flash 1010A Modifie	HERB_TCLP 8151A	Hg TCLP 7470A
~~R2008432-001~~	SD-MS-09082020	3	Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X	X
~~R2008432-002~~	SD-BC-1415-09082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X	X
~~R2008432-003~~	SD-BC-1350 08082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X	X
~~R2008432-004~~	SD-BC-1329-09082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X	X
~~R2008432-005~~	SD-BC-1266-09082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X	X
~~R2008432-006~~	SD-BC-1219-08082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X	X

Special Instructions/Comments

4° 401

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements

____ **RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

X **STANDARD**

Requested FAX Date: _____

Requested Report Date: 10/01/20

Report Requirements

____ I. Results Only

X II. Results + QC Summaries

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

PQL/MDL/J N

EDD N

Invoice Information

PO# 58R2008432

Bill to

Relinquished By: [signature] 9/16/2020 1315 Received By: Fedex

Fedex 9/17/20 0835 [signature] 9/17/20 0835

~~Airbill Number~~: Kieth Adderley

R2008432-001	SD-MS-09082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X
R2008432-002	SD-BC-1415-09082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X
R2008432-003	SD-BC-1350 08082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X
R2008432-004	SD-BC-1329-09082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X
R2008432-005	SD-BC-1266-09082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X
R2008432-006	SD-BC-1219-08082020		Soil	9/8/20		Middletown ALS	X	X	X	X	X	X	X	X

Pb TCLP 6010C	Pest OC TCLP 8081B	pH 9045D	Se TCLP 6010C	Sulfide React 9034 Modified	SVO TCLP 8270D	VOC TCLP 8260C

R2008432

____ **Ship To: Middletown ALS**
ALS Environmental - Middletown
301 Fulling Mill Rd.
Middletown, PA 17057

PC _____ Date _____

SMO _____ Date _____

Instructions:

Ice _____

Dry Ice _____

No Ice _____

Shipping:

Overnight _____

2nd Day _____

Ground _____

Bill to Client Account _____

Comments:

301 Fulling Mill Road
Middletown, PA 17057
P: (717) 944-5541
F: (717) 944-1430

Condition of Sample Receipt Form

Client: ALS Rochester | Work Order #: 3128790 | Initials: SEC | Date: 9/17/20

1. Were airbills / tracking numbers present and recorded?	NONE	(YES)	NO
Tracking number: 1730 2432 1016			
2. Are Custody Seals on shipping containers intact?	NONE	(YES)	NO
3. Are Custody Seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present?		(YES)	NO
5. Are the COC and bottle labels complete, legible and in agreement?		YES	(NO)
5a. Does the COC contain sample locations?		(YES)	NO
5b. Does the COC contain date and time of sample collection for all samples?		(YES)	NO
5c. Does the COC contain sample collectors name?		YES	(NO)
5d. Does the COC note the type(s) of preservation for all bottles?		YES	(NO)
5e. Does the COC note the number of bottles submitted for each sample?		(YES)	NO
5f. Does the COC note the type of sample, composite or grab?		YES	(NO)
5g. Does the COC note the matrix of the sample(s)?		(YES)	NO
6. Are all aqueous samples requiring preservation preserved correctly?[1]	(N/A)	YES	NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?		(YES)	NO
8. Are all samples within holding times for the requested analyses?		(YES)	NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)		(YES)	NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?	(N/A)	YES	NO
11. Were the samples received on ice?		(YES)	NO
12. Were sample temperatures measured at 0.0-6.0°C		(YES)	NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below		YES	(NO)
13a. Are the samples required for SDWA compliance reporting?	N/A	YES	NO
13b. Did the client provide a SDWA PWS ID#?	N/A	YES	NO
13c. Are all aqueous unpreserved SDWA samples pH 5-9?	N/A	YES	NO
13d. Did the client provide the SDWA sample location ID/Description?	N/A	YES	NO
13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?	N/A	YES	NO

Cooler #: _____

Temperature (°C): 4.0

Thermometer ID: 401

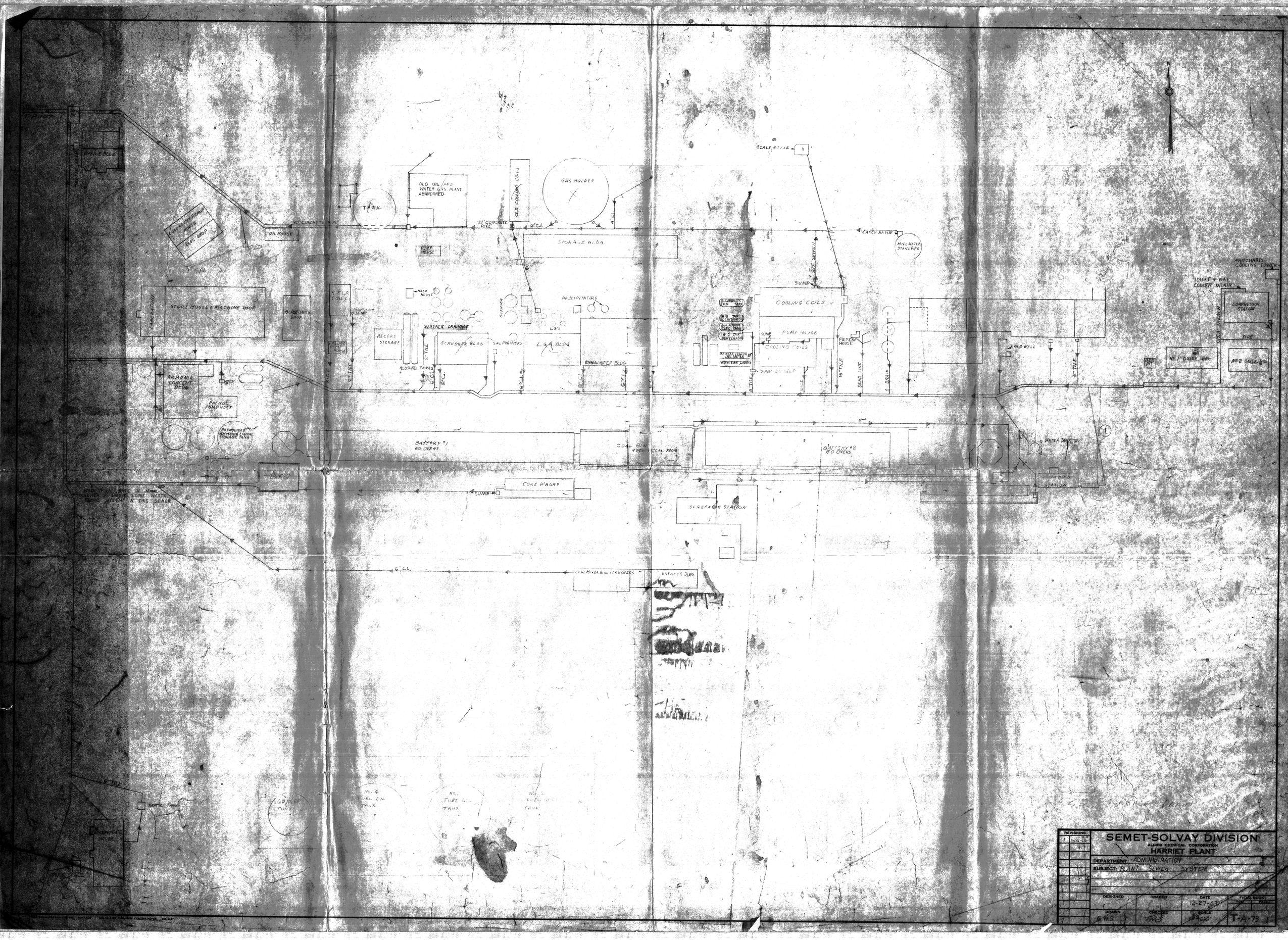
Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

[1]Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

Rev 1/20/2020

Historical Drawing T-A-73



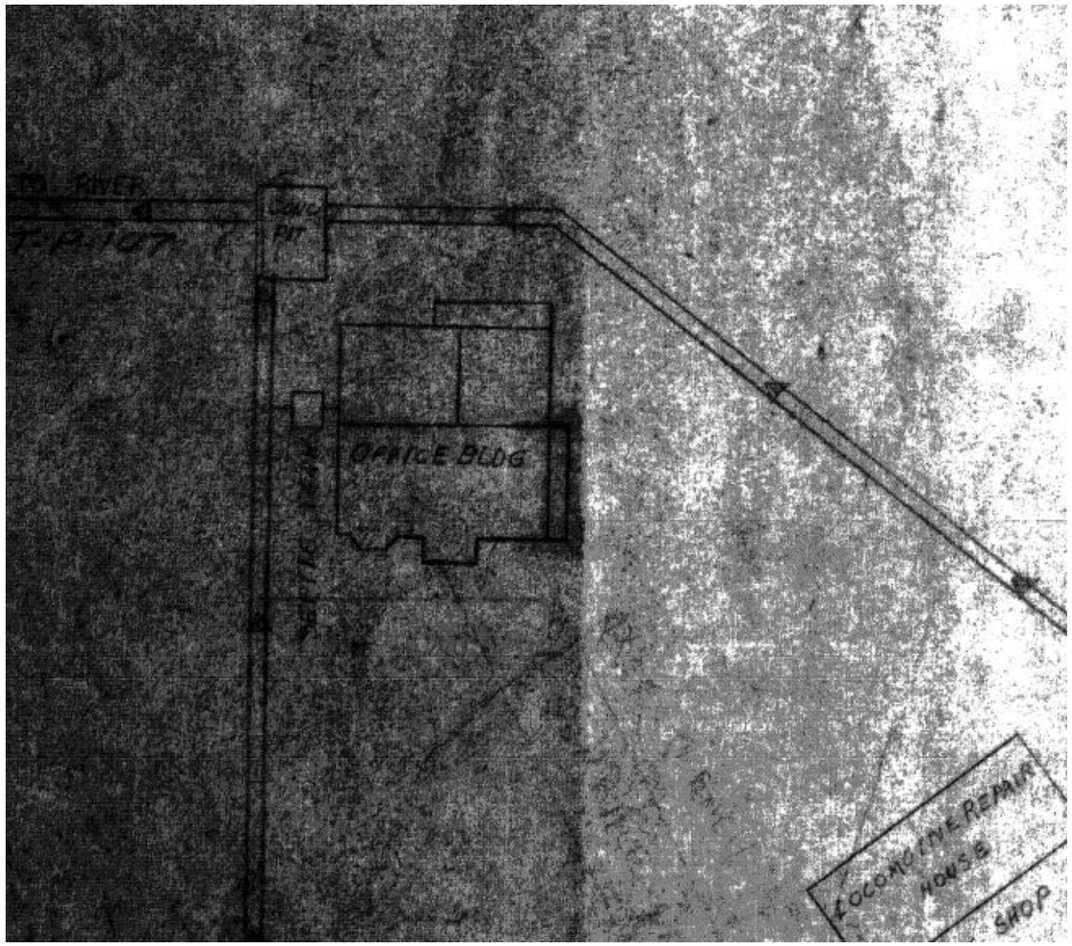
REVISIONS		

SEMET-SOLVAY DIVISION
ALLIED CHEMICAL CORPORATION
HARRIET PLANT

DEPARTMENT: ADMINISTRATION
SUBJECT: PLANT SEWER SYSTEM

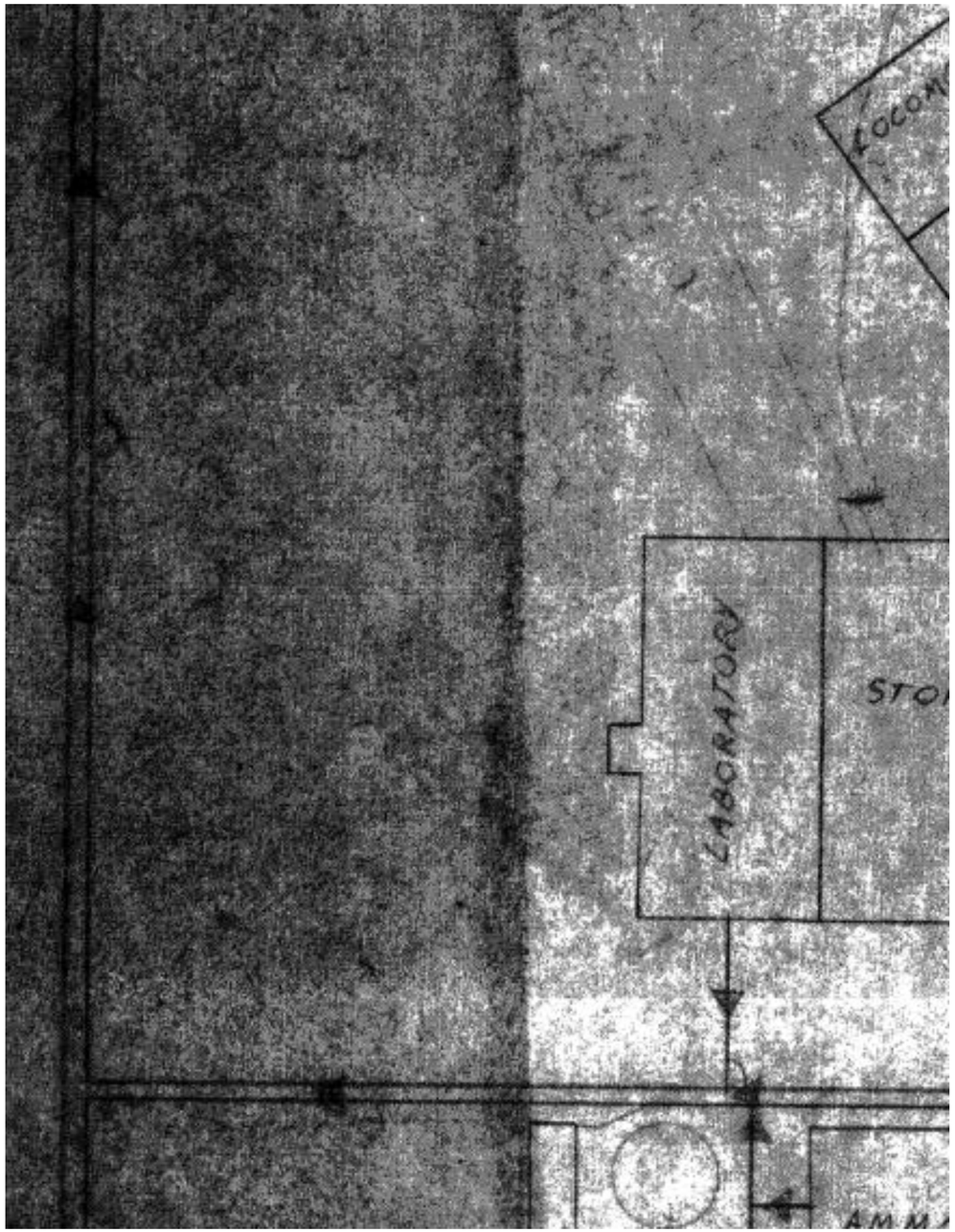
DESIGNED	TRACED	DATE	FIELD BOOK
		12-27-63	
DRAWN	CHECKED	SCALE	T-A-73
E.W.G.		1" = 100'	

Excerpt to Match Figure 8

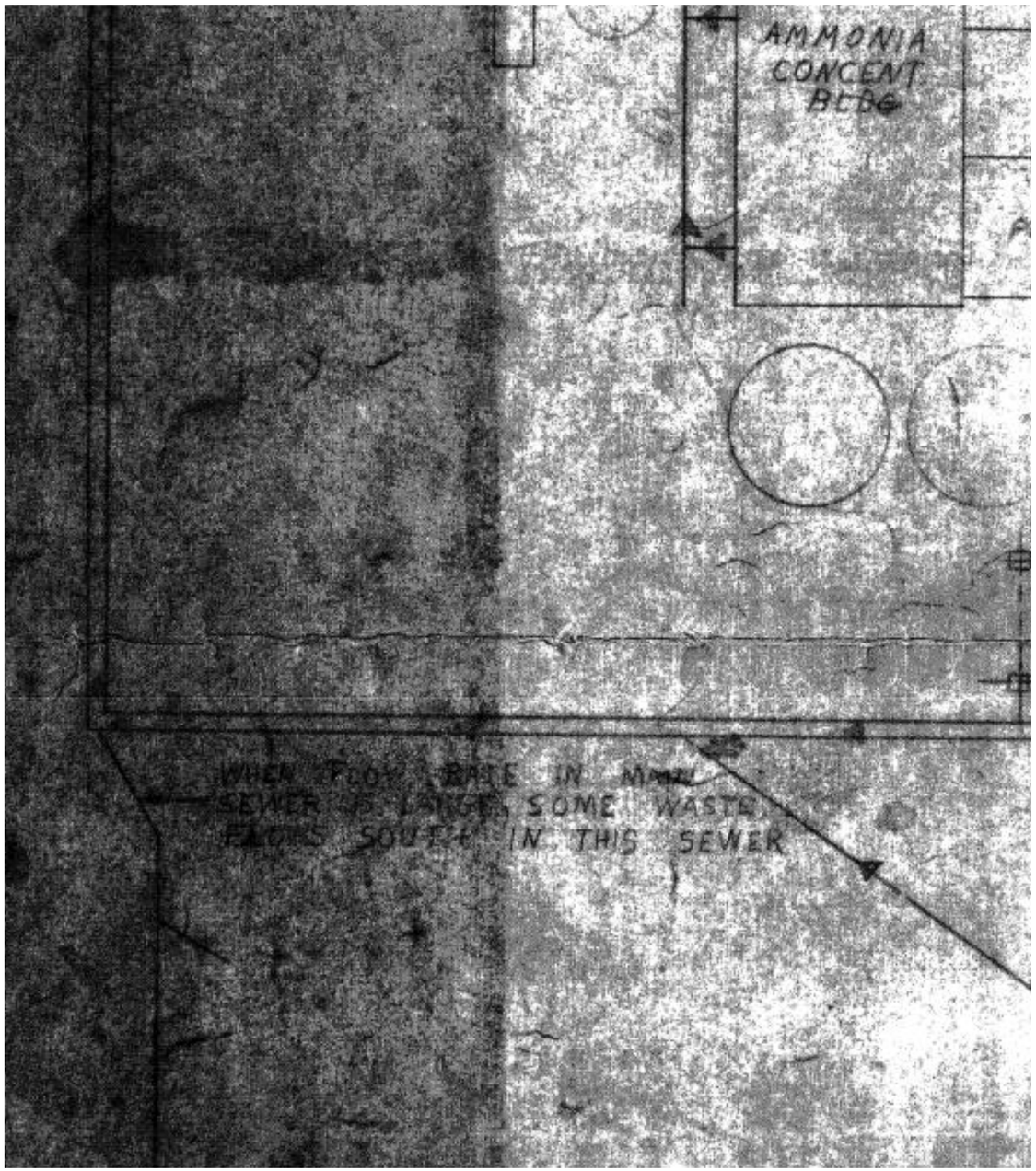


481 Carlisle Drive
Suite 202
Herndon, Virginia 20170

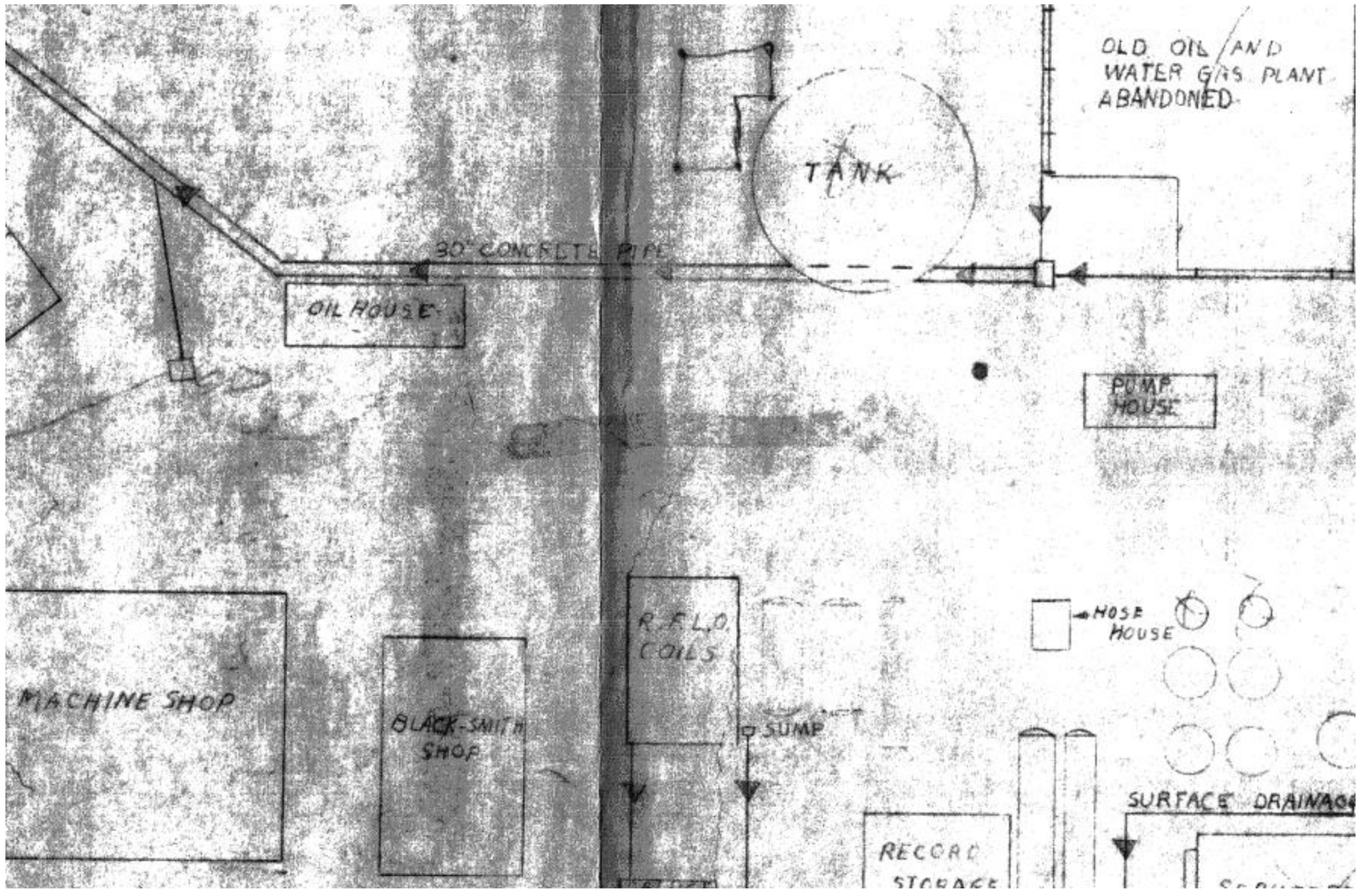
Excerpt to Match Figure 9



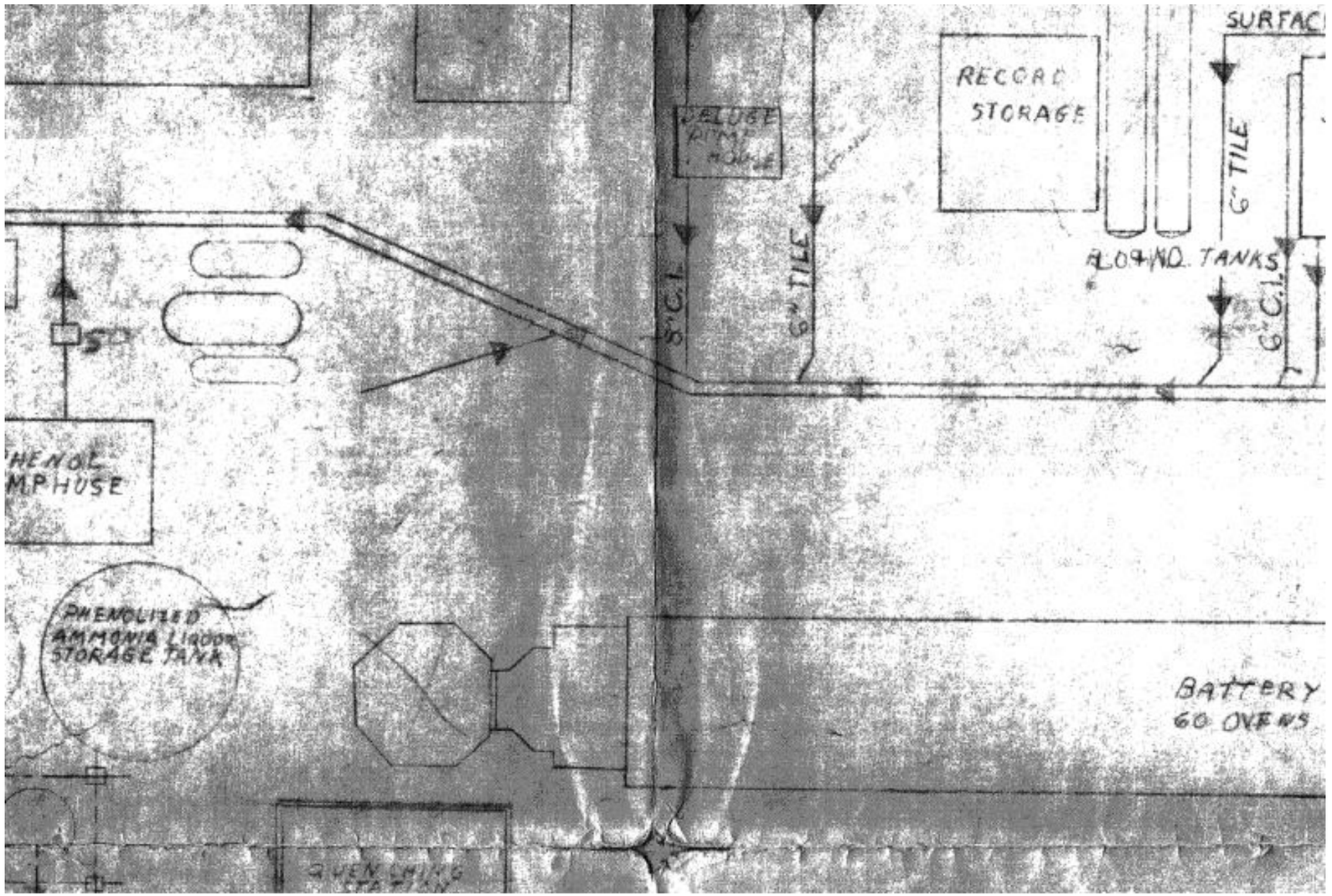
Excerpt to Match Figure 10



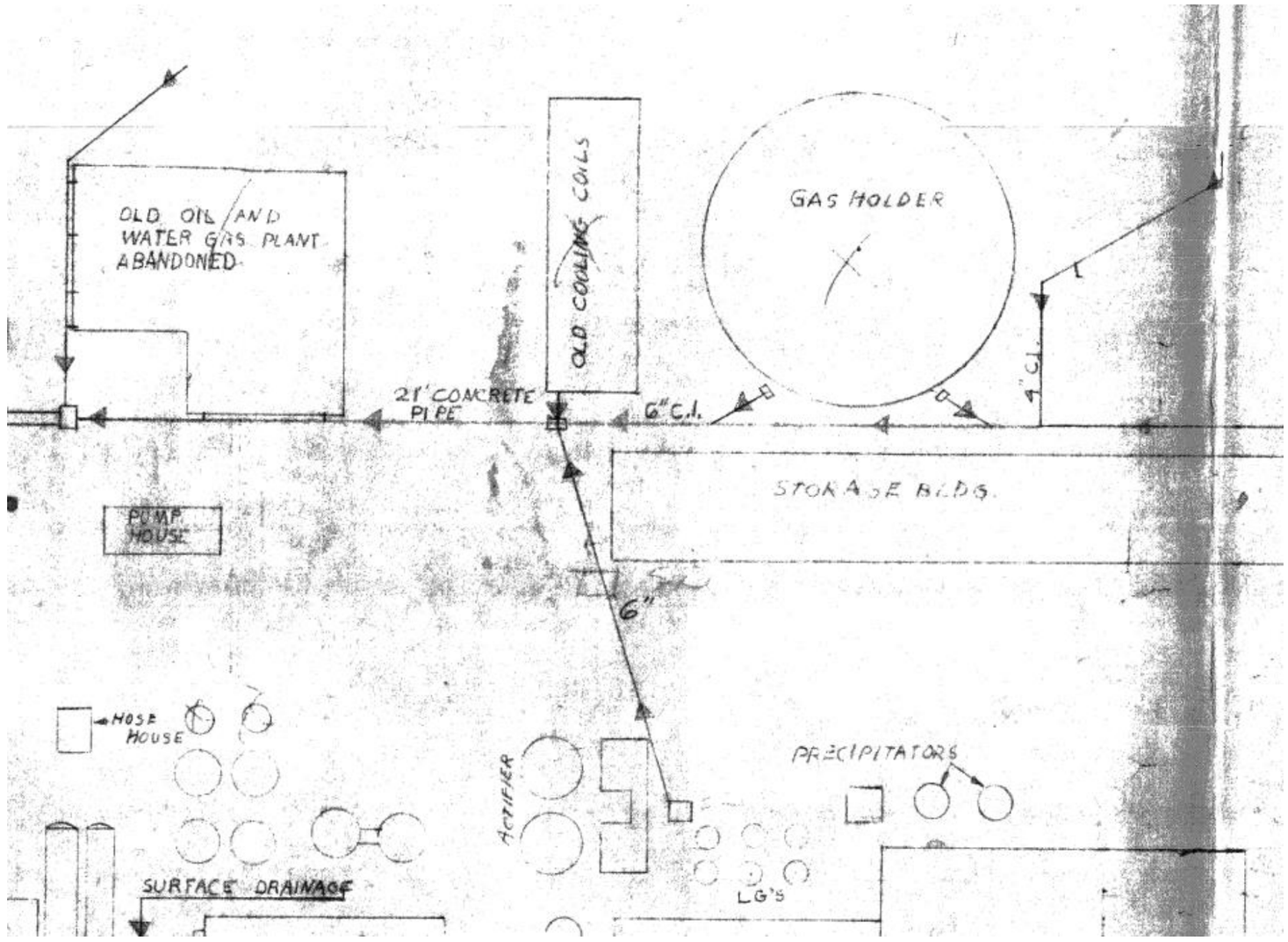
Excerpt to Match Figure 11



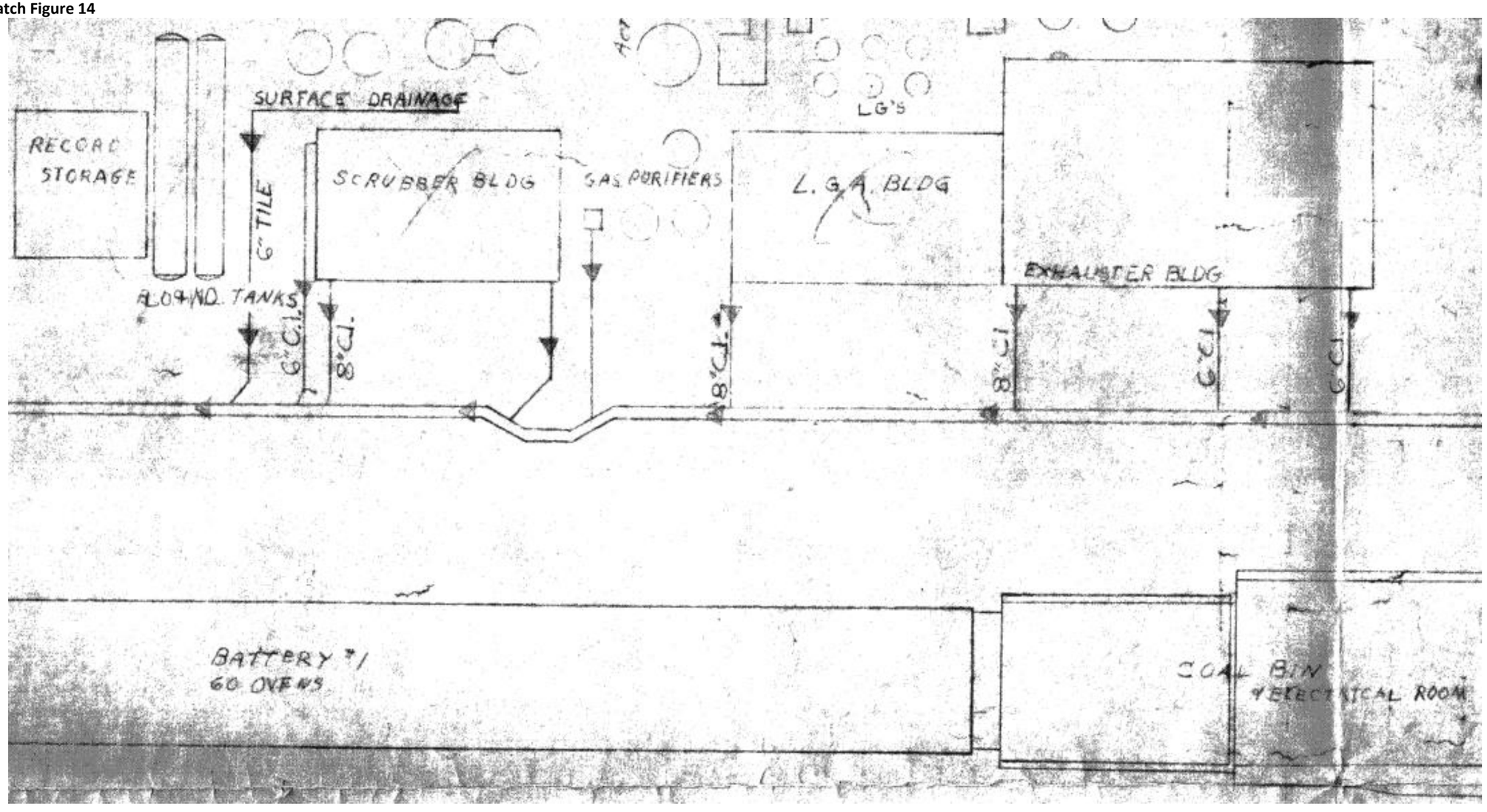
Excerpt to Match Figure 12



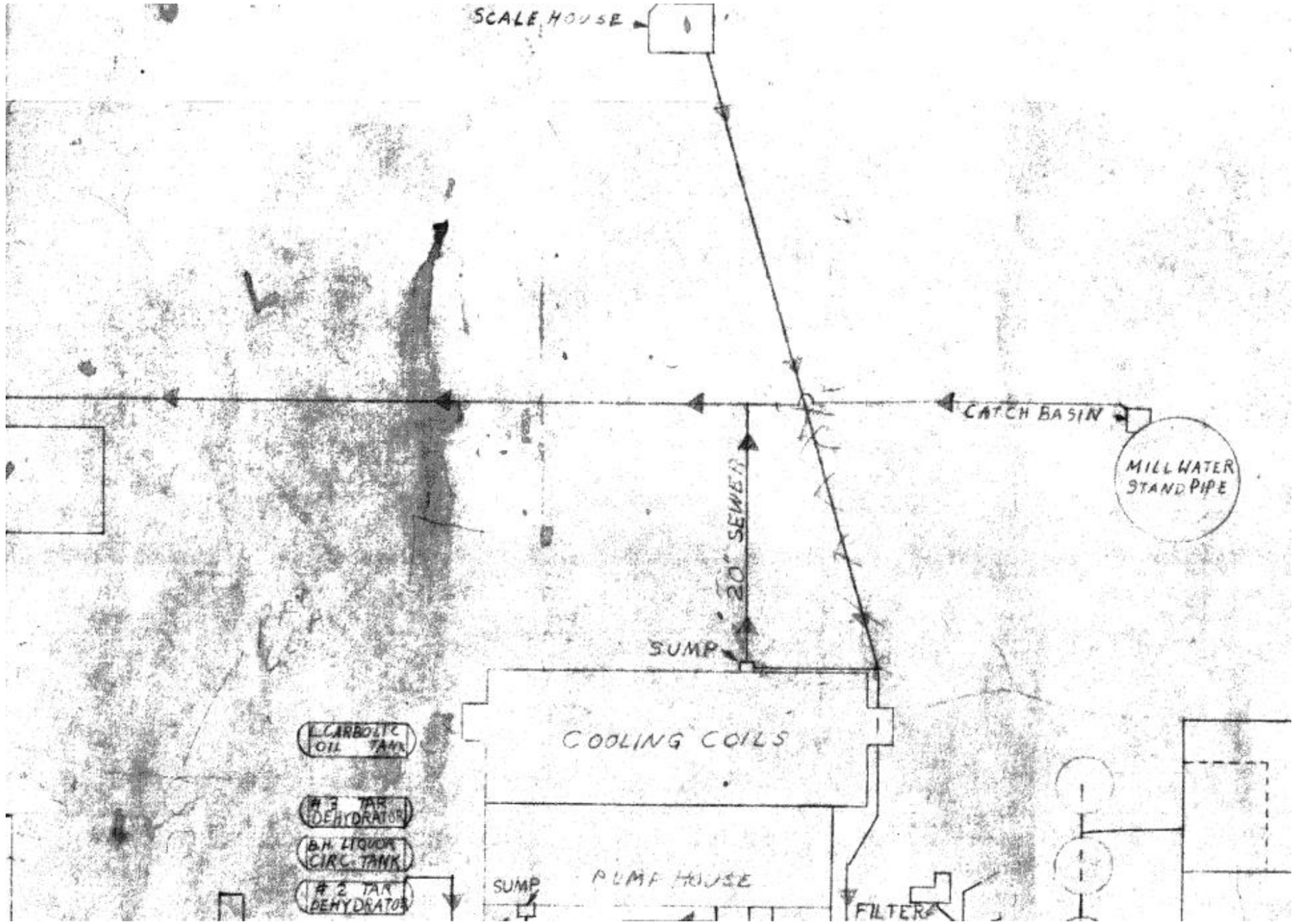
Excerpt to Match Figure 13



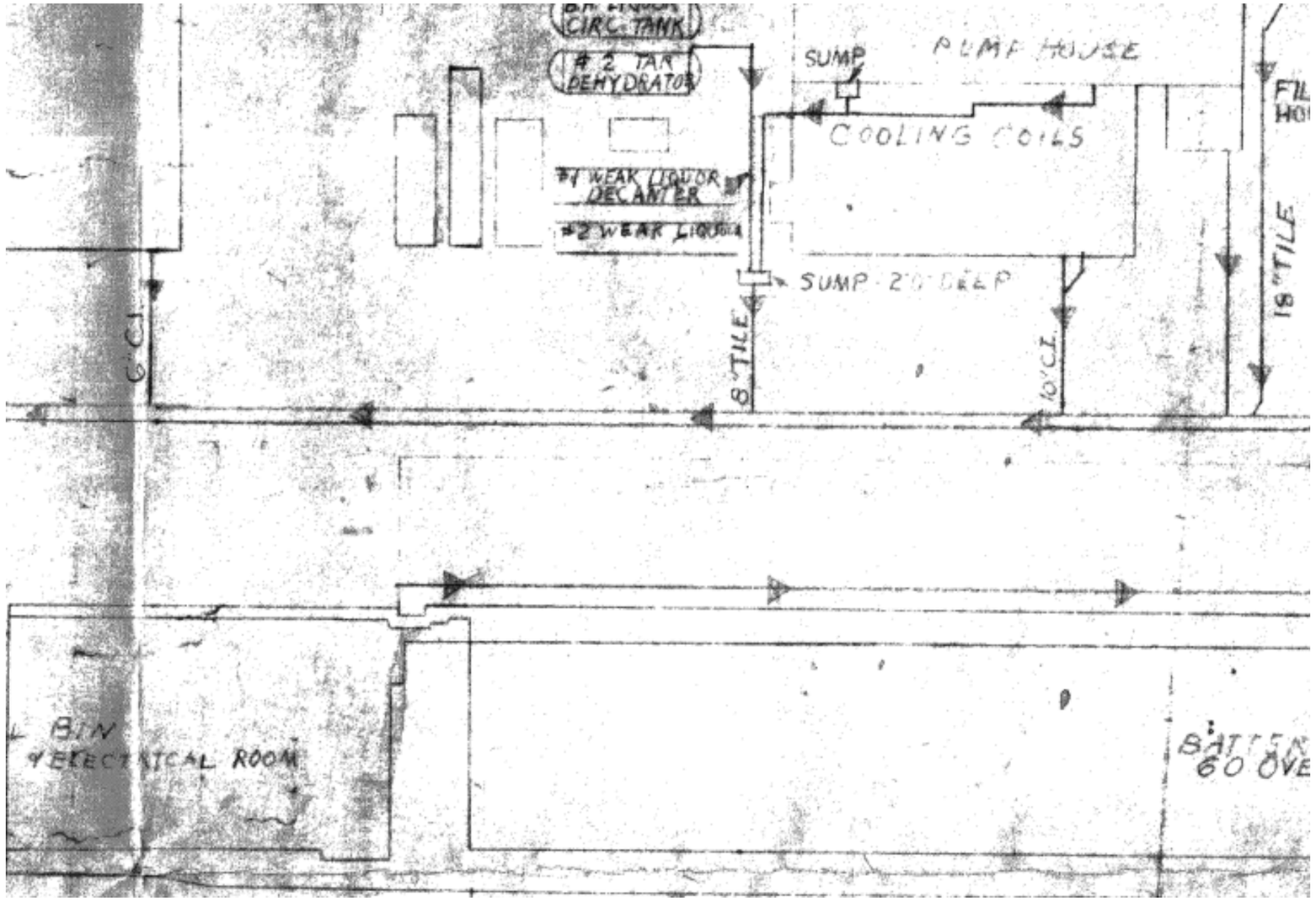
Excerpt to Match Figure 14



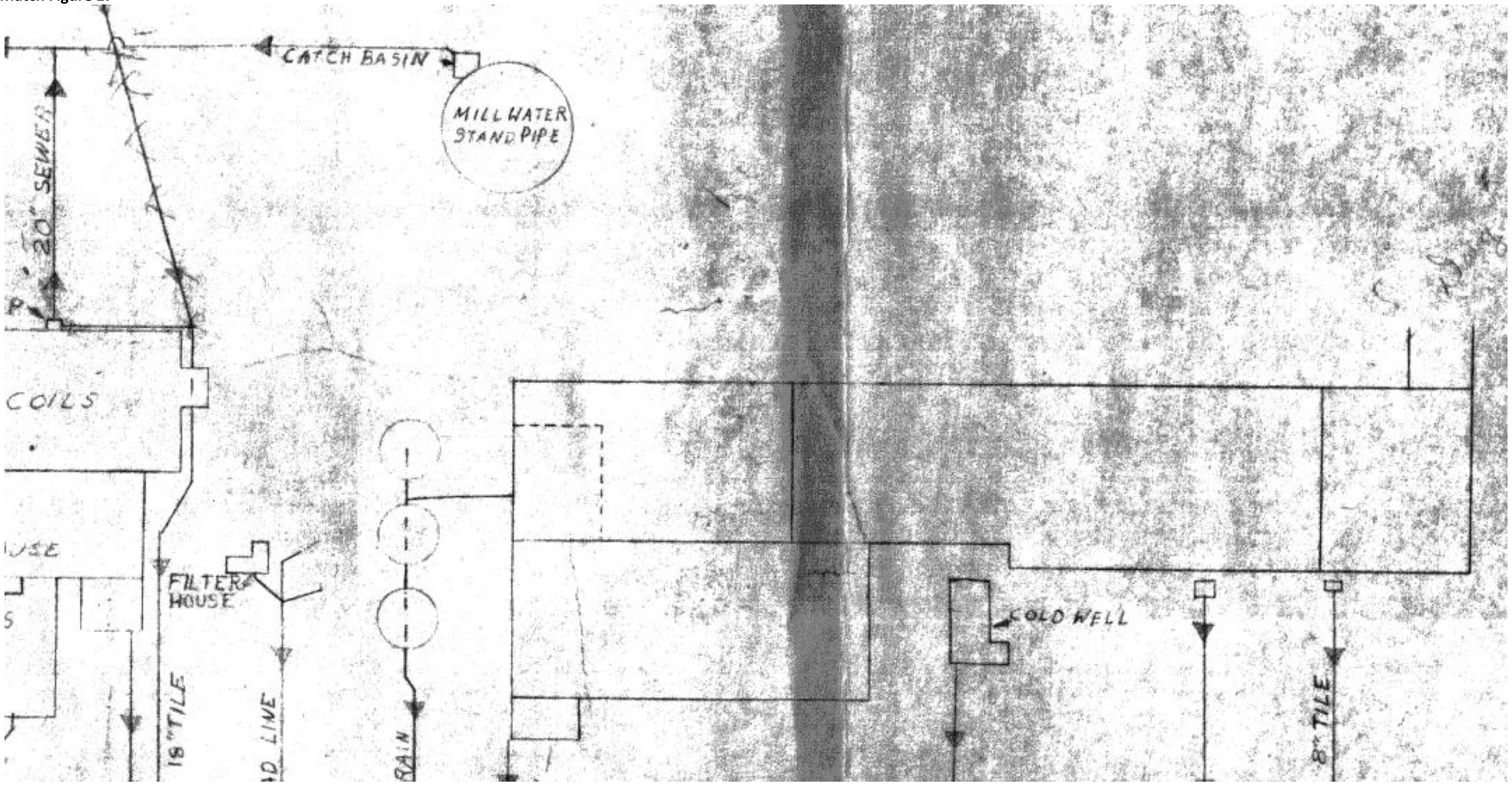
Excerpt to Match Figure 15



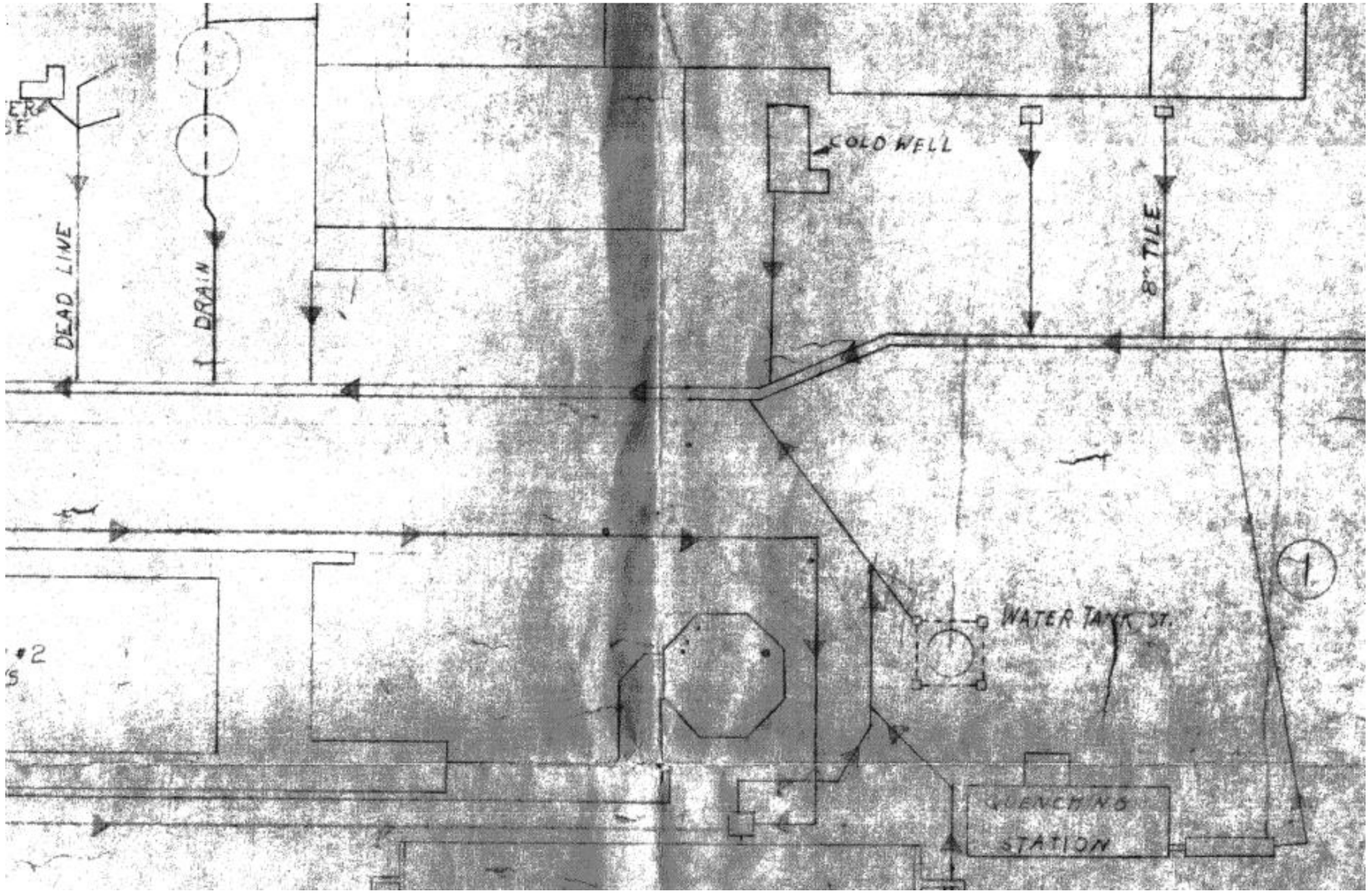
Excerpt to Match Figure 16



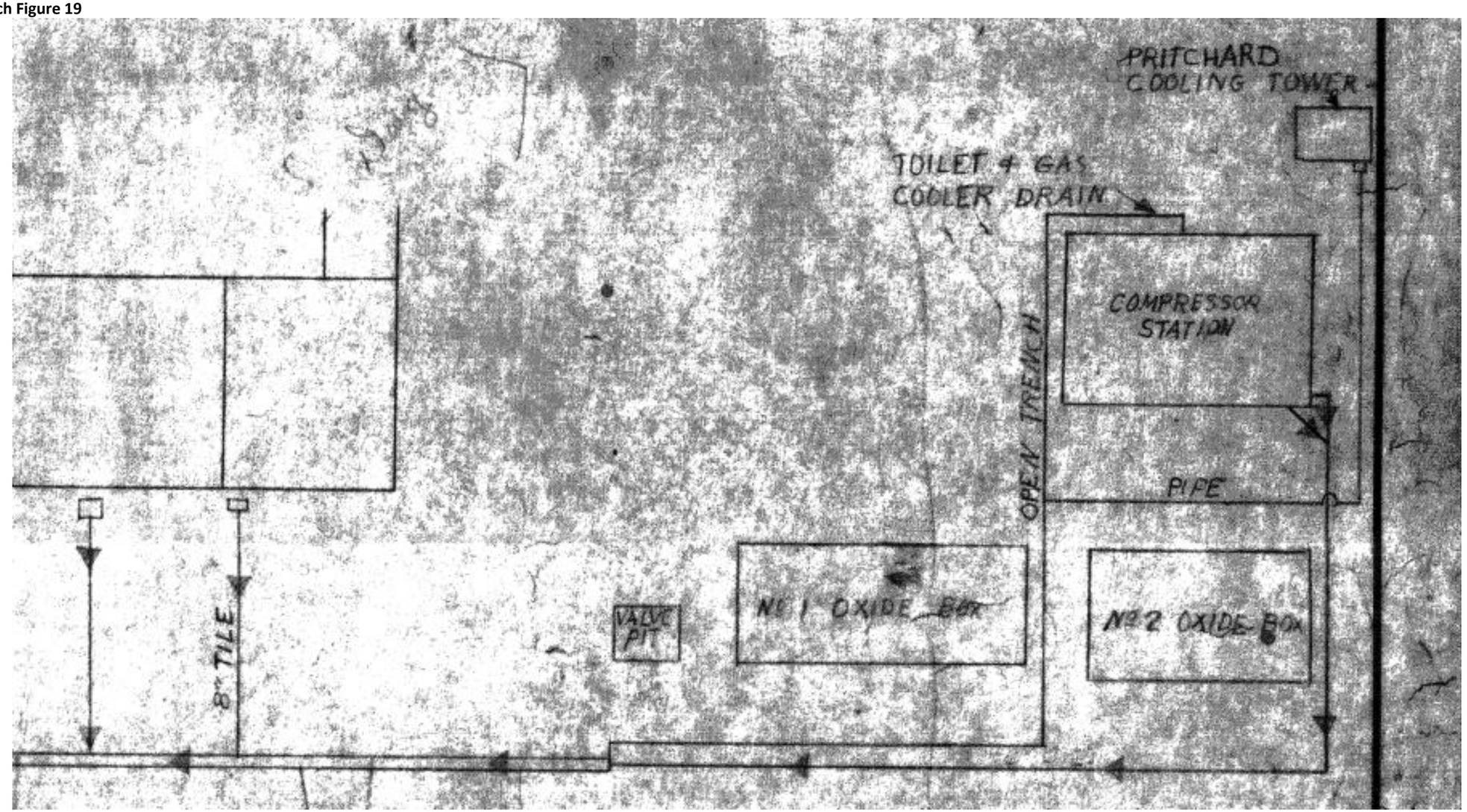
Excerpt to Match Figure 17



Excerpt to Match Figure 18



Excerpt to Match Figure 19



Excerpt to Mach Figure 20