FINAL FIELD INVESTIGATION REPORT

Old Upper Mountain Road Site (932112)
Niagara County, Lockport, New York

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation

Prepared by:

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EA SCIENCE and TECHNOLOGY

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Field Investigation Report
Old Upper Mountain Road Site
Lockport, Niagara County, New York

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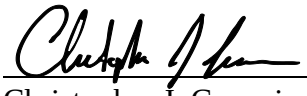

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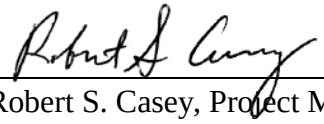

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1. INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) tasked EA Engineering, P.C., and its affiliate EA Science and Technology (EA) to conduct a Remedial Investigation (RI) and Feasibility Study (FS) at the Old Upper Mountain Road site (NYSDEC Site No. 932112) under the NYSDEC Engineering Services Standby Contract under Work Assignment No. D004438-41. The Old Upper Mountain Road site is located in the city and town of Lockport, New York (Figure 1). As part of the RI, EA was tasked to conduct a surface water and sediment sampling program, as well as a storm sewer system evaluation at the site in accordance with the RI Letter Work Plan[1] issued to NYSDEC on 9 November 2009.

The objective of the surface water and sediment sampling program was to further define the nature and extent of contamination within Gulf Creek immediately adjacent to the site. The purpose of the sewer evaluation was to investigate the storm sewer system located at the site and an associated bulkhead outfall that discharges into Gulf Creek on the eastern side of Old Upper Mountain Road. The sewer investigation was designed to determine the origins of the storm sewer systems and the potential upstream source of contamination previously identified in Gulf Creek.

At the request of NYSDEC, EA is submitting this report to summarize the analytical results of the surface water and sediment sampling program, document the results of the storm sewer evaluation, and discuss the findings of the field investigation activities associated with the RI.

1.1 SITE HISTORY

The Old Upper Mountain Road site was initially discovered in 1993 during a routine inspection of the Lockport City Landfill (NYSDEC Site No. 932010) located north of the Old Upper Mountain Road site (Figure 2). Evidence of ash and glass debris was noted throughout the top portion of the landfill, while recent dumping of trash/rubbish/tires was noted at the southern portion of the site. It was also noted during the inspection that a significant quantity of waste had been pushed over the embankment into the ravine at the base of which Gulf Creek runs.

The Old Upper Mountain Road site was reportedly operated as a municipal dump by the city of Lockport from 1921 to the 1950s. Access to the landfill during that time was from a viaduct under the railroad track just north of Otto Park Place. Garbage and other wastes were apparently dumped at the landfill, burned, and then pushed into the ravine. The city of Lockport moved its dumping operations in the 1950s to the area known today as the Lockport City Landfill.

1. EA Engineering, P.C. 2009. Remedial Investigation Letter Work Plan, D004438-41, Old Upper Mountain Road Site (932112). November.

1.2 PREVIOUS INVESTIGATIONS

The following sections briefly summarize the results of the investigation activities that have occurred at the site prior to the current RI. A more detailed report of these investigations is included in the Site Investigation (SI) Report[2] issued by NYSDEC in December 2007. This report also includes an analytical summary of environmental samples collected both historically and during the SI in table format. EA has developed a site figure (Figure 3) that depicts the approximate locations of the historical environmental samples collected at the site.

1.2.1 New York State Department of Environmental Conservation - 1997

In November 1997, NYSDEC Central Office Division of Hazardous Site Control staff conducted a cursory sampling event at the Old Upper Mountain Road site as part of a Preliminary Site Assessment (PSA). Specifically, the purpose of this field sampling was to determine if chemical contamination existed at the site and, if so, the concentration levels of the contamination. One surface water sample and one sediment sample were collected from Gulf Creek, and 13 waste samples from various locations on-site were collected and analyzed as part of the PSA.

The 13 waste samples contained volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs), with the concentrations exceeding the NYSDEC soil cleanup objectives. Twenty metals were detected in the waste samples collected from the site. Of these 20 metals, 16 were detected at concentrations above NYSDEC soil cleanup objectives and 11 are listed as U.S. Environmental Protection Agency (USEPA) priority pollutant metals.

The surface water sample contained VOCs at concentrations that exceeded the NYSDEC surface water standards or guidance values for a Class A stream. The sediment sample collected from the same location contained both VOCs and SVOCs at concentrations that exceeded the NYSDEC sediment criteria.

1.2.2 New York State Department of Health - 1998

In October 1998, the New York State Department of Health (NYSDOH) collected one surface water and five surface soil samples from the site. The surface water sample was collected upstream of the surface water sample collected by the NYSDEC the previous year and analyzed only for VOCs. This sample contained VOCs exceeding NYSDEC surface water standards and/or guidance values. The surface soil samples were only analyzed for metals. Seventeen metals were detected in these samples, with the concentrations of 13 metals exceeding the NYSDEC soil cleanup objectives. Eight of these metals were USEPA priority pollutant metals.

2. NYSDEC, Division of Environmental Remediation. 2007. Site Investigation Report, Old Upper Mountain Road Site, Town of Lockport, Niagara County, New York. December.

1.2.3 New York State Department of Environmental Conservation - 2007

The NYSDEC conducted a SI at the Old Upper Mountain Road site between June and October 2007 with the specific objective of determining if hazardous wastes or substances were present at the site, and if present, determining approximate volumes of waste and the degree to which the waste had contaminated environmental media both at the site and areas immediately surrounding the site.

NYSDEC and its subcontractor advanced soil borings at the site to evaluate the stratigraphy of the site. Based on boring logs, the geologic units' encountered during the SI included clean fill, waste, and glaciolacustrine silty clays and clayey silts. Clean fill consisted predominantly of imported native soil, while waste material consisted predominantly of multi-colored, layered ash. The bedrock underlying the site is the Guelph Dolostone of the Lockport Group. During the SI, no saturated subsurface zone was encountered; therefore, hydrogeology was not evaluated at the site. Based upon a regional groundwater flow map for the area, it was suspected that groundwater under the Old Upper Mountain Road site flows to the north towards Gulf Creek.

Based on the environmental samples collected during the SI, it was determined that the site had been contaminated with VOCs, SVOCs, and target analyte list (TAL) metals due to the historical operations of the site as a landfill. The concentrations of some of these contaminants exceed the soil cleanup objectives by a factor of four or more. The same contaminants were detected in surface water and/or sediment at concentrations that exceeded the respective standards, criteria, and guidance values (SCGs). Eighteenmile Creek, which receives water from Gulf Creek, has been identified by the International Joint Commission as one of the 43 Areas of Concern in the Great Lakes Basin. The data collected during the SI suggested that the Old Upper Mountain Road site is a contaminant contributor to Eighteenmile Creek.

The SI conducted at the Old Upper Mountain Road site also revealed that consequential amounts of hazardous wastes (D008 - lead) were present at the site. It was suggested that these hazardous wastes had adversely impacted surface water and sediment in Gulf Creek adjacent to the site. As a result of the SI, the site was listed on the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites in New York State as a Class 2 site (932112).

2. FIELD INVESTIGATION ACTIVITIES

2.1 REMEDIAL INVESTIGATION ACTIVITIES – NOVEMBER 2009

The following sections are a summary of the field investigation activities conducted in November 2009 as part of the RI being conducted by EA and NYSDEC at the Old Upper Mountain Road site. Table 1 of this report details the environmental samples collected during this portion of the RI and Figure 4 depicts the locations where the samples were collected at the site. Prior to implementation of the field sampling program EA and NYSDEC conducted a reconnaissance visit and identified locations where surface water, sediment, and sewer samples would be collected. Daily field reports completed during the field investigation program are provided in Appendix A. The sample locations were field flagged and subsequently surveyed in December 2009 by Popli Design Group, Inc. a New York State licensed Land Surveyor.

During the site reconnaissance visit, EA and NYSDEC discovered an unknown sewer manhole at the base of the ravine beneath a flooded section of Gulf Creek. The upper portions of Gulf Creek are impounded due to a series of beaver dams located within the ravine. The southwestern portions of Gulf Creek within the ravine have become flooded because of these dams. Upon inspection of the sewer manhole in the ravine, it was noted that the sewer was receiving flow from an unknown source coming from a southerly direction into the manhole. It was also noted that surface waters were infiltrating the manhole cover and entering the sewer system due to the flooding in this area of the ravine.

The base of the ravine has been heavily impacted by illegal dumping over the side of the northwestern embankment at the site. A large quantity of tires, a number of cars, refrigerators, soda machines, a bus, and other refuse and debris cover the western end of the base of the ravine.

2.2 SURFACE WATER SAMPLING

EA collected two surface water samples from Gulf Creek during the field investigation program conducted in November 2009. The surface water samples, SW-02 collected at the outfall of the bulkhead and SW-04 collected at a location located downstream of the bulkhead at a breach point in the beaver dam located within Gulf Creek, were collected using the sample containers. The location of the surface water samples are illustrated on Figure 4.

Field measurements of pH, dissolved oxygen, temperature, turbidity, salinity, and specific conductivity were obtained and recorded on the sampling logs. In addition, EA noted a distinct sheen on surface water at the SW-04 sample location. The sheen could be seen traveling from upstream to the breach in the beaver dam. Surface water sampling logs are provided in Appendix A.

Surface water samples were placed in the laboratory provided sample containers, sealed, labeled, and packaged in a cooler packed with ice. The samples were then submitted to the laboratory for analysis under standard chain-of-custody.

Each surface water sample was analyzed by Hampton-Clarke/Veritech of Fairfield, New Jersey for target compound list (TCL) VOCs by USEPA Method 8260B, TCL SVOCs by USEPA Method 8270C, TAL metals and mercury by USEPA Method 6010B/7470, TCL pesticides by USEPA Method 8081A, and TCL polychlorinated biphenyls (PCBs) by USEPA Method 8082 in accordance with the NYSDEC Analytical Services Protocol.

2.3 SEWER EVALUATION

2.3.1 Sewer Water Manhole Sampling

Two water samples were collected from the storm sewer system at the Old Upper Mountain Road site on 19 November 2009. These water samples, SW-01 collected from a storm sewer manhole located on the western side of Old Upper Mountain Road and SW-03 collected from a sanitary sewer manhole located within the base of the ravine, were collected using a telescoping dipper sampler and dedicated 600 mil polypropylene ladles at each location. It should be noted that the sanitary sewer manhole where water sample SW-03 was collected was receiving surface waters. The locations of the sewer manholes where water samples were collected are illustrated on Figure 4.

Field measurements of pH, dissolved oxygen, temperature, turbidity, salinity, and specific conductivity were obtained and recorded on the sampling logs. The sewer manhole water sampling logs are provided in Appendix A.

Sewer water samples were placed in the laboratory provided sample containers, sealed, labeled, and packaged in a cooler packed with ice. The samples were then submitted to the laboratory for analysis under standard chain-of-custody.

Each sewer manhole water sample was analyzed by Hampton-Clarke/Veritech of Fairfield, New Jersey for TCL VOCs by USEPA Method 8260B, TCL SVOCs by USEPA Method 8270C, TAL metals and mercury by USEPA Method 6010B/7470, TCL pesticides by USEPA Method 8081A, and TCL PCBs by USEPA Method 8082 in accordance with the NYSDEC Analytical Services Protocol.

2.3.2 Sewer System Dye Testing

EA conducted tracer dye testing of the sewer systems located at the Old Upper Mountain Road site on 20 November 2009. EA utilized liquid dye to perform the sewer line evaluations. Tracer dye was initially placed into a sanitary sewer manhole located at the south end of Old Upper Mountain Road in order to determine if the sewer connected to the manhole found in the base of the ravine at the site. These sewer manholes are horizontally located approximately 500 ft apart. Approximately 1 minute after pouring the liquid dye into the sanitary sewer manhole, the dyed water was observed within the manhole at the base of the ravine, confirming connection with the sewer manhole located at the end of Old Upper Mountain Road.

After the tracer dye testing, EA and NYSDEC received a sewer map from the city of Lockport which detailed the portions of the sanitary sewer system at the end of Old Upper Mountain Road and the associated connected sewer system. Based on the city of Lockport sewer maps, the manhole located at the end of Old Upper Mountain Road receives flow from a sewer line along Otto Park Place which originates on Park Avenue between Heath Street and Michigan Street east of the site. The sewer line originating on Park Avenue also receives flow from a 10-in. line that originates on West Avenue/Route 31. The sanitary sewer manhole at the end of Old Upper Mountain Road also receives additional flow from a 24-in. town of Lockport sanitary sewer line that also receives flow from GM Components Holdings, LLC (GMCH) located west of the site. The sanitary sewer manhole at the end of Old Upper Mountain Road is one of nine locations within the city of Lockport's sewer system where the city accepts flow from the town of Lockport and is shown on Figure 5. The above noted sewer lines all combine flow at the manhole located at the end of Old Upper Mountain Road, then flow to the east of Old Upper Mountain Road where another manhole is shown to exist; however, EA has been unable to locate this manhole cover to date. The combined sewer flow then flows north through the site for 135 ft in a 21-in. line to manhole where it then turns and flows east again for 80 ft in an 18-inch line to another manhole where it the flows north to the manhole EA and NYSDEC discovered in the base of the ravine. The total vertical descent based on the invert elevations noted on city of Lockport sewer map documents an elevation change of 72.26 ft from the manhole at the end of Old Upper Mountain Road to the manhole at the base of the ravine. According to the city sewer map, the sanitary sewer line then runs along the base of Gulf Creek, referred to as the Gulf Interceptor, in a north to northeast direction until it reaches the city of Lockport Publicly Owned Treatment Works (POTW) which is located approximately 1.6-mi northeast of the site.

After dye testing the sanitary sewer line via the manhole located at the end of Old Upper Mountain Road, EA then dye tested the storm sewer line located to the west of Old Upper Mountain Road in an attempt to determine the source of the bulkhead outfall located at the western portion of the ravine. Approximately 5 minutes after pouring liquid dye into the storm sewer line along the west side of Old Upper Mountain Road, dyed water was observed flowing from the bulkhead outfall that discharges to Gulf Creek as shown on Figure 5. The city of Lockport had no knowledge or maps depicting the storm sewer system along the west side of Old Upper Mountain Road. EA noted during inspection of the storm sewer manhole west of Old Upper Mountain Road that the manhole was receiving flow from the west in the direction of GMCH.

Figure 5 illustrates the manhole locations and direction of flow within the sewer system lines associated with the Old Upper Mountain Road site.

2.4 SEDIMENT SAMPLING

Sediment sampling locations were selected during the site reconnaissance visit. Due to the flooding in the southwestern portion of Gulf Creek, sediment sample locations were selected based on the known historical flow path of the headwaters of Gulf Creek and physical and observational evidence where surface waters first daylight in the ravine. A distinctive flow of surface water was evident in the upper reaches of the swale that defines the discharge from the

known bulkhead outfall at the western portion of the site. EA and NYSDEC also noted that surface waters appeared to daylight from the base of the fill material, creating a separate channel prior to entering the flooded area of the ravine. Figure 2 illustrates the approximate location of where the surface waters daylight and the apparent flow path of the stream channels in the ravine. Based on this evaluation, EA and NYSDEC selected four sediment sampling locations along the northern stream channel that emanates from the bulkhead outfall, and one sampling location along the stream channel from the base of the fill material adjacent to the sewer manhole identified in the ravine.

A total of 15 sediment samples were collected from five locations within Gulf Creek on 20 November 2009. Three samples were collected at each location, including one sample from the 0- to 2-in. depth interval and one from the 2- to 6-in. depth interval. Sediment material from both depth intervals was placed in a stainless steel bowl and mixed to create a composite sediment sample of each location for total organic carbon (TOC) analysis. The sediment samples were collected using a decontaminated hand auger or a dedicated stainless steel spoon. The hand auger was advanced through the surface water into the sediment from the 0- to 2-in. depth interval. At most of the sediment sample locations, the sediment from 0- to 2-in. interval was not cohesive or tight enough to stay in the hand auger as the sample was lifted from the water. In these instances, a dedicated stainless steel spoon was used to collect the 0- to 2-in. depth interval sample. Sediment samples collected from the 2- to 6-in. depth interval were field screened with a photoionization detector (PID) to selected sediment samples to be analyzed for VOCs. Any standing water that accumulated in the hand auger was decanted prior to sample collection. Sediment samples collected for VOC analysis were immediately placed into a sample container upon reaching the surface.

Sediment sampling began with collection of the first sediment sample from the location that was furthest downstream (SD-01), and each consecutive sediment sample was collected upstream from the last. The last sediment sample (SD-05) was collected at a location closest to the bulkhead outfall.

Sediment samples were placed in the laboratory provided sample containers, sealed, labeled, and packaged in a cooler packed with ice. The samples were then submitted to the laboratory for analysis under standard chain-of-custody.

The sediment samples were sent to Hampton-Clarke/Veritech of Fairfield, New Jersey for analysis. Each depth interval sediment sample was analyzed for TAL metals and mercury by USEPA Method 6010B/7470, while only sediment samples collected from the 0- to 2-in. depth interval were analyzed for TCL VOCs by USEPA Method 8260B, TCL SVOCs by USEPA Method 8270C, TCL pesticides by USEPA Method 8081A, and TCL PCBs by USEPA Method 8082. Based on field PID screening, two sediment samples from the 2- to 6-in. depth interval were submitted for analysis of TCL VOCs by USEPA Method 8260B. The composite sediment samples from each location were submitted and analyzed for TOC by USEPA Method 9060.

In addition, a portion of each sample was extracted and archived by the laboratory for potential toxicity characteristic leaching procedure (TCLP) metals analysis following review of the TAL

metals analytical results. As a result, four sediment samples were analyzed for total lead and TCLP lead.

3. FIELD INVESTIGATION RESULTS

The following sections present the analytical results and findings of the field investigation activities conducted at the site in November 2009. Aqueous and sediment samples were analyzed by an Environmental Laboratory Approval Program-certified laboratory in accordance with the reporting requirements as defined in NYSDEC Analytical Services Protocol of June 2000. Laboratory analytical data were reported using Category B deliverables and a standard electronic data deliverable. Anayltical data packages or sample delivery groups (SDGs) were validated by ChemWorld Environmental, Inc. of Rockville, Maryland, an independent third party of this assignment. SDGs were reviewed for completeness, field and laboratory quality control sample results were evaluated, significant laboratory control problems were assessed, and data qualifiers were assigned. The Data Usability Summary Reports (DUSRs) corresponding with each SDG are included in Appendix B.

SCGs are promulgated requirements and non-promulgated guidance which govern activities that may affect the environment and are widely used at different stages of an investigation and remediation of an inactive hazardous waste site. The SCGs applicable for the data set collected and evaluated under this field investigation are NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1, Ambient Water Quality Standards for Class A waters (surface waters) Type H(WS) and NYSDEC Technical Guidance for Screening Contaminated Sediments (NYSDEC, 1999). Additionally, EA compared the analytical data from water sample SW-03, collected from the sewer manhole in the base of the ravine which receives discharge from GMCH, with the city of Lockport's POTW discharge limits promulgated under State Pollutant Discharge Elimination System (SPDES) Permit NY-002 7057 and the Standard Industrial User (SIU) permit (No. CL860103) issued to GMCH by the city of Lockport.

3.1 SURFACE WATER

Three VOCs and one TAL metal were detected in surface water samples at concentrations exceeding the respective SCGs. Chlorinated VOCs (*cis*-1,2-dichloroethene [*cis*-1,2-DCE] [8.7 µg/L], tetrachloroethene [PCE] [3.9 µg/L], and trichloroethene [TCE] [8.0 µg/L]) were at concentration levels above NYSDEC surface water standards at surface water location SW-04 and TCE (11 µg/L) was detected above standard at surface water location SW-02. The surface water sample collected at SW-04 was located at the breach point of a substantial beaver dam where a noticeable sheen was evident on the water; while surface water location SW-02 was located at the outfall of the bulkhead in the western portion of the site. Surface water location SW-02 is located upstream of surface water SW-04 location. Iron was also detected at concentrations exceeding the SCGs for metals in both surface water samples SW-02 and SW-04.

No SVOCs, pesticides, or PCBs were detected in surface water samples at concentrations above their respective laboratory method detection limits (MDLs).

A summary of the detected analytical results for surface water samples is provided in Tables 2A through Table 2C and shown on Figure 6.

Historical surface water sampling conducted in 2007 by the NYSDEC at similar locations to the surface water sampling locations sampled in November 2009 as part of this RI, also reported the same three chlorinated VOCs above NYSDEC Class A surface water standards. The surface water samples were collected at the bulkhead outfall and a location further downstream within the ravine. The detected chlorinated VOC concentrations of *cis*-1,2-DCE (total), PCE, and TCE ranged from 5 µg/L to 20 µg/L in 2007. Additionally, analytical data from surface water samples collected from the southwestern headwaters of Gulf Creek dating as far back as 1997 (NYSDEC) and 1998 (NYSDOH) have reported concentrations of the same three chlorinated VOCs (*cis*-1,2-DCE, PCE, and TCE) in the Gulf Creek surface water body.

Table 3 presents the historical and current total chlorinated VOC concentrations detected in surface water samples collected from both the bulkhead outfall and downstream sampling locations. Downstream surface water total chlorinated VOC concentrations have remained relatively consistent with the exception of a spike in the surface water sample collected in 1997. The bulkhead outfall has only been sampled during the last two investigations at the site (2007 and 2009) with the total chlorinated VOC concentrations being similar on both occasions.

3.2 SEWER SYSTEM

Five VOCs, one SVOC, and one TAL metal were reported at concentration levels exceeding NYSDEC surface water standards in water samples (SW-01 and SW-03) collected from the sanitary and storm sewer systems associated with the site.

Water sample SW-01 was collected from the manhole located just west of Old Upper Mountain Road and since the storm sewer dye testing confirmed connection with the bulkhead that discharges to the ravine and ultimately Gulf Creek, the analytical results for water sample SW-01 were evaluated using surface water criteria. One chlorinated VOC, TCE (3.9 µg/L), was detected in water sample SW-01, the concentration was slightly below NYSDEC surface water standard. Consistent with the surface water samples (SW-02 and SW-04), water sample SW-01 reported a concentration of iron that exceeded the SCG. Water sample SW-01 also detected a concentration of bis(2-Ethylhexyl)phthalate, a SVOC, above the applicable SCG.

Water sample SW-03 reported the highest concentration of total chlorinated VOCs, which included *cis*-1,2-DCE (20 µg/L), PCE (7.8 µg/L), TCE (9.1 µg/L), and vinyl chloride (5.9 µg/L). Water sample SW-03 was compared with the NYSDEC Class A surface water standards (Table 2) because the sewer manhole was receiving surface waters due to flooding in this portion of Gulf Creek. In addition, because water sample SW-03 was collected from the sanitary sewer manhole located in the base of the ravine, the analytical results from water sample SW-03 were also compared with the city of Lockport's POTW SPDES permit (NY 002 7057) discharge limits and GMCH's SIU permit (CL860103) issued by the POTW to GMCH. Based on the SIU permit, there are no discharge limitations for VOCs and/or SVOCs; only pH, oil and grease (total), phosphorus (total), and 10 metals are listed on the permit. EA has included a copy of the SIU permit in Appendix C. GMCH also maintains a SPDES permit (NY 000 0558) which identifies monitoring as the only discharge requirement. EA and NYSDEC recognize that the POTW SPDES permit discharge limits are regulated effluent guidance and that the sewer water

sample (SW-03) collected is considered influent flow. In comparison with the POTW SPDES discharge limits, only lead and iron exceeded permit concentration values, no metal concentrations were above GMCH's SIU permit limits.

No pesticides or PCBs were detected in surface water samples at concentrations above their respective laboratory MDLs.

A summary of the detected analytical results for sewer system water samples is provided in Table 2A through Table 2C (surface water comparison) and Table 4A and Table 4B (POTW SPDES and SIU comparison).

3.3 SEDIMENT

Sediment criteria used for evaluating the sediment samples analytical data set were developed from the NYSDEC *Technical Guidance for Screening Contaminated Sediments* (NYSDEC, 1999). The guidance document presents concentration values for several levels of protection. EA has used either human health bioaccumulation or chronic toxicity to benthic aquatic life for evaluation purposes. The guidance values are calculated as a function of the TOC content of the sediment being evaluated. As part of this investigation, composite sediment samples were collected at each sampling location and analyzed for TOC. The TOC concentration was then utilized to calculate an average organic carbon concentration, the standard deviation within the data set, the 95 percent confidence limit concentration, and a lower confidence limit concentration value. At the direction of NYSDEC, EA utilized the lower confidence limit concentration value as the percent TOC (4.2569 percent) utilized in the derivation of the sediment criteria via equilibrium partitioning methodology. The TOC analytical data and sediment criteria guidance values are provided in Tables 5 and 6, respectively.

The analytical results of the sediment samples collected from the five locations within Gulf Creek revealed that concentrations of nine VOCs were detected at levels above the laboratory MDLs. Similar to the surface water analytical results, chlorinated VOCs (*cis*-1,2-DCE, PCE, and TCE) were reported in the sediment samples. Of the nine VOCs detected, only *cis*-1,2-DCE was reported at concentrations that exceeded the sediment criteria for human health bioaccumulation in sediment samples SD-01 (0-2 in.) and SD-02 (0-2 in.). It should be noted that the calculated sediment criteria for *cis*-1,2-DCE is actually lower than the laboratory MDLs. However, these results are consistent with the results of the sediment sampling conducted in 1997 and 2007 where chlorinated VOCs were detected, but only *cis*-1,2-DCE was above the respective sediment criteria. A general review of the sediment samples analytical results for VOCs reveals that the shallow samples (0-2 in.) reported a greater frequency of chlorinated VOC detections, while deeper interval samples (2-6 in.) reported primarily petroleum-related VOC detections.

Only the shallow sediment samples were submitted for analysis of SVOCs during this investigation. A total of 16 SVOCs were reported in at least one sediment sample collected from Gulf Creek. Five of the 16 SVOCs were reported at concentrations that exceeded sediment criteria for either benthic aquatic life chronic toxicity or human health bioaccumulation.

Benzo[b]fluoranthene was detected above the sediment criteria in each sediment sample. Indeno[1,2,3-cd]pyrene was above sediment criteria in four of five of the sediment samples, while benzo[a]pyrene was above standards in three of five. Both benzo[k]fluoranthene and dibenzo[a,h]anthracene were above the sediment criteria in two of the five samples. Each of the sediment sample exceedances were above calculated sediment criteria for human health bioaccumulation standards, none of the SVOCs detected exceeded the benthic aquatic life chronic toxicity values. Sediment samples SD-01 and SD-05 reported the highest number of SVOC exceedances, as well as the highest concentration values. Again the sediment samples analyzed for SVOCs during this investigation exhibited both a similar detected compound list, as well as concentration range of sediment samples collected in 1997 and 2007.

Sediment samples TAL metal analytical results were compared to the lower effect limits (LEL) and severe effect limits (SEL) found in Table 2 of the NYSDEC *Technical Guidance for Screening Contaminated Sediments*. Overall, 11 TAL metals were reported at concentrations that were above LELs, and of those 11, 6 were above SELs. SEL exceedances were reported for arsenic, copper, iron, lead, nickel, and zinc, with the most prevalent metals above the SELs standards being lead and zinc. Each sediment sample reported at least one metal above the SELs. Sediment samples collected at SD-03 reported the most TAL metals above LELs and SELs, as well as the highest overall TAL metal concentration values. Sediment sample SD-03 was collected from a location at the base of the waste/fill material, adjacent to the sewer manhole in the ravine. The other four sediment sampling locations were located along the stream channel defined by the discharge from the bulkhead outfall. In addition, the identical 11 TAL metal compounds were also reported above the LELs in sediment sample collected during the site investigation conducted in 2007.

After review of initial TAL metals analytical data results for sediment samples SD-01 (0-2 in.), SD-01 (2-6 in.), SD-02 (0-2 in.), and SD-03 (0-2 in.) and at the instruction of NYSDEC, EA contacted the analytical laboratory to have the select sediment samples additionally analyzed for total lead and TCLP lead. The concentrations for total lead were comparable with the initial analysis and none of the samples were identified as hazardous waste based on the TCLP analysis.

Three pesticides (dichlorodiphenyldichloroethane [DDD], dichlorodiphenyldichloroethylene [DDE], and dichlorodiphenyltrichloroethane [DDT]) were reported at concentrations above the laboratory MDLs. While the MDLs were higher than the calculated sediment criteria, two of the sediment sampling locations (SD-02 and SD-03) were above human health bioaccumulation criteria for DDD and two locations (SD-04 and SD-05) were above human health bioaccumulation criteria for DDE. No PCBs were detected at concentrations above the calculated sediment criteria.

A summary of the detected analytical results for sediment samples is provided in Table 7A through Table 7F and shown on Figure 7.

4. SUMMARY OF FINDINGS

The following sections briefly summarize the findings of the field investigation and sampling program conducted by EA and NYSDEC at the Old Upper Mountain Road site in November 2009 as part of the RI. The impacts associated with the evaluated environmental media are based on analytical results and their comparison with the appropriate SCGs. Contaminants of concern observed during this portion of the RI field investigation consist of chlorinated VOCs; namely *cis*-1,2-DCE, PCE, TCE, a number of TAL metals, SVOCs, and a limited number of pesticides.

4.1 SURFACE WATER QUALITY

Analytical results from the surface water and sewer water sampling conducted under this portion of the RI field investigation program indicated that chlorinated VOCs including *cis*-1,2-DCE, PCE, and TCE; and iron are present in surface water at concentrations above the applicable SCGs. Historical surface water sampling has documented that chlorinated VOCs have been persistent within Gulf Creek for over 10 years with detections of *cis*-1,2-DCE, PCE, and TCE dating back to 1997.

Chlorinated VOC concentrations increased at sampling locations located downstream where visible sheen was observed on the surface water. Identifying significant concentrations of chlorinated VOCs in surface water is considered fairly uncommon due to volatilization. The process of volatilization involves the movement of a compound from the surface of a liquid or solid medium to the vapor phase. Typically, only the neutral or uncharged form of a compound can volatilize. Volatilization is calculated from the equilibrium vapor pressure which is essentially the solubility of the compound in air (measured as a partial pressure). When measuring a compound's fate in the environment, a more widely used and manageable index is the Henry's Law Constant, which defines the ratio of a compound's vapor pressure and water solubility, reported in units of atm-m^3/moles or atm-m^3/L. Generally, compounds with a Henry's Law Constant of greater than 10^{-3} are readily volatized, compounds with constants of 10^{-3} to 10^{-5} are significantly volatized, and compounds with constants of less than 10^{-5} have limited volatility. The chlorinated VOCs identified in surface water have high Henry's Law Constant's (PCE – 1.84E-02, TCE – 1.03E-02), which typically means that these compounds will readily volatilize from surface waters.

4.2 SEWER EVALUATION

The sanitary sewer system associated with the Old Upper Mountain Road site has been defined via the liquid tracer dye testing. This sewer system receives discharge flow from a number of sewer lines including sewer lines originating along Park Avenue, Route 31, and a town of Lockport line that accepts discharge flow from GMCH. These sewer lines combine flow at the sewer manhole located at the end of Old Upper Mountain Road and then travel to the city of Lockport's POTW via the "Gulf Interceptor", a sewer line that runs beneath portions of Gulf

Creek and at the base of the ravine adjacent to the site. The sanitary sewer line cuts through the western portion of the site and is buried beneath the fill material.

The storm sewer system that exists to the west of Old Upper Mountain Road is still undefined as to the whereabouts of its origin and what additional flow/discharge/runoff, if any, contribute to this sewer system. It has been determined that the storm sewer ultimately discharges to the surface waters of Gulf Creek via the bulkhead outfall located in the western portion of the site. Based on the inspection of the storm sewer manhole, flow was entering the manhole from the west in the direction of GMCH.

Analytical results of the water samples (SW-01 and SW-03) collected from the sewer systems identified identical contaminants of concern, specifically *cis*-1,2-DCE, PCE, TCE, and iron, were reported in surface water samples collected at the bulkhead outfall and downstream sampling locations. Sewer system water sample results also reported concentrations of bis(2-Ethylhexyl)phthalate above surface water SCGs in both the sanitary and storm systems.

4.3 SEDIMENT

Analytical results from sediment samples collected from the upper portions of Gulf Creek have identified impacts exceeding the calculated sediment criteria SCGs for TAL metals, VOCs, SVOCs, and pesticides. As previously stated, there is distinct consistency in the detections and exceedances of the same chemical compounds within sediment samples collected from Gulf Creek both during this investigation and historical investigations conducted at the site.

The highest concentration values and frequency of exceeding SCGs was reported in sediment samples analyzed for TAL metals. Concentrations of 11 TAL metals exceeded LELs and 6 were above the SELs. Each sediment sample submitted for analysis reported at least three TAL metals above the LEL thresholds. Iron, which reported the highest concentration values of the metal analytes, was also present above SCGs in surface water samples collected from Gulf Creek. None of the sediment samples collected during this investigation were characterized as hazardous waste based on the TCLP analysis.

VOC concentrations of *cis*-1,2-DCE were above the calculated sediment criteria at two sediment sampling locations (SD-01 and SD-02). The detection of *cis*-1,2-DCE at concentration levels above sediment criteria has consistently been documented during historical investigations at the site. Additionally, the SVOCs and pesticides that were determined to be above the sediment criteria have also been identified in sediment samples collected from Gulf Creek in the past.

5. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on the site data collected during this field investigation and previous investigation work conducted at the site.

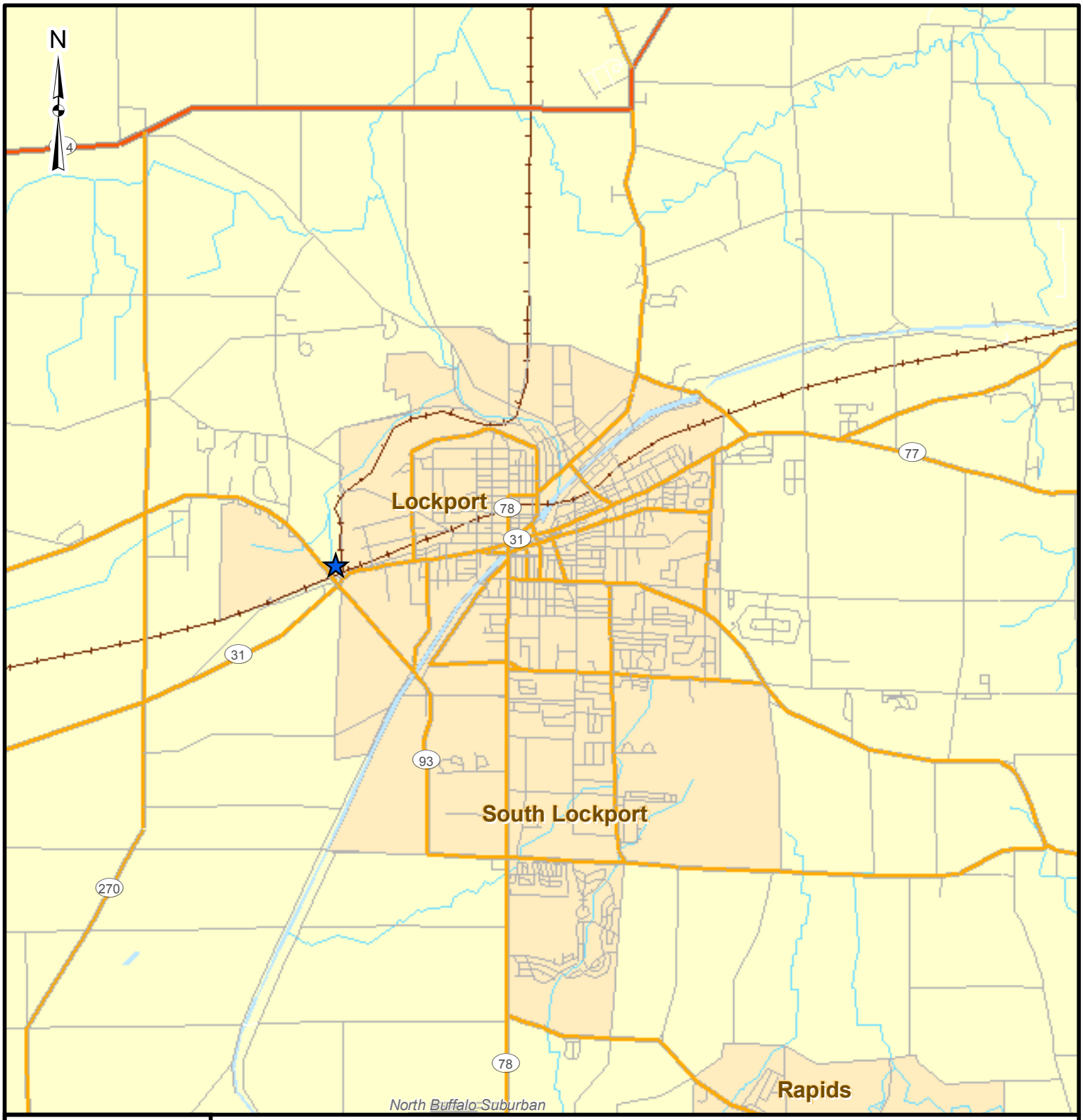
- Chlorinated VOCs have been identified in surface water within Gulf Creek, the storm sewer system that discharges into Gulf Creek, and the sanitary sewer system that intersects the western portion of the site. TCE was detected at concentrations exceeding surface water SCGs in discharge water collected from the bulkhead outfall in the western portion of the site. Downstream surface water sample SW-04 reported concentrations of *cis*-1,2-DCE, PCE, and TCE above SCGs. The consistent detections of chlorinated VOCs at both the bulkhead outfall and downstream locations suggest that the discharge stream from the storm sewer is contributing to VOC impacts observed in surface waters of Gulf Creek. The surface water of Gulf Creek presents the most immediate and potential exposure scenario to human health and the environment.

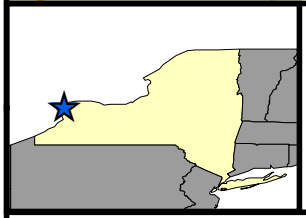
- Concentrations of TAL metals within the sediment of Gulf Creek were identified above SELs based on NYSDEC sediment criteria. Sediment with concentrations above SELs is considered contaminated and significant harm to benthic aquatic life would be anticipated.

- Sediment samples collected from Gulf Creek in each of the investigations conducted at the site have reported VOC, SVOC, and pesticide concentrations that exceed the corresponding calculated sediment criteria. These exceedances have been reasonably persistent with regard to compounds and concentration with detections dating back to 1997. The longevity of these compounds could be attributable to a continuing source(s) of contamination, stagnation, and limited flow volume within Gulf Creek in the sampling areas, and/or historical waste dumping into the ravine.

Based on the analytical data collected during this portion of the RI field investigation activities and previous investigations completed at the site, surface water and sediment within Gulf Creek have been impacted by VOCs, SVOCs, TAL metals, and pesticides. EA and NYSDEC have determined that additional surface water and sediment sampling will be conducted under the scope of the current RI to determine the extent of these impacts further downstream.

EA recommends further evaluation of the storm sewer system located to the west of Old Upper Mountain Road. This storm sewer system has been identified as a contributing source of VOCs to surface waters in Gulf Creek via the bulkhead outfall located in the western portion of the site. Identification of the origination and any associated conveyance systems related to this storm sewer would aid in determining the source of the VOCs.





Old Upper Mountain Road Site Location

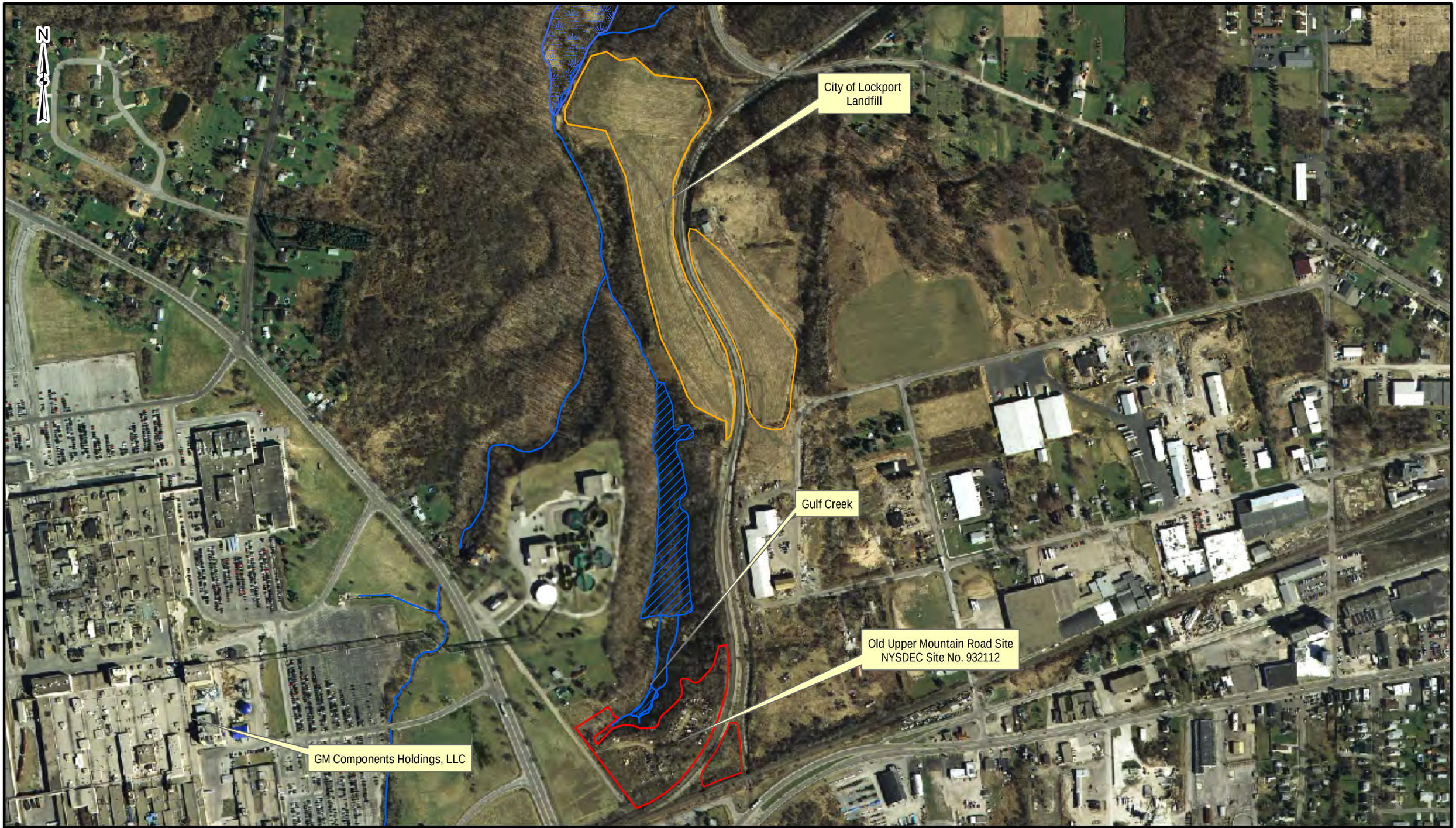
Miles
0 0.375 0.75 1.5 2.25 3

ESRI Street Maps USA

WORK ASSIGNMENT D004438-41
OLD UPPER MOUNTAIN ROAD SITE (932112)
LOCKPORT, NEW YORK

FIGURE 1
SITE LOCATION

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
RSC	MJS	MJS	RSC	AS SHOWN	MARCH 2010	14368.41	GIS/PROJECTS/ FIGURE1.MXD



WORK ASSIGNMENT D004438-41
OLD UPPER MOUNTAIN ROAD (932112)
LOCKPORT, NEW YORK

FIGURE 2
Site and Surrounding Area

0 250 500 1,000 Feet

Source: NYS GIS Clearing House

Legend

- Approximate Site Boundary
- Approximate City of Lockport Landfill Site Boundary
- Streams/Surface Water
- Water

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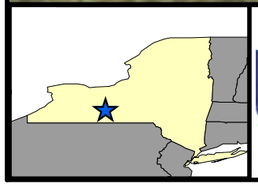

EA

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

WORK ASSIGNMENT D004438-41
OLD UPPER MOUNTAIN ROAD (932112)
LOCKPORT, NEW YORK

FIGURE 3
Environmental Sampling Locations
NYSDEC Site Investigation 2007

0 25 50 100 150 200 Feet

Source: NYS GIS Clearing House

Legend

- Surface Water Sample Location - 2007
- Sediment Sample Location - 2007
- Waste Sample Location - 2007
- Soil Boring Location - 2007

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RSC	RSC	JCP	RSC	14368.41	MARCH 2010	AS SHOWN	G:\Projects\State&Local\NYSDEC\D004438 - Inv_Des\1436841_Old Upper Mountain Road\GIS\Projects\Letter Report

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OLD UPPER MOUNTAIN ROAD (932112)
LOCKPORT, NEW YORK

FIGURE 4
Environmental Sampling Locations
Remedial Investigation
November 2009

0 25 50 100 150 200 Feet

Source: NYS GIS Clearing House

Legend

- Surface Water Sample Location - 2009
- Sediment Sample Location - 2009

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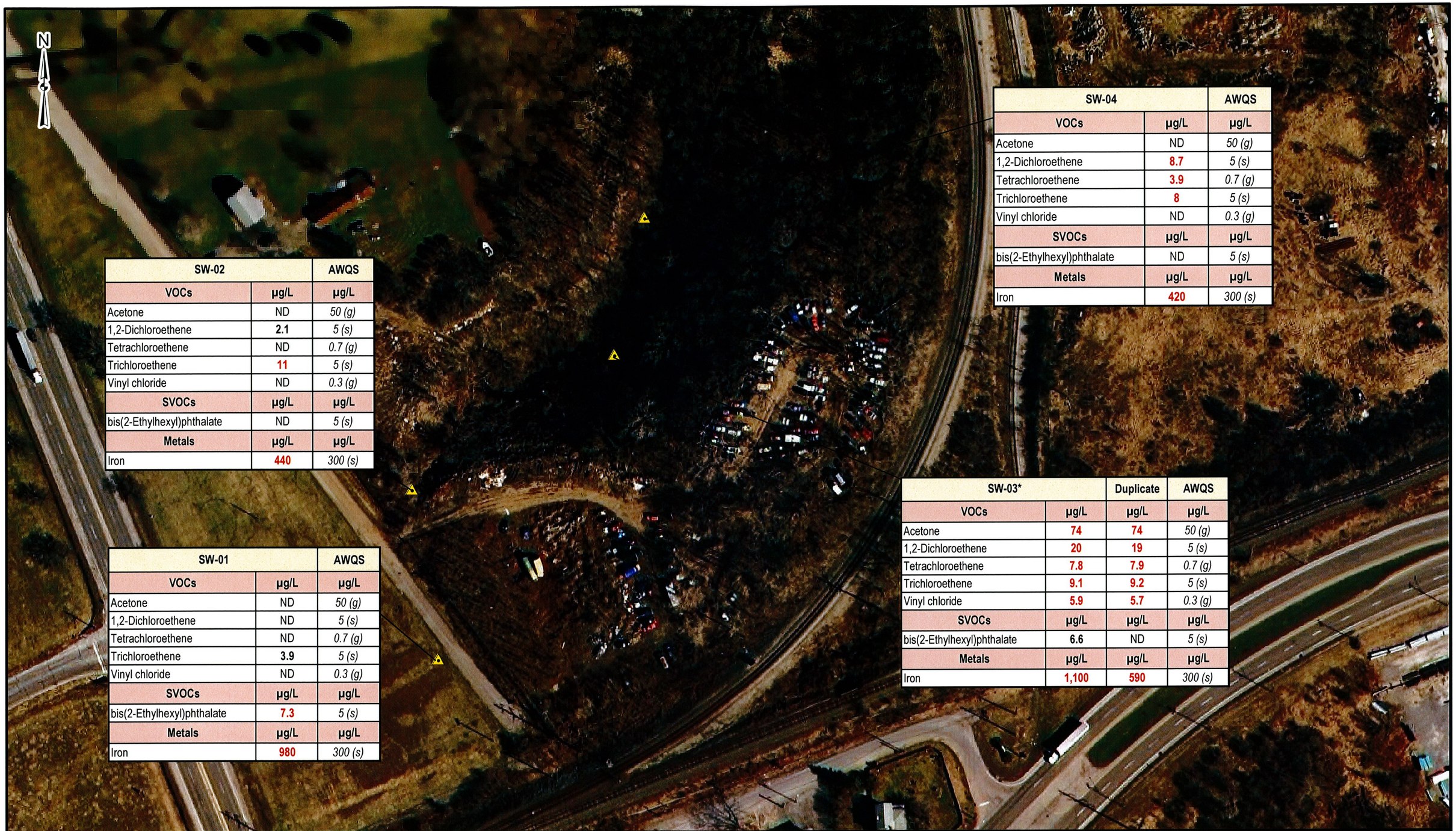
	WORK ASSIGNMENT D004438-41 OLD UPPER MOUNTAIN ROAD (932112) LOCKPORT, NEW YORK			FIGURE 5 Sewer System Layout		Feet 0 25 50 100 150 200		
	PROJECT MGR: RSC	DESIGNED BY: RSC	CREATED BY: JCP	CHECKED BY: RSC	PROJECT NO: 14368.41	DATE: MARCH 2010	SCALE: AS SHOWN	FILE NO: G:\Projects\State&Local\NYSDEC\D004438 - Inv_Des\1436841_Old Upper Mountain Road\GIS\Projects\Letter Report

Legend

Source: NYS GIS Clearing House

- Sanitary Sewer Manhole Location
- Unknown Sanitary Sewer Manhole
- Storm Sewer Manhole Location
- Catch Basin Location
- Bulkhead Outfall Location
- Sanitary Sewer System Flow Direction
- Storm Sewer System Flow Direction



SW-02		AWQS
VOCs	**µg/L**	**µg/L**
Acetone	ND	*50 (g)*
1,2-Dichloroethene	**2.1**	*5 (s)*
Tetrachloroethene	ND	*0.7 (g)*
Trichloroethene	**11**	*5 (s)*
Vinyl chloride	ND	*0.3 (g)*
SVOCs	**µg/L**	**µg/L**
bis(2-Ethylhexyl)phthalate	ND	*5 (s)*
Metals	**µg/L**	**µg/L**
Iron	**440**	*300 (s)*

SW-04		AWQS
VOCs	**µg/L**	**µg/L**
Acetone	ND	*50 (g)*
1,2-Dichloroethene	**8.7**	*5 (s)*
Tetrachloroethene	**3.9**	*0.7 (g)*
Trichloroethene	**8**	*5 (s)*
Vinyl chloride	ND	*0.3 (g)*
SVOCs	**µg/L**	**µg/L**
bis(2-Ethylhexyl)phthalate	ND	*5 (s)*
Metals	**µg/L**	**µg/L**
Iron	**420**	*300 (s)*

SW-01		AWQS
VOCs	**µg/L**	**µg/L**
Acetone	ND	*50 (g)*
1,2-Dichloroethene	ND	*5 (s)*
Tetrachloroethene	ND	*0.7 (g)*
Trichloroethene	**3.9**	*5 (s)*
Vinyl chloride	ND	*0.3 (g)*
SVOCs	**µg/L**	**µg/L**
bis(2-Ethylhexyl)phthalate	**7.3**	*5 (s)*
Metals	**µg/L**	**µg/L**
Iron	**980**	*300 (s)*

SW-03*		Duplicate	AWQS
VOCs	**µg/L**	**µg/L**	**µg/L**
Acetone	**74**	**74**	*50 (g)*
1,2-Dichloroethene	**20**	**19**	*5 (s)*
Tetrachloroethene	**7.8**	**7.9**	*0.7 (g)*
Trichloroethene	**9.1**	**9.2**	*5 (s)*
Vinyl chloride	**5.9**	**5.7**	*0.3 (g)*
SVOCs	**µg/L**	**µg/L**	**µg/L**
bis(2-Ethylhexyl)phthalate	**6.6**	ND	*5 (s)*
Metals	**µg/L**	**µg/L**	**µg/L**
Iron	**1,100**	**590**	*300 (s)*

WORK ASSIGNMENT D004438-41
OLD UPPER MOUNTAIN ROAD (932112)
LOCKPORT, NEW YORK

FIGURE 6
Surface Water/Sewer Manhole
Analytical Results

Feet
0 25 50 100 150 200

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RSC	RSC	JCP	RSC	14368.41	MARCH 2010	AS SHOWN	G:\Projects\State&Local\ NYSDEC\D004438 - Inv_Des\ 1436841_Old Upper Mountain Road\ GIS\Projects\Letter Report

Legend

Source: NYS GIS Clearing House

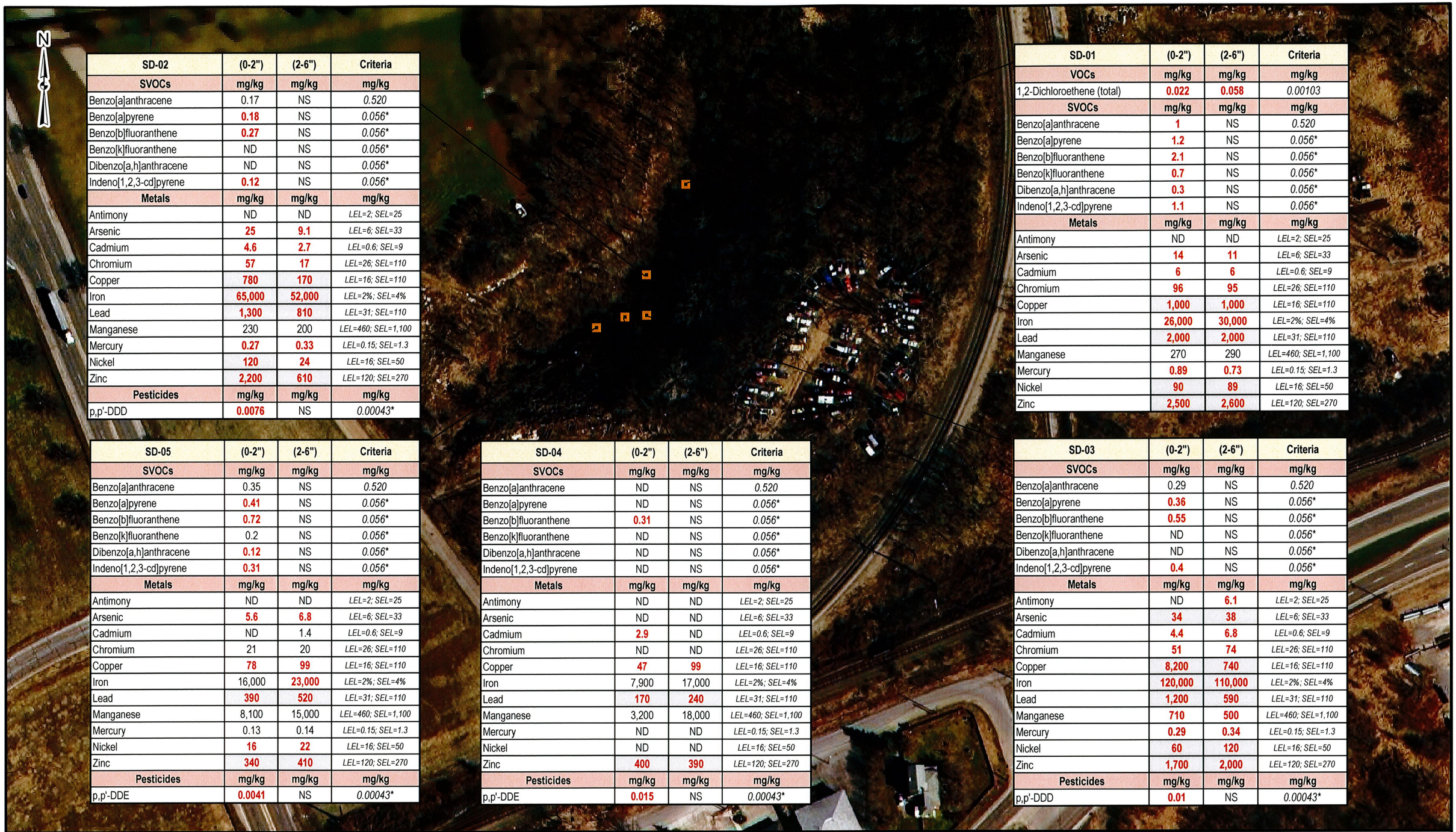
Surface Water/Sewer Manhole Sampling Location

* = Water sample collected from within the sanitary sewer system, surface water entering the manhole.

ND = Non-detect

ug/L = Micrograms per liter = parts per billion (ppb)

Values in RED indicate concentration is above the NYSDEC AWQS for Class A waters, Type H(WS).



SD-02	(0-2")	(2-6")	Criteria
SVOCs	**mg/kg**	**mg/kg**	**mg/kg**
Benzo[a]anthracene	0.17	NS	*0.520*
Benzo[a]pyrene	**0.18**	NS	*0.056**
Benzo[b]fluoranthene	**0.27**	NS	*0.056**
Benzo[k]fluoranthene	ND	NS	*0.056**
Dibenzo[a,h]anthracene	ND	NS	*0.056**
Indeno[1,2,3-cd]pyrene	**0.12**	NS	*0.056**
Metals	**mg/kg**	**mg/kg**	**mg/kg**
Antimony	ND	ND	*LEL=2; SEL=25*
Arsenic	**25**	**9.1**	*LEL=6; SEL=33*
Cadmium	**4.6**	**2.7**	*LEL=0.6; SEL=9*
Chromium	**57**	**17**	*LEL=26; SEL=110*
Copper	**780**	**170**	*LEL=16; SEL=110*
Iron	**65,000**	**52,000**	*LEL=2%; SEL=4%*
Lead	**1,300**	**810**	*LEL=31; SEL=110*
Manganese	230	200	*LEL=460; SEL=1,100*
Mercury	**0.27**	**0.33**	*LEL=0.15; SEL=1.3*
Nickel	**120**	**24**	*LEL=16; SEL=50*
Zinc	**2,200**	**610**	*LEL=120; SEL=270*
Pesticides	**mg/kg**	**mg/kg**	**mg/kg**
p,p'-DDD	**0.0076**	NS	*0.00043**

SD-05	(0-2")	(2-6")	Criteria
SVOCs	**mg/kg**	**mg/kg**	**mg/kg**
Benzo[a]anthracene	0.35	NS	*0.520*
Benzo[a]pyrene	**0.41**	NS	*0.056**
Benzo[b]fluoranthene	**0.72**	NS	*0.056**
Benzo[k]fluoranthene	0.2	NS	*0.056**
Dibenzo[a,h]anthracene	**0.12**	NS	*0.056**
Indeno[1,2,3-cd]pyrene	**0.31**	NS	*0.056**
Metals	**mg/kg**	**mg/kg**	**mg/kg**
Antimony	ND	ND	*LEL=2; SEL=25*
Arsenic	**5.6**	**6.8**	*LEL=6; SEL=33*
Cadmium	ND	1.4	*LEL=0.6; SEL=9*
Chromium	21	20	*LEL=26; SEL=110*
Copper	**78**	**99**	*LEL=16; SEL=110*
Iron	16,000	**23,000**	*LEL=2%; SEL=4%*
Lead	**390**	**520**	*LEL=31; SEL=110*
Manganese	8,100	15,000	*LEL=460; SEL=1,100*
Mercury	0.13	0.14	*LEL=0.15; SEL=1.3*
Nickel	**16**	**22**	*LEL=16; SEL=50*
Zinc	**340**	**410**	*LEL=120; SEL=270*
Pesticides	**mg/kg**	**mg/kg**	**mg/kg**
p,p'-DDE	**0.0041**	NS	*0.00043**

SD-04	(0-2")	(2-6")	Criteria
SVOCs	**mg/kg**	**mg/kg**	**mg/kg**
Benzo[a]anthracene	ND	NS	*0.520*
Benzo[a]pyrene	ND	NS	*0.056**
Benzo[b]fluoranthene	**0.31**	NS	*0.056**
Benzo[k]fluoranthene	ND	NS	*0.056**
Dibenzo[a,h]anthracene	ND	NS	*0.056**
Indeno[1,2,3-cd]pyrene	ND	NS	*0.056**
Metals	**mg/kg**	**mg/kg**	**mg/kg**
Antimony	ND	ND	*LEL=2; SEL=25*
Arsenic	ND	ND	*LEL=6; SEL=33*
Cadmium	**2.9**	ND	*LEL=0.6; SEL=9*
Chromium	ND	ND	*LEL=26; SEL=110*
Copper	**47**	**99**	*LEL=16; SEL=110*
Iron	7,900	17,000	*LEL=2%; SEL=4%*
Lead	**170**	**240**	*LEL=31; SEL=110*
Manganese	3,200	18,000	*LEL=460; SEL=1,100*
Mercury	ND	ND	*LEL=0.15; SEL=1.3*
Nickel	ND	ND	*LEL=16; SEL=50*
Zinc	**400**	**390**	*LEL=120; SEL=270*
Pesticides	**mg/kg**	**mg/kg**	**mg/kg**
p,p'-DDE	**0.015**	NS	*0.00043**

SD-01	(0-2")	(2-6")	Criteria
VOCs	**mg/kg**	**mg/kg**	**mg/kg**
1,2-Dichloroethene (total)	**0.022**	**0.058**	*0.00103*
SVOCs	**mg/kg**	**mg/kg**	**mg/kg**
Benzo[a]anthracene	**1**	NS	*0.520*
Benzo[a]pyrene	**1.2**	NS	*0.056**
Benzo[b]fluoranthene	**2.1**	NS	*0.056**
Benzo[k]fluoranthene	**0.7**	NS	*0.056**
Dibenzo[a,h]anthracene	**0.3**	NS	*0.056**
Indeno[1,2,3-cd]pyrene	**1.1**	NS	*0.056**
Metals	**mg/kg**	**mg/kg**	**mg/kg**
Antimony	ND	ND	*LEL=2; SEL=25*
Arsenic	**14**	**11**	*LEL=6; SEL=33*
Cadmium	**6**	**6**	*LEL=0.6; SEL=9*
Chromium	**96**	**95**	*LEL=26; SEL=110*
Copper	**1,000**	**1,000**	*LEL=16; SEL=110*
Iron	**26,000**	**30,000**	*LEL=2%; SEL=4%*
Lead	**2,000**	**2,000**	*LEL=31; SEL=110*
Manganese	270	290	*LEL=460; SEL=1,100*
Mercury	**0.89**	**0.73**	*LEL=0.15; SEL=1.3*
Nickel	**90**	**89**	*LEL=16; SEL=50*
Zinc	**2,500**	**2,600**	*LEL=120; SEL=270*

SD-03	(0-2")	(2-6")	Criteria
SVOCs	**mg/kg**	**mg/kg**	**mg/kg**
Benzo[a]anthracene	0.29	NS	*0.520*
Benzo[a]pyrene	**0.36**	NS	*0.056**
Benzo[b]fluoranthene	**0.55**	NS	*0.056**
Benzo[k]fluoranthene	ND	NS	*0.056**
Dibenzo[a,h]anthracene	ND	NS	*0.056**
Indeno[1,2,3-cd]pyrene	**0.4**	NS	*0.056**
Metals	**mg/kg**	**mg/kg**	**mg/kg**
Antimony	ND	**6.1**	*LEL=2; SEL=25*
Arsenic	**34**	**38**	*LEL=6; SEL=33*
Cadmium	**4.4**	**6.8**	*LEL=0.6; SEL=9*
Chromium	**51**	**74**	*LEL=26; SEL=110*
Copper	**8,200**	**740**	*LEL=16; SEL=110*
Iron	**120,000**	**110,000**	*LEL=2%; SEL=4%*
Lead	**1,200**	**590**	*LEL=31; SEL=110*
Manganese	**710**	**500**	*LEL=460; SEL=1,100*
Mercury	**0.29**	**0.34**	*LEL=0.15; SEL=1.3*
Nickel	**60**	**120**	*LEL=16; SEL=50*
Zinc	**1,700**	**2,000**	*LEL=120; SEL=270*
Pesticides	**mg/kg**	**mg/kg**	**mg/kg**
p,p'-DDD	**0.01**	NS	*0.00043**

WORK ASSIGNMENT D004438-41
OLD UPPER MOUNTAIN ROAD (932112)
LOCKPORT, NEW YORK

FIGURE 7
Sediment Analytical Results

Feet
0 25 50 100 150 200

Source: NYS GIS Clearing House

Legend
- Sediment Sampling Location
- ND = Non-detect
- NS = No Sample Collected
- mg/kg = milligrams per kilogram = parts per million (ppm)

Values in RED indicate concentration is above the NYSDEC Sediment Criteria and/or lowest effect levels (LEL), shaded values were above the severe effect level (SEL).

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	PROJECT NO:	DATE:	SCALE:	FILE NO:
RSC	RSC	JCP	RSC	14368.41	MARCH 2010	AS SHOWN	G:\Projects\State&Local\NYSDEC\D004438 - Inv_Des\1436841_Old Upper Mountain Road\GIS\Projects\Letter Report

TABLE 1 FIELD INVESTIGATION SAMPLING AND ANALYTICAL PROGRAM

	Sample Matrix	VOCs	SVOCs	TAL Metals	Pest/PCB	TOC	Lead (Total)	TCLP Lead
SURFACE WATER SAMPLING								
No. of Samples	Aqueous	2	2	2				
Field Duplicate		---	---	---				
Trip Blank [(a)]		1	---	---				
MS/MSD		2	2	2				
Total No. of Analyses		**5**	**4**	**4**				
SEDIMENT SAMPLING								
No. of Samples	Non-aqueous	7	5	10	5	5	4	4
Field Duplicate		1	1	1	1	---	---	---
Rinsate Blank[(b)]		1	1	1	1	---	---	---
MS/MSD		2	2	2	2	---	---	---
Total No. of Analyses		**11**	**9**	**14**	**9**	**5**	**4**	**4**
SEWER MANHOLE SAMPLING								
No. of Samples	Aqueous	2	2	2				
Field Duplicate		1	1	1				
Trip Blank		---	---	---				
MS/MSD		---	---	---				
Total No. of Analyses		**3**	**3**	**3**				

(a) Trip blanks are required for VOC sampling of aqueous media at a rate of one per sample shipment.
(b) One rinsate blank per day of sampling with a field device that requires field decontamination.

NOTE: VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TAL = Target Analyte List
PCB = Polychlorinated Biphynels
TOC = Total Organic Carbon
TCLP = Toxicity Characteristics Leaching Procedure
--- = No Sample Taken
MS/MSD= Matrix Spike/Matrix Spike Duplicate
Laboratory quality control samples will be collected at a rate of 1 per 20 samples, per matrix.

TABLE 2A DETECTED VOLATILE ORGANIC COMPOUNDS SURFACE WATER/SEWER MANHOLE ANALYTICAL DATA

Parameter List USEPA Method 8260B	Sample ID	932112-SW-01		932112-SW-02		932112-SW-03		932112-SW-04		DUPLICATE[a]		Trip Blank		NYSDEC Ambient Water Quality Standard Class A, Type H(WS) (µg/L)
	Lab ID	AC48479-001		AC48479-002		AC48479-003		AC48479-004		AC48479-005		AC48479-008		
	Sample Type	Manhole		Surface Water		Manhole		Surface Water		QA/QC		QA/QC		
	Sample Date	11/19/2009		11/19/2009		11/19/2009		11/19/2009		11/19/2009		NA		
Acetone	(µg/L)	(<5.0)	U	(<5.0)	U	**74**		(<5.0)	U	**74**		(<5.0)	U	50 (g)
Chloroform	(µg/L)	(<0.5)	U	2.4		1.4		(<0.5)	U	1.3		(<0.5)	U	7 (s)
1,2- Dichloroethene (total)	(µg/L)	(<0.5)	U	2.1		**20**		**8.7**		**19**		(<0.5)	U	5 (s)
Tetrachloroethene	(µg/L)	(<0.5)	U	(<0.5)	U	**7.8**		**3.9**		**7.9**		(<0.5)	U	0.7 (g)
Trichloroethene	(µg/L)	3.9		**11**		**9.1**		**8.0**		**9.2**		(<0.5)	U	5 (s)
Vinyl chloride	(µg/L)	(<0.5)	U	(<0.5)	U	**5.9**		(<0.5)	U	**5.7**		(<0.5)	U	0.3 (g)

(a) Duplicate sample collected at 932112-SW-03.

NOTE: USEPA = United States Enivronmental Protection Agency
NYSDEC = New York State Department of Environmental Conservation
QA/QC = Quality Assurance/Quality Control
NA = Not Applicable
µg/L = mircograms per liter = parts per billion (ppb)
U = Non-detect, detection below the method detection limit
(g) = Value is listed as a guidance value.
(s) = Value is listed as a standard value.
Concentration values in **bold** indicate that analyte was detecetd above the NYSDEC AWQS for Class A waters.
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown. Data validation to be completed by Chemworld Environmental,

TABLE 2B DETECTED SEMIVOLATILE ORGANIC COMPOUNDS SURFACE WATER/SEWER MANHOLE ANALYTICAL DATA

Parameter List USEPA Method 8270C	Sample ID	932112-SW-01		932112-SW-02		932112-SW-03		932112-SW-04		DUPLICATE[a]		NYSDEC Ambient Water Quality Standard Class A, Type H(WS) (µg/L)
	Lab ID	AC48479-001		AC48479-002		AC48479-003		AC48479-004		AC48479-005		
	Sample Type	Manhole		Surface Water		Manhole		Surface Water		QA/QC		
	Sample Date	11/19/2009		11/19/2009		11/19/2009		11/19/2009		11/19/2009		
bis(2-Ethylhexyl)phthalate	(µg/L)	**7.3**		(<2.0)	U	**6.6**		(<2.1)	U	(<2.2)	U	5 (s)

(a) Duplicate sample collected at 932112-SW-03.

NOTE: USEPA = United States Enivronmental Protection Agency
NYSDEC = New York State Department of Environmental Conservation
QA/QC = Quality Assurance/Quality Control
µg/L = mircograms per liter
U = Non-detect, detection below the method detection limit
(s) = Value is listed as a standard value.
Concentration values in bold indicate that analyte was detecetd above the NYSDEC AWQS for Class A waters.
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown. Data validation to be

TABLE 2C DETECTED TARGET ANALYTE LIST METALS SURFACE WATER/SEWER MANHOLE ANALYTICAL DATA

Parameter List USEPA Method 6010B/200.7/200.8	Sample ID	932112-SW-01		932112-SW-02		932112-SW-03		932112-SW-04		DUPLICATE[a]		NYSDEC Ambient Water Quality Standard Class A, Type H(WS) (µg/L)
	Lab ID	AC48479-001		AC48479-002		AC48479-003		AC48479-004		AC48479-005		
	Sample Type	Manhole		Surface Water		Manhole		Surface Water		QA/QC		
	Sample Date	11/19/2009		11/19/2009		11/19/2009		11/19/2009		11/19/2009		
Calcium	(µg/L)	41,000		47,000		41,000		68,000		29,000		---
Iron	(µg/L)	**980**		**440**		**1,100**		**420**		**590**		300 (s)
Lead	(µg/L)	16		(<4.0)	U	27		9.1		(<4.0)	U	50 (s)
Mangnesium	(µg/L)	10,000		12,000		11,000		22,000		7,300		35,000 (s)
Manganese	(µg/L)	55		(<40)	U	53		(<40)		(<40)	U	300 (s)
Potassium	(µg/L)	12,000		(<5,000)	U	11,000		(<5,000)		(<5,000)	U	---
Sodium	(µg/L)	93,000		150,000		96,000		100,000		110,000		---[b]
Zinc	(µg/L)	170		(<50)	U	160		120		(<50)	U	2,000 (g)

(a) Duplicate sample collected at 932112-SW-03.

(b) No standard or guidance value listed for Class A water, Class GA (groundwater) standard is 20,000 µg/L

NOTE: USEPA = United States Enivronmental Protection Agency
NYSDEC = New York State Department of Environmental Conservation
QA/QC = Quality Assurance/Quality Control
µg/L = mircograms per liter
--- = No applicable Ambient Water Quality Standard available
U = Non-detect, detection below the method detection limit
(s) = Value is listed as a standard value.
(g) = Value is listed as a guidance value.
Concentration values in **bold** indicate that analyte was detecetd above the NYSDEC AWQS for Class A waters.
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown. Data validation to be completed by Chemworld Environmental, Inc.

TABLE 3 HISTORICAL SURFACE WATER TOTAL CVOC CONCENTRATIONS

SURFACE WATER SAMPLES COLLECTED AT THE BULKHEAD OUTFALL				
Collection Date	Nov-97	Oct-98	Jun-07	Nov-09
Total CVOC Concentration (µg/L)	NC	NC	25	13.1
SURFACE WATER SAMPLES DOWNSTREAM OF BULKHEAD OUTFALL IN GULF CREEK				
Collection Date	Nov-97	Oct-98	Jun-07	Nov-09
Total CVOC Concentration (µg/L)	22 J	318.5	19.1	20.6

NOTE: CVOCs = Chlorinated volatile organic compounds
µg/L = Micrograms per Liter
NC = No sample collected

TABLE 4A DETECTED VOLATILE ORGANIC COMPOUNDS SEWER MANHOLE ANALYTICAL DATA

Parameter List USEPA Method 8260B	Sample ID	932112-SW-03		DUPLICATE[a]		Trip Blank		City of Lockport POTW SPDES Permit Discharge Limits[b] (Permit No. NY 002 7057) (µg/L)
	Lab ID	AC48479-003		AC48479-005		AC48479-008		
	Sample Type	Manhole		QA/QC		QA/QC		
	Sample Date	11/19/2009		11/19/2009		NA		
Acetone	(µg/L)	74		74		(<5.0)	U	---
Chloroform	(µg/L)	1.4		1.3		(<0.5)	U	---
cis -1,2- Dichloroethene	(µg/L)	20		19		(<0.5)	U	33
Tetrachloroethene	(µg/L)	7.8		7.9		(<0.5)	U	15
Trichloroethene	(µg/L)	9.1		9.2		(<0.5)	U	32
Vinyl chloride	(µg/L)	5.9		5.7		(<0.5)	U	---

(a) Duplicate sample collected at 932112-SW-03.

(b) 2006. Appendix N. CSO Charaterization and Monitoring Report for the City of Lockport. Clough, Harbour & Associates LLP. October.

NOTE: USEPA = United States Enivronmental Protection Agency
POTW = Publicly Owned Treatment Works
SPDES = State Pollutant Discharge Elimination System
QA/QC = Quality Assurance/Quality Control
µg/L = mircograms per liter
U = Non-detect, detection below the method
--- = No value listed in permit.
Data validation to be completed by Chemworld Environmental, Inc.
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown.

TABLE 4B DETECTED TARGET ANALYTE LIST METALS SEWER MANHOLE ANALYTICAL DATA

Parameter List USEPA Method 6010B/200.7/200.8	Sample ID	932112-SW-03		DUPLICATE[a]		City of Lockport POTW SPDES Permit Discharge Limits[b] (Permit No. NY 002 7057) (µg/L)	GMCH Significant Industrial User Permit Discharge Limits (Permit No. CL860103) (µg/L)
	Lab ID	AC48479-003		AC48479-005			
	Sample Type	Manhole		QA/QC			
	Sample Date	11/19/2009		11/19/2009			
Calcium	(µg/L)	41,000		29,000		---	---
Iron	(µg/L)	**1,100**		**590**		410	---
Lead	(µg/L)	**27**		(<4.0)	U	8	200
Mangnesium	(µg/L)	11,000		7,300		---	---
Manganese	(µg/L)	53		(<40)	U	---	---
Potassium	(µg/L)	11,000		(<5,000)	U	---	---
Sodium	(µg/L)	96,000		110,000		---	---
Zinc	(µg/L)	160		(<50)	U	231	2,800

(a) Duplicate sample collected at 932112-SW-03.

(b) 2006. Appendix N. CSO Charaterization and Monitoring Report for the City of Lockport. Clough, Harbour & Associates LLP. October.

NOTE: USEPA = United States Enivronmental Protection Agency
POTW = Publicly Owned Treatment Works
SPDES = State Pollutant Discharge Elimination System
GMCH = GM Components Holdings, LLC
QA/QC = Quality Assurance/Quality Control
µg/L = mircograms per liter = parts per billion (ppb)
--- = No value listed in permit.
U = Non-detect, detection below the method detection limit
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown. Data validation to be completed by Chemworld
Concentration values in **bold** indicate that analyte was detecetd above the SPDES Permit Limit.

TABLE 5 TOTAL ORGANIC CARBON SEDIMENT ANALYTICAL RESULTS

Parameter List USEPA Method 9060	Sample ID	932112-SD-01 (0-6")	932112-SD-02 (0-6")	932112-SD-03 (0-6")	932112-SD-04 (0-6")	932112-SD-05 (0-6")
	Lab ID	AC48527-003	AC48527-006	AC48527-009	AC48527-013	AC48527-016
	Sample Type	Sediment/Composite	Sediment/Composite	Sediment/Composite	Sediment/Composite	Sediment/Composite
	Sample Date	11/20/2009	11/20/2009	11/20/2009	11/20/2009	11/20/2009
Total Organic Carbon	(mg/kg)	76,000	200,000	48,000	250,000	50,000
Average Organic Carbon (OC)	mgOC/kg	124,800				
Standard Deviation	mgOC/kg	93,815				
Confidence Limit (95%)	mgOC/kg	82,231				
Lower Confidence Limit	mgOC/kg	42,569				

NOTE: USEPA = United States Enivronmental Protection Agency
mg/kg = milligrams per kilogram
Data provided by Hampton-Clarke Veritech. Data validation to be completed by Chemworld Environmental, Inc.

TABLE 6 DERIVATION OF SEDIMENT CRITERIA FOR SELECT CONTAMINANTS OF CONCERN

				Human Health Bioaccumulation			Benthic Aquatic Life Acute Toxicity			Benthic Aquatic Life Chronic Toxicity			Wildlife Bioaccumulation		
Contaminant	Log Kow	Value Kow	% Carbon	Water Criteria µg/l	Sediment Criteria µg/gOC	Sediment Criteria µg/kg	Water Criteria µg/l	Sediment Criteria µg/gOC	Sediment Criteria µg/kg	Water Criteria µg/l	Sediment Criteria µg/gOC	Sediment Criteria µg/kg	Water Criteria µg/l	Sediment Criteria µg/gOC	Sediment Criteria µg/kg
VOLATILE ORGANIC COMPOUNDS															
1,2-Dichloroethene	1.48	30.2	4.2569	0.8000	0.0200	1.0285									
Tetrachloroethene	2.88	758.6	4.2569	1.0000	0.8000	32.2919									
Trichloroethene	2.29	195.0	4.2569	11.0000	2.0000	91.3032									
SEMIVOLATILE ORGANIC COMPOUNDS															
Acenaphthene	4.33	21,379.6	4.2569								140.0000	5959.6600			
Anthracene	4.45	28,183.8	4.2569				35.0000	986.0000	41991.5101	3.8000	107.0000	4559.0782			
Benzo(a)pyrene	6.04	1,096,478.2	4.2569	0.0012	1.3000	56.0112									
Benzo(a)anthracene	5.61	407,380.3	4.2569				0.2300	94.0000	3988.6073	0.0300	12.0000	520.2531			
" "	6.04	1,096,478.2	4.2569	0.0012	1.3000	56.0112									
Benzo(b)fluoranthene	6.04	1,096,478.2	4.2569	0.0012	1.3000	56.0112									
Benzo(g,h,i)perylene			4.2569												
Benzo(k)fluoranthene	6.04	1,096,478.2	4.2569	0.0012	1.3000	56.0112									
Bis(2-ethylhexyl)phthalate	5.3	199,526.2	4.2569							0.6000	199.5000	5096.1793			
Carbazole			4.2569												
Chrysene	6.04	1,096,478.2	4.2569	0.0012	1.3000	56.0112									
Dibenzo(a,h)anthracene			4.2569												
Dibenzofuran			4.2569												
Di-n-butylphthalate			4.2569												
Fluoranthene	5.19	154,881.7	4.2569								1020.0000	43420.3800			
Fluorene	4.18	15,135.6	4.2569				4.8000	73.0000	3092.6779	0.5400	8.0000	347.9263			
Indeno(1,2,3-cd)pyrene	6.04	1,096,478.2	4.2569	0.0012	1.3000	56.0112									
2-Methylnaphthalene	3.86	7,244.4	4.2569				42.0000	304.0000	12952.1760	4.7000	34.0000	1449.4102			
Naphthalene	3.37	2,344.2	4.2569				110.0000	258.0000	10977.0624	13.0000	30.0000	1297.2892			
Phenanthrene	4.45	28,183.8	4.2569								120.0000	5108.2800			
Pyrene	5.32	208,929.6	4.2569				42.0000	8775.0000	373544.8374	4.6000	961.0000	40912.0536			
PESTICIDES/POLYCHLORINATED BIPHENYLS															
Aldrin	5.0	100,000.0	4.2569	0.0010000	0.1000	4.2569							0.0077	0.7700	32.7781
a-BHC	3.8	6,309.6	4.2569	0.0090000	0.0600	2.4173	2.0000	12.6000	537.1845	0.0100	0.0600	2.6859	0.2300	1.5000	61.7762
d-BHC	3.8	6,309.6	4.2569	0.0090000	0.0600	2.4173	2.0000	12.6000	537.1845	0.0100	0.0600	2.6859	0.2300	1.5000	61.7762
g-BHC (Lindane)	3.8	6,309.6	4.2569	0.0090000	0.0600	2.4173	2.0000	12.6000	537.1845	0.0100	0.0600	2.6859	0.2300	1.5000	61.7762
Chlordane	2.78	602.6	4.2569	0.0020000	0.0010	0.0513	2.4000	1.4000	61.5609	0.0430	0.0300	1.1030	0.0100	0.0060	0.2565
4,4'-DDD	6.0	1,000,000.0	4.2569	0.0000100	0.0100	0.4257							0.0010	1.0000	42.5690
4,4'-DDE	6.0	1,000,000.0	4.2569	0.0000100	0.0100	0.4257							0.0010	1.0000	42.5690
4,4'-DDT	6.0	1,000,000.0	4.2569	0.0000100	0.0100	0.4257	1.1000	1100.0000	46825.9000	0.0010	1.0000	42.5690	0.0010	1.0000	42.5690
Dieldrin	5.0	100,000.0	4.2569	0.0010000	0.1000	4.2569					9.0000	383.1210	0.0077	0.7700	32.7781
Endosulfan (I)	3.55	3,548.1	4.2569				0.2200	0.7800	33.2289	0.0090	0.0300	1.3594			
Endosulfan (II)	3.55	3,548.1	4.2569				0.2200	0.7800	33.2289	0.0090	0.0300	1.3594			
Endosulfan Sulfate			4.2569												
Endrin	5.6	398,107.2	4.2569	0.0020000	0.8000	33.8940					4.0000	170.2760	0.0019	0.8000	32.1993
Endrin Ketone			4.2569												
Heptachlor	4.4	25,118.9	4.2569	0.0000300	0.0008	0.0321	0.5200	13.1000	556.0282	0.0038	0.1000	4.0633	0.0010	0.0300	1.0693
Heptachlor Epoxide	4.4	25,118.9	4.2569	0.0000300	0.0008	0.0321	0.5200	13.1000	556.0282	0.0038	0.1000	4.0633	0.0010	0.0300	1.0693
Methoxychlor	4.3	19,952.6	4.2569							0.0300	0.6000	25.4809			
PCBs (Total)	6.14	1,380,384.3	4.2569	0.0000006	0.0008	0.0353	2.0000	2760.8000	117523.1555	0.0140	19.3000	822.6621	0.0010	1.4000	58.7616

TABLE 7A DETECTED VOLATILE ORGANIC COMPOUNDS SEDIMENT ANALYTICAL DATA

Parameter List USEPA Method 8260B	Sample ID	932112-SD-01 (0-2")		932112-SD-02 (0-2")		932112-SD-03 (0-2")		932112-SD-04 (0-2")		932112-SD-04 (2-6")		Sediment Criteria Human Health Bioaccumulation (mg/kg)
	Lab ID	AC48527-001		AC48527-004		AC48527-007		AC48527-011		AC48527-012		
	Sample Type	Sediment		Sediment		Sediment		Sediment		Sediment		
	Sample Date	11/20/2009		11/20/2009		11/20/2009		11/20/2009		11/20/2009		
Acetone	(mg/kg)	(<0.1)	U	(<0.04)	U	0.18		(<0.11)	U	1.3		---
2- Butanone	(mg/kg)	(<0.02)	U	(<0.0083)	U	(<0.01)	U	(<0.02)	U	0.2		---
1,2- Dichloroethene (total)	(mg/kg)	**0.022**		**0.058**		(<0.01)	U	(<0.02)	U	(<0.02)	U	0.00103
Methylene Chloride	(mg/kg)	(<0.02)	U	(<0.0083)	U	(<0.01)	U	(<0.02)	U	(<0.02)	U	---
Tetrachloroethene	(mg/kg)	(<0.02)	U	(<0.0083)	U	0.021		(<0.02)	U	(<0.02)	U	0.03229
Toulene	(mg/kg)	(<0.0042)	U	(<0.0017)	U	(<0.0023)	U	(<0.0045)	U	0.0069		---
Trichloroethene	(mg/kg)	(<0.02)	U	(<0.0083)	U	0.025		(<0.02)	U	(<0.02)	U	0.09130
Vinyl chloride	(mg/kg)	(<0.02)	U	0.033		(<0.01)	U	(<0.02)	U	(<0.02)	U	---
m&p Xylenes	(mg/kg)	(<0.0042)	U	(<0.0017)	U	(<0.0023)	U	(<0.0045)	U	0.0075		---
Xylenes (total)	(mg/kg)	(<0.0042)	U	(<0.0017)	U	(<0.0023)	U	(<0.0045)	U	0.0075		---

Parameter List USEPA Method 8260B	Sample ID	932112-SD-05 (0-2")		932112-SD-05 (2-6")		DUPLICATE[a]		RINSATE[b]		TRIP BLANK[b]		Sediment Criteria Human Health Bioaccumulation (mg/kg)
	Lab ID	AC48527-014		AC48527-015		AC48479-003		AC48527-017		AC48527-020		
	Sample Type	Sediment		Sediment		QA/QC		QA/QC		QA/QC		
	Sample Date	11/20/2009		11/20/2009		11/20/2009		11/20/2009		---		
Acetone	(mg/kg)	(<0.03)	U	(<0.04)	U	(<0.03)	U	(<5)	U	(<5)	U	---
2- Butanone	(mg/kg)	(<0.0071)	U	(<0.0082)	U	(<0.0065)	U	(<1)	U	(<1)	U	---
1,2- Dichloroethene (total)	(mg/kg)	(<0.0071)	U	(<0.0082)	U	(<0.0065)	U	(<0.5)	U	(<0.5)	U	0.00103
Methylene Chloride	(mg/kg)	(<0.0071)	U	(<0.0082)	U	0.0067		(<1)	U	(<1)	U	---
Tetrachloroethene	(mg/kg)	(<0.0071)	U	(<0.0082)	U	(<0.0065)	U	(<0.5)	U	(<0.5)	U	0.03229
Toulene	(mg/kg)	(<0.0014)	U	(<0.0016)	U	(<0.0013)	U	(<0.5)	U	(<0.5)	U	---
Trichloroethene	(mg/kg)	(<0.0071)	U	(<0.0082)	U	(<0.0065)	U	(<0.5)	U	(<0.5)	U	0.09130
Vinyl chloride	(mg/kg)	(<0.0071)	U	(<0.0082)	U	(<0.0065)	U	(<0.5)	U	(<0.5)	U	---
m&p Xylenes	(mg/kg)	0.0037		0.002		(<0.0013)	U	(<1)	U	(<1)	U	---
Xylenes (total)	(mg/kg)	0.0037		0.002		(<0.0013)	U	(<0.5)	U	(<0.5)	U	---

(a) Duplicate sample collected at 932112-SD-05 (0-2").

(b) Rinsate and trip blanks are aqueous samples, units are in µg/L.

NOTE: USEPA = United States Enivronmental Protection Agency
mg/kg = milligrams per kilogram
U = Non-detect, detection below the method detection limit
--- = No applicable criteria available
QA/QC = Quality Assurance/Quality Control
Concentration values in **bold** indicate that analyte was detecetd above the calculated sediment criteria.
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown. Data validation to be completed by Chemworld Environmental, Inc.

TABLE 7B DETECTED SEMIVOLATILE ORGANIC COMPOUNDS SEDIMENT ANALYTICAL DATA

Parameter List USEPA Method 8270C	Sample ID	932112-SD-01 (0-2")		932112-SD-02 (0-2")		932112-SD-03 (0-2")		932112-SD-04 (0-2")		932112-SD-05 (0-2")		Sediment Criteria Benthic Auqatic Life Chronic Toxicity or Human Health Bioaccumulation* (mg/kg)
	Lab ID	AC48527-001		AC48527-004		AC48527-007		AC48527-011		AC48527-014		
	Sample Type	Sediment		Sediment		Sediment		Sediment		Sediment		
	Sample Date	11/20/2009		11/20/2009		11/20/2009		11/20/2009		11/20/2009		
Acenaphthylene	(mg/kg)	(<0.28)	U	(<0.11)	U	(<0.16)	U	(<0.3)	U	(<0.09)	U	---
Anthracene	(mg/kg)	(<0.28)	U	(<0.11)	U	(<0.16)	U	(<0.3)	U	(<0.09)	U	4.559
Benzo[a]anthracene	(mg/kg)	**1**		0.17		0.29		(<0.3)	U	0.35		0.520
Benzo[a]pyrene	(mg/kg)	**1.2**		**0.18**		**0.36**		(<0.3)	U	**0.41**		0.056*
Benzo[b]fluoranthene	(mg/kg)	**2.1**		**0.27**		**0.55**		**0.31**		**0.72**		0.056*
Benzo[g,h,i]perylene	(mg/kg)	1.3		0.16		0.69		(<0.3)	U	0.37		---
Benzo[k]fluoranthene	(mg/kg)	**0.7**		(<0.11)	U	(<0.16)	U	(<0.3)	U	**0.2**		0.056*
bis(2-Ethylhexyl)phthalate	(mg/kg)	2		0.24		(<0.16)	U	0.61		(<0.09)	U	5.096
Carbazole	(mg/kg)	(<0.28)	U	(<0.11)	U	(<0.16)	U	(<0.3)	U	(<0.09)	U	---
Chrysene	(mg/kg)	1.3		0.19		0.31		(<0.3)	U	0.41		---
Dibenzo[a,h]anthracene	(mg/kg)	**0.3**		(<0.11)	U	(<0.16)	U	(<0.3)	U	**0.12**		0.056*
Fluoranthene	(mg/kg)	2.3		0.36		0.65		0.46		0.69		43.420
Indeno[1,2,3-cd]pyrene	(mg/kg)	**1.1**		**0.12**		**0.4**		(<0.3)	U	**0.31**		0.056*
Phenanthrene	(mg/kg)	1		0.2		0.44		(<0.3)	U	0.3		5.108
Phenol	(mg/kg)	0.38		(<0.11)	U	(<0.16)	U	(<0.3)	U	(<0.09)	U	---
Pyrene	(mg/kg)	1.9		0.34		0.54		0.36		0.62		40.912

Parameter List USEPA Method 8270C	Sample ID	DUPLICATE[a]		RINSATE[b]		Sediment Criteria Benthic Auqatic Life Chronic Toxicity or Human Health Bioaccumulation* (mg/kg)
	Lab ID	AC48527-010		AC48527-017		
	Sample Type	QA/QC		QA/QC		
	Sample Date	11/20/2009		11/20/2009		
Acenaphthylene	(mg/kg)	0.12		(<2.1)	U	---
Anthracene	(mg/kg)	0.14		(<2.1)	U	4.559
Benzo[a]anthracene	(mg/kg)	**0.65**		(<2.1)	U	0.520
Benzo[a]pyrene	(mg/kg)	**0.59**		(<2.1)	U	0.056*
Benzo[b]fluoranthene	(mg/kg)	**0.95**		(<2.1)	U	0.056*
Benzo[g,h,i]perylene	(mg/kg)	0.41		(<2.1)	U	---
Benzo[k]fluoranthene	(mg/kg)	**0.31**		(<2.1)	U	0.056*
bis(2-Ethylhexyl)phthalate	(mg/kg)	(<0.08)	U	(<2.1)	U	5.096
Carbazole	(mg/kg)	0.13		(<2.1)	U	---
Chrysene	(mg/kg)	0.62		(<2.1)	U	---
Dibenzo[a,h]anthracene	(mg/kg)	**0.12**		(<2.1)	U	0.056*
Fluoranthene	(mg/kg)	1.2		(<2.1)	U	43.420
Indeno[1,2,3-cd]pyrene	(mg/kg)	**0.36**		(<2.1)	U	0.056*
Phenanthrene	(mg/kg)	0.092		(<2.1)	U	5.108
Phenol	(mg/kg)	1		(<2.1)	U	---
Pyrene	(mg/kg)	1		(<2.1)	U	40.912

(a) Duplicate sample collected at 932112-SD-05 (0-2").

(b) Rinsate blank was an aqueous sample, units are in µg/L.

NOTE: USEPA = United States Enivronmental Protection Agency
mg/kg = Milligrams per kilogram
U = Non-detect, detection below the method detection limit
--- = No applicable criteria available
Concentration values in **bold** indicate that analyte was detecetd above the calculated sediment criteria.
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown. Data validation to be completed by Chemworld Environmental, Inc.

TABLE 7C DETECTED TARGET ANALYTE LIST METALS SEDIMENT ANALYTICAL DATA

Parameter List USEPA Method 6010B/7471A	Sample ID	932112-SD-01 (0-2")		932112-SD-01 (2-6")		932112-SD-02 (0-2")		932112-SD-02 (2-6")		932112-SD-03 (0-2")		932112-SD-03 (2-6")		NYSDEC Sediment Criteria Lowest Effect Level (mg/kg)	NYSDEC Sediment Criteria Severe Effect Level (mg/kg)
	Lab ID	AC48527-001		AC48527-002		AC48527-004		AC48527-005		AC48527-007		AC48527-008			
	Sample Type	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment			
	Sample Date	11/20/2009		11/20/2009		11/20/2009		11/20/2009		11/20/2009		11/20/2009			
Aluminum	(mg/kg)	32,000		20,000		3,800		6,200		4,700		7,000		---	---
Antimony	(mg/kg)	(<8.3)	U	(<7.4)	U	(<3.3)	U	(<2.7)	U	(<4.8)	U	**6.1**		2.0	25.0
Arsenic	(mg/kg)	**14**		**11**		**25**		**9.1**		**34**		**38**		6.0	33.0
Barium	(mg/kg)	230		210		140		200		170		1,800		---	---
Cadmium	(mg/kg)	**6.1**		**6**		**4.6**		**2.7**		**4.4**		**6.8**		0.6	9.0
Calcium	(mg/kg)	57,000		52,000		11,000		11,000		32,000		24,000		---	---
Chromium	(mg/kg)	**96**		**95**		**57**		**17**		**51**		**74**		26.0	110
Cobalt	(mg/kg)	(<10)	U	(<9.3)	U	9.3		6.5		12		14		---	---
Copper	(mg/kg)	**1,000**		**1,100**		**780**		**170**		**8,200**		**740**		16.0	110
Iron	(mg/kg)	**26,000**		**30,000**		**65,000**		**52,000**		**120,000**		**110,000**		2.0%	4.0%
Lead	(mg/kg)	**2,000**		**2,000**		**1,300**		**810**		**1,200**		**590**		31.0	110
Magnesium	(mg/kg)	19,000		17,000		2,200		920		7,100		6,000		---	---
Manganese	(mg/kg)	270		290		230		200		**710**		**500**		460	1,100
Mercury	(mg/kg)	**0.89**		**0.73**		**0.27**		**0.33**		**0.29**		**0.34**		0.15	1.3
Nickel	(mg/kg)	**90**		**89**		**120**		**24**		**60**		**120**		16.0	50.0
Potassium	(mg/kg)	2,900		2,300		(<830)	U	(<670)	U	(<1,200)	U	960		---	---
Selenium	(mg/kg)	12		12		7.6		(<2.4)	U	(<4.3)	U	(<2.8)	U	---	---
Sodium	(mg/kg)	1,200		1,200		510		360		710		560		---	---
Vanadium	(mg/kg)	(<42)	U	(<37)	U	(<17)	U	(<13)	U	(<24)	U	21		---	---
Zinc	(mg/kg)	**2,500**		**2,600**		**2,200**		**610**		**1,700**		**2,000**		120	270

NOTE: USEPA = United States Enivronmental Protection Agency
NYSDEC = New York State Department of Environmental Conservation
mg/kg = milligrams per kilogram
U = Non-detect, detection below the method detection limit
--- = No applicable LEL or SEL available
Concentration values in **bold** indicate that analyte was detecetd above the LEL, **bold and highlighted** indicate that analyte was above the SEL.
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown. Data validation to be completed by Chemworld Environmental, Inc.

TABLE 7C DETECTED TARGET ANALYTE LIST METALS SEDIMENT ANALYTICAL DATA

Parameter List USEPA Method 6010B/7471A	Sample ID	932112-SD-04 (0-2")		932112-SD-04 (2-6")		932112-SD-05 (0-2")		932112-SD-05 (2-6")		DUPLICATE[a]		RINSATE BLANK[b]		NYSDEC Sediment Criteria Lowest Effect Level (mg/kg)	NYSDEC Sediment Criteria Severe Effect Level (mg/kg)
	Lab ID	AC48527-011		AC48527-012		AC48527-014		AC48527-015		AC48527-010		AC48527-017			
	Sample Type	Sediment		Sediment		Sediment		Sediment		QA/QC		QA/QC			
	Sample Date	11/20/2009		11/20/2009		11/20/2009		11/20/2009		11/20/2009		11/20/2009			
Aluminum	(mg/kg)	3,600		4,500		9,100		8,400		11,000		(<2,000)	U	---	---
Antimony	(mg/kg)	(<9.1)	U	(<9.1)	U	(<2.9)	U	(<3.2)	U	(<2.6)	U	(<20)	U	2.0	25.0
Arsenic	(mg/kg)	(<9.1)	U	(<9.1)	U	**5.6**		**6.8**		**4.7**		(<20)	U	6.0	33.0
Barium	(mg/kg)	110		76		590		230		220		(<100)	U	---	---
Cadmium	(mg/kg)	**2.9**		(<2.7)	U	(<0.86)	U	1.4		(<0.78)	U	(<6)	U	0.6	9.0
Calcium	(mg/kg)	23,000		180,000		37,000		43,000		78,000		(<10,000)	U	---	---
Chromium	(mg/kg)	(<23)	U	(<23)	U	21		20		18		(<50)	U	26.0	110
Cobalt	(mg/kg)	(<11)	U	(<11)	U	4.8		6.6		4.9		(<25)	U	---	---
Copper	(mg/kg)	**47**		**99**		**78**		**99**		**42**		(<50)	U	16.0	110
Iron	(mg/kg)	7,900		17,000		16,000		**23,000**		16,000		(<2,000)	U	2.0%	4.0%
Lead	(mg/kg)	**170**		**240**		**390**		**520**		**250**		(<50)	U	31.0	110
Magnesium	(mg/kg)	3,200		18,000		8,100		15,000		11,000		(<5,000)	U	---	---
Manganese	(mg/kg)	240		410		410		**550**		450		(<100)	U	460	1,100
Mercury	(mg/kg)	(<0.38)	U	(<0.38)	U	0.13		0.14		(<0.11)	U	(<0.5)	U	0.15	1.3
Nickel	(mg/kg)	(<23)	U	(<23)	U	**16**		**22**		15		(<50)	U	16.0	50.0
Potassium	(mg/kg)	(<2,300)	U	(<2,300)	U	1,200		1,200		1,300		(<5,000)	U	---	---
Selenium	(mg/kg)	(<8.2)	U	(<8.2)	U	(<2.6)	U	(<2.9)	U	(<2.3)	U	(<18)	U	---	---
Sodium	(mg/kg)	(<1,100)	U	1,100		(<360)	U	460		(<320)	U	(<2,500)	U	---	---
Vanadium	(mg/kg)	(<45)	U	(<45)	U	36		21		17		(<100)	U	---	---
Zinc	(mg/kg)	**400**		**390**		**340**		**410**		**290**		(<100)	U	120	270

(a) Duplicate sample collected at 932112-SD-05 (0-2").
(b) Rinsate blank was an aqueous sample, units are in µg/L.
NOTE: QA/QC = Quality Assurance/Quality Control

TABLE 7D DETECTED POLYCHLORINATED BIPHYNELS SEDIMENT ANALYTICAL DATA

Parameter List USEPA Method 8082	Sample ID	932112-SD-01 (0-2")		932112-SD-02 (0-2")		932112-SD-03 (0-2")		932112-SD-04 (0-2")		932112-SD-05 (0-2")		Sediment Criteria Benthic Auqatic Life Chronic Toxicity
	Lab ID	AC48527-001		AC48527-004		AC48527-007		AC48527-011		AC48527-014		
	Sample Type	Sediment		Sediment		Sediment		Sediment		Sediment		
	Sample Date	11/20/2009		11/20/2009		11/20/2009		11/20/2009		11/20/2009		
Aroclor - 1254	(mg/kg)	(<0.1)	U	0.068		(<0.06)	U	(<0.11)	U	(<0.03)	U	---
Aroclor (Total)	(mg/kg)	(<0.1)	U	0.068		(<0.06)	U	(<0.11)	U	(<0.03)	U	0.823

Parameter List USEPA Method 8082	Sample ID	DUPLICATE[a]		RINSATE[b]			Sediment Criteria Benthic Auqatic Life Chronic Toxicity
	Lab ID	AC48527-010		AC48527-017			
	Sample Type	QA/QC		QA/QC			
	Sample Date	11/20/2009		11/20/2009			
Aroclor - 1254	(mg/kg)	(<0.03)	U	(<0.05)	U		---
Aroclor (Total)	(mg/kg)	(<0.03)	U	(<0.05)	U		0.823

(a) Duplicate sample collected at 932112-SD-05 (0-2").

(b) Rinsate blank was an aqueous sample, units are in µg/L.

NOTE: USEPA = United States Enivronmental Protection Agency
mg/kg = milligrams per kilogram
U = Non-detect, detection below the method detection limit
--- = No applicable criteria available
QA/QC = Quality Assurance/Quality Control
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown. Data validation to be completed by Chemworld Environmental, Inc.

TABLE 7E DETECTED PESTICIDES SEDIMENT ANALYTICAL DATA

Parameter List USEPA Method 8081A	Sample ID	932112-SD-01 (0-2")		932112-SD-02 (0-2")		932112-SD-03 (0-2")		932112-SD-04 (0-2")		932112-SD-05 (0-2")		Sediment Criteria Benthic Auqatic Life Chronic Toxicity or Human Health Bioaccumulation*
	Lab ID	AC48527-001		AC48527-004		AC48527-007		AC48527-011		AC48527-014		
	Sample Type	Sediment		Sediment		Sediment		Sediment		Sediment		
	Sample Date	11/20/2009		11/20/2009		11/20/2009		11/20/2009		11/20/2009		
p,p'-DDD	(mg/kg)	(<0.01)	U	**0.0076**		**0.01**		(<0.01)	U	(<0.0036)	U	0.00043*
p,p'-DDE	(mg/kg)	(<0.01)	U	(<0.0042)	U	(<0.006)	U	**0.015**		**0.0041**		0.00043*
p,p'-DDT	(mg/kg)	(<0.01)	U	0.0073		(<0.006)	U	0.015		0.0072		0.04257

Parameter List USEPA Method 8081A	Sample ID	DUPLICATE[a]		RINSATE[b]		Sediment Criteria Benthic Auqatic Life Chronic Toxicity or Human Health Bioaccumulation*
	Lab ID	AC48527-010		AC48527-017		
	Sample Type	QA/QC		QA/QC		
	Sample Date	11/20/2009		11/20/2009		
p,p'-DDD	(mg/kg)	**0.0041**		(<0.0022)	U	0.00043*
p,p'-DDE	(mg/kg)	**0.0044**		(<0.0022)	U	0.00043*
p,p'-DDT	(mg/kg)	0.0097		(<0.0022)	U	0.04257

(a) Duplicate sample collected at 932112-SD-05 (0-2").

(b) Rinsate blank was an aqueous sample, units are in µg/L.

NOTE: USEPA = United States Enivronmental Protection Agency
DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethylene
DDT = Dichlorodiphenyltrichloroethane
mg/kg = milligrams per kilogram
U = Non-detect, detection below the method detection limit
Concentration values in **bold** indicate that analyte was detecetd above the calculated sediment criteria.
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown. Data validation to be completed by Chemworld Environmental, Inc.

TABLE 7F TOTAL LEAD AND TCLP LEAD SEDIMENT ANALYTICAL DATA

Parameter List USEPA Method 6010B	Sample ID	932112-SD-01 (0-2")	932112-SD-01 (2-6")	932112-SD-02 (0-2")	932112-SD-03 (0-2")	NYSDEC Sediment Criteria Lowest Effect Level (mg/kg)	NYSDEC Sediment Criteria Severe Effect Level (mg/kg)
	Lab ID	AC48527-001	AC48527-002	AC48527-004	AC48527-007		
	Sample Type	Sediment	Sediment	Sediment	Sediment		
	Sample Date	11/20/2009	11/20/2009	11/20/2009	11/20/2009		
Lead (total)	(mg/kg)	**2,400**	**2,100**	**530**	**630**	31.0	110

Parameter List USEPA Method 6010B	Sample ID	932112-SD-01 (0-2")	932112-SD-01 (2-6")	932112-SD-02 (0-2")	932112-SD-03 (0-2")	NYSDEC Identification and Listings of Hazardous Wastes 6 NYCRR Part 371 (mg/L)
	Lab ID	AC48527-001	AC48527-002	AC48527-004	AC48527-007	
	Sample Type	Sediment	Sediment	Sediment	Sediment	
	Sample Date	11/20/2009	11/20/2009	11/20/2009	11/20/2009	
TCLP Lead	(mg/L)	3.7	3.8	3.8	0.88	5.0

NOTE: USEPA = United States Enivronmental Protection Agency
NYSDEC = New York State Department of Environmental Conservation
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
TCLP = Toxicity Characteristics Leaching Procedure
Concentration values in **bold** indicate that analyte was detecetd above the LEL, **bold and highlighted** indicate that analyte was above the SEL.
Data provided by Hampton-Clarke Veritech. Only analytes that were detected in at least one sample are shown. Data validation to be completed by Chemworld Environmental, Inc.

Appendix A

Sampling Logs

DAILY FIELD REPORT **Day: Thursday Date: 11/19/09**

Temperature: (F) 40-55

Wind Direction: SW

Project Name: Old Upper Mountain Road

Weather: (am) periods of heavy rain - 45
(pm) Periods of rain – 55

NYSDEC Site # 932112

Contract # D004438-41 **Arrive at site:** 645 (am)

Location: Lockport, New York **Leave site:** 415 (pm)

HEALTH & SAFETY:

Are there any changes to the Health & Safety Plan? Yes ( ) No (X)
(If yes, list the deviation under items for concern)

Are monitoring results at acceptable levels?	Soil	Yes ( )	n/a (X)	* No ( )
	Waters	Yes ( )	n/a (X)	* No ( )
	Air	Yes ( )	n/a (X)	* No ( )

OTHER ITEMS: • *If No, provide comments*

Site Sketch Attached: Yes ( ) No (X)
Photos Taken: Yes (X) No ( )

DESCRIPTION OF DAILY WORK PERFORMED:

Site safety briefing and run through expected site work to be completed today. Don Paolial (Union laborer) was back on site after being cleared to work by doctor. Additional clearing, bulldozing and chipping in west portion of site. Also removed brush from above outfall in ravine to allow for surface water sampling. Upon DEC arrival, performed site walk to go over additional clearing activities that need to be performed: (1) minor cutting and chipping in central portion of the site (2) additional clearing along fence line towards eastern end of site (3) brush whacking on slight slope to north of ravine (4) clearing of the smaller parcel (5) decon pad

Clearing activities are limited due to heavy rain throughout much of the morning.

Megan Scott and Rachel Ribaudo w/ EA arrive onsite @ 11am to conduct surface water/sediment sampling. Manholes at end of and to west of old upper mountain road were opened and flow determined [to west of Old Upper Mountain Road flow comes from west towards Delphi and turns 90 degrees, running parallel along Old Upper Mountain Road, one located manhole at end of old upper mountain Road accepts flow from the west and from the South (Otto Place)]. In consultation w/ DEC, collected water samples today, will get sediment samples in morning and then perform dye testing to determine if any sewer lines discharge into ravine.

Surface water/sewer water samples collected by using “dip stick” equipped with dedicated plastic cup to collect samples from manholes. Surface water collected directly to glassware. MS/MSD collected at SW-01 (manhole to west of Old Upper Mountain Road). Duplicate collected at SW-03 (manhole at base of ravine). SW-02 from outfall at top of ravine, SW-04 from sheen observed in surface water near beaver dam in ravine.

Main site clearing is complete, only select chipping needs to be completed, and construction of decon pad (too wet to install today). Smaller parcel needs clearing with bulldozer on 11/20, some dirt/debris piles onsite to be leveled off and trees/brush to be pushed to far north corner of parcel, leaving rest of site clear for investigation activitites.

Crew left site @ 315, EA On site finishing surface water collection/packing coolers. Offsite 415

SAMPLING (Soil/Water/Air)

Sample ID:	Description:
SW-01	Sewer Water Sample (west of Old Upper Mountain Road) – MS/MSD – VOC, SVOC, TAL Metals, Pesticides, PCBs
SW-02	Surface Water Sample – Ravine Outfall – VOC, SVOC, TAL Metals, Pesticides, PCBs
SW-03	Sewer Water Sample (Sewer in Ravine) – SW-Duplicate 01 – VOC, SVOC, TAL Metals, Pesticides, PCBs
SW-04	Surface Water (sheen in creek inside ravine) VOC, SVOC, TAL Metals, Pesticides, PCBs

CONTRACTOR/SUBCONTRACTOR EQUIPMENT AND PERSONNEL ON SITE:

EA personnel: David Crandall, Megan Scott, Rachel Ribaudo

(Name of Subcontractor) personnel: Doug Musall w/ D&M Landscavation, Tim Regester (Union operator), Chet Mietlick (Operator), Anthony Otto (Union Laborer), Don Paolial (Laborer)

(Name of contractor) equipment: Bobcat w/ brushcutter/ John Deer 450H Bulldozer, Daewoo 55V Excavator, Chipper, New Holland EC150 large excavator

(*Indicates active equipment)

Other Subcontractors:

VISITORS TO SITE:

1. Glenn May, NYSDEC PM

PROJECT SCHEDULE ISSUES:

None.

PROJECT BUDGET ISSUES:

None.

ITEMS OF CONCERN:

None.

COMMENTS:

None.

ATTACHMENT(S) TO THIS REPORT:

SITE REPRESENTATIVE:

Name: *David Crandall*
cc:

DAILY FIELD REPORT **Day: Thursday Date: 11/19/09**

DAILY PHOTOLOG

Wood chipping activities in rain

Site clearing activities in rain

Manhole water sampling with dipper

Inside manhole at end of Old Upper Mountain Road

View of flow observed in manhole at end of Old Upper Mountain Road.

View of location of observed sheen (SW-04)

DAILY FIELD REPORT **Day: Friday Date: 11/20/09**

Temperature: (F) 40-55

Wind Direction: SW

Project Name: Old Upper Mountain Road

Weather: (am) periods of heavy rain - 45
(pm) Mostly Sunny – 60

NYSDEC Site # 932112

Contract # D004438-41 **Arrive at site:** 645 (am)

Location: Lockport, New York **Leave site:** 400 (pm)

HEALTH & SAFETY:

Are there any changes to the Health & Safety Plan? Yes ( ) No (X)
(If yes, list the deviation under items for concern)

Are monitoring results at acceptable levels?				
	Soil	Yes ( )	n/a (X)	* No ( )
	Waters	Yes ( )	n/a (X)	* No ( )
	Air	Yes ( )	n/a (X)	* No ( )

OTHER ITEMS:

- *If No, provide comments*

Site Sketch Attached: Yes ( ) No (X)
Photos Taken: Yes (X) No ( )

DESCRIPTION OF DAILY WORK PERFORMED:

Site safety briefing and run through expected site work to be completed today. Don Paolial (Union laborer) was back at doctor in am (had some stiffness in neck). To be completed by crew (1) Prep machinery to take offsite (2) stump area of, and install decon pad (3) finish clearing of smaller parcel (4) install snow fence to cover hole in fence along Old Opper Mountain Road.

Megan Scott and Rachel Ribaudo w/ EA arrive onsite @ 8am to conduct sediment sampling within ravine. 5 locations sampled shallow (0”-2”) and deep (2”-6”) samples at locations selected by DEC on 11.17. Upon completion of sediment sampling, EA performed dye tracer testing of sewer lines along Old Upper Mountain Road to determine (1) if discharging to outfall within ravine and (2) if connected to sewer manhole observed in base of ravine. Determined that Sewer line at end of Old Upper Mountain Road was connected to sewer line within base of ravine, and the sewer line to west of road (appear to be coming from Delphi) discharged into outfall at top of ravine (creek bulk head).

Smaller parcel was bushwhacked with Bobcat and then cleared additional with bulldozer. Bulldozer also knocked down some piles of observed soil/debris dumping in the rear of the site and consolidated all woody materials towards the far corner of the site. Site is adequately cleared for surveying/test pitting at future dates.

During final clearing activities, City of Lockport water department stopped onsite to inquire about site work. Alerted me that there were several water lines near the southwest corner of the site, including at least one that is likely within the fence line of the site. I informed them that Dig Safe will be called prior to any subsurface disturbances at the site.

Sediment samples were collected using a stainless steel hand auger, decontaminated with an alconox rinse between samples. One rinsate blank collected from the hand auger during sampling activities. Duplicate sediment sample collected at SD-05 MS/MSD sample collected at SD-04

Decon pad installed near southern gate of site. Installed at angle to allow for vehicles to drive through pad on way offsite. Fabric liner initially laid with some hay cushioning. Poly liner installed with 55 gallon drum installed as a sump along the southwest corner of pad to collect runoff. Pad sloped towards drum and drum covered with brick to be accessible for pumping out. Hay bales used for sidewalls of pad and stone dumped and leveled over poly liner for surface. Hole in fence was closed off with orange snow fence to deter onsite intruders.

All site clearing is complete, chipping is complete, decon pad is complete. Equipment will be left on site for use when hauling tires off site on 11/24.

Clearing crew left site between 100 and 230pm, EA On site completing sediment sampling program. Offsite 300pm

SAMPLING (Soil/Water/Air)

Sample ID:	Description:
SD-01 (0-2")	Shallow Sediment Sample (VOC, SVOC, TAL Metals, Pesticides, PCBs, (to be held by lab for possible TCLP Lead Analysis)
SD-01 (2"-6")	Deep Sediment Sample (TAL Metals - to be held by lab for possible TCLP Lead Analysis)
SD-01 COMP (0-6")	Sediment Sample Composite - Total Organic Carbon
SD-02 (0-2")	Shallow Sediment Sample (VOC, SVOC, TAL Metals, Pesticides, PCBs, (to be held by lab for possible TCLP Lead Analysis)
SD-02(2"-6")	Deep Sediment Sample (TAL Metals - to be held by lab for possible TCLP Lead Analysis)
SD-02 COMP (0-6")	Sediment Sample Composite - Total Organic Carbon
SD-03 (0-2")	Shallow Sediment Sample (VOC, SVOC, TAL Metals, Pesticides, PCBs, (to be held by lab for possible TCLP Lead Analysis)
SD-03 (2"-6")	Deep Sediment Sample (TAL Metals - to be held by lab for possible TCLP Lead Analysis)
SD-03 COMP (0-6")	Sediment Sample Composite - Total Organic Carbon
SD-04 (0-2")	Shallow Sediment Sample (VOC, SVOC, TAL Metals, Pesticides, PCBs, (to be held by lab for possible TCLP Lead Analysis)
SD-04 (2"-6")	Deep Sediment Sample (VOC, TAL Metals - to be held by lab for possible TCLP Lead Analysis)
SD-04 COMP (0-6")	Sediment Sample Composite - Total Organic Carbon
SD-05 (0-2")	Shallow Sediment Sample (VOC, SVOC, TAL Metals, Pesticides, PCBs, (to be held by lab for possible TCLP Lead Analysis)
SD-05 (2"-6")	Deep Sediment Sample (VOC, TAL Metals - to be held by lab for possible TCLP Lead Analysis)
SD-05 COMP (0-6")	Sediment Sample Composite - Total Organic Carbon
Rinsate Blank	Rinsate from Hand Auger for VOC, SVOC, TAL Metals, Pesticides, PCBs

CONTRACTOR/SUBCONTRACTOR EQUIPMENT AND PERSONNEL ON SITE:

EA personnel: David Crandall, Megan Scott, Rachel Ribaudo

(Name of Subcontractor) personnel: Doug Musall w/ D&M Landscavation, Tim Regester (Union operator), Chet Mietlick (Operator), Anthony Otto (Union Laborer), Don Paolial (Laborer)

(Name of contractor) equipment: Bobcat w/ brushcutter/ John Deer 450H Bulldozer, Daewoo 55V Excavator, Chipper, New Holland EC150 large excavator

(*Indicates active equipment)

Other Subcontractors:

VISITORS TO SITE:

1. Glenn May, NYSDEC PM

PROJECT SCHEDULE ISSUES:

None.

PROJECT BUDGET ISSUES:

None.

ITEMS OF CONCERN:

None.

COMMENTS:

None.

ATTACHMENT(S) TO THIS REPORT:

SITE REPRESENTATIVE:

Name: *David Crandall*

cc:

DAILY PHOTOLOG

Sediment sampling within ravine

Decontamination procedures during sediment sampling

DAILY PHOTOLOG

Construction of decon pad

Completed decon pad

Decon pad sump pit

Cleared smaller parcel

Dye testing from bulkhead outfall

Dyed water moving down creek

EA Engineering, P.C.
EA Science and Technology

SURFACEWATER SAMPLING PURGE FORM

Sample Location I.D.:	EA Personnel:	Client:
932112-SW-01	Megan Scott and Rachel Ribaudo	NYSDEC
Location:	**Manhole Condition:**	**Weather:**
Lockport, New York	good	47 deg and cloudy
Sampler Type	**Gauge Date:**	**Measurement Ref:**
Dipper sampler with dedicated poly cup	NA	NA
Stick Up/Down (ft):	**Gauge Time:**	**Well Diameter (in):**
NA	NA	NA

Purge Date:	Purge Time:
NA	NA
Purge Method:	**Field Technician:**
NA	NA

Well Volume

A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
NA	NA	NA
B. Depth to Water (ft):	**E. Well Volume (gal) C*D):**	**Sampler Type:**
NA	NA	Dipper sampler with dedicated poly cup
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Intake Depth:**
NA	NA	NA

Water Quality Parameters

Time (hrs)	pH (pH units)	Conductivity (S/m)	Turbidity (ntu)	DO (mg/L)	Temperature (oC)	ORP (mV)	DTW (ft btoc)	Rate (Lpm)	Volume (liters)
1150									

Total Quantity of Water Removed (gal):	NA	**Sampling Time:**	1155
Samplers:	MS/RR	**Split Sample With:**	MS/MSD
Sampling Date:	11/19/2010	**Sample Type:**	Sewer Water

COMMENTS AND OBSERVATIONS: Sample collected from sewer on west side of Old Upper Mountain Road that appears to receives discharge from the west (GMCH facility). No water quality parameters collected at this location.

EA Engineering, P.C.
EA Science and Technology

SURFACEWATER SAMPLING PURGE FORM

Sample Location I.D.:	EA Personnel:	Client:
932112-SW-02	Megan Scott and Rachel Ribaudo	NYSDEC
Location:	**Outfall Condition:**	**Weather:**
Lockport, New York	good	47 deg and cloudy
Sounding Method:	**Gauge Date:**	**Measurement Ref:**
NA	NA	NA
Stick Up/Down (ft):	**Gauge Time:**	**Well Diameter (in):**
NA	NA	NA

Purge Date:	Purge Time:
NA	NA
Purge Method:	**Field Technician:**
NA	NA

Well Volume

A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
NA	NA	NA
B. Depth to Water (ft):	**E. Well Volume (gal) C*D):**	**Sampler Type:**
NA	NA	Direct to jars
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Intake Depth:**
NA	NA	NA

Water Quality Parameters

Time (hrs)	pH (pH units)	Conductivity (S/m)	Turbidity (ntu)	DO (mg/L)	Temperature (oC)	ORP (mV)	DTW (ft btoc)	Rate (Lpm)	Volume (liters)
1330	8.61	0.966	43.6	11.29	12.4	0.201			

Total Quantity of Water Removed (gal):	NA	Sampling Time:	1340
Samplers:	MS/RR	Split Sample With:	none
Sampling Date:	11/19/2010	Sample Type:	Surface water

COMMENTS AND OBSERVATIONS: Sample collected from bulk head outfall that discharges into gulf creek

EA Engineering, P.C.
EA Science and Technology

SURFACEWATER SAMPLING PURGE FORM

Sample Location I.D.:	EA Personnel:	Client:
932112-SW-03	Megan Scott and Rachel Ribaudo	NYSDEC
Location:	**Manhole Condition:**	**Weather:**
Lockport, New York	good- hard to open, requires lever	47 deg and cloudy
Sounding Method:	**Gauge Date:**	**Measurement Ref:**
NA	NA	NA
Stick Up/Down (ft):	**Gauge Time:**	**Well Diameter (in):**
NA	NA	NA

Purge Date:	Purge Time:
NA	NA
Purge Method:	**Field Technician:**
NA	NA

Well Volume

A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
NA	NA	NA
B. Depth to Water (ft):	**E. Well Volume (gal) C*D):**	**Sampler Type:**
NA	NA	Dipper sampler with dedicated poly cup
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Intake Depth:**
NA	NA	NA

Water Quality Parameters

Time (hrs)	pH (pH units)	Conductivity (S/m)	Turbidity (ntu)	DO (mg/L)	Temperature (oC)	ORP (mV)	DTW (ft btoc)	Rate (Lpm)	Volume (liters)
1425	8.84	0.636	87.9	11.09	16.45	139			

Total Quantity of Water Removed (gal):	NA	**Sampling Time:**	1430
Samplers:	MS/RR	**Split Sample With:**	Duplicate
Sampling Date:	11/19/2010	**Sample Type:**	Sewer Water

COMMENTS AND OBSERVATIONS: Sample collected from manhole in ravine in Gulf Creek.

EA Engineering, P.C.
EA Science and Technology

SURFACEWATER SAMPLING PURGE FORM

Sample Location I.D.:	EA Personnel:	Client:
932112-SW-04	Megan Scott and Rachel Ribaudo	NYSDEC
Location:	**Well Condition:**	**Weather:**
Lockport, New York	NA	47 deg and cloudy
Sounding Method:	**Gauge Date:**	**Measurement Ref:**
NA	NA	NA
Stick Up/Down (ft):	**Gauge Time:**	**Well Diameter (in):**
NA	NA	NA

Purge Date:	Purge Time:
NA	NA
Purge Method:	**Field Technician:**
NA	NA

Well Volume

A. Well Depth (ft):	D. Well Volume (ft):	Depth/Height of Top of PVC:
NA	NA	NA
B. Depth to Water (ft):	**E. Well Volume (gal) C*D):**	**Sampler Type:**
NA	NA	Direct to jars
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Intake Depth:**
NA	NA	NA

Water Quality Parameters

Time (hrs)	pH (pH units)	Conductivity (S/m)	Turbidity (ntu)	DO (mg/L)	Temperature (oC)	ORP (mV)	DTW (ft btoc)	Rate (Lpm)	Volume (liters)
1455	8.86	0.957	22.4	11.51	12.53	122			

Total Quantity of Water Removed (gal):	NA	**Sampling Time:**	1500
Samplers:	MS/RR	**Split Sample With:**	none
Sampling Date:	11/19/2010	**Sample Type:**	Surface water

COMMENTS AND OBSERVATIONS: Sample collected from downstream Gulf Creek near beaver dam. There was a sheen on the water.

Appendix B

Data Usability Summary Report

Appendix C

Standard Industrial User Permit

APPENDIX N

DELPHI NEW DISCHARGE APPLICATION AND APPROVAL

COPY

New York State Department of Environmental Conservation
Division of Water
Bureau of Water Permits, 4th Floor
625 Broadway, Albany, New York 12233-3505
Phone: (518) 402-8111 • **FAX:** (518) 402-9029
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

April 10, 2006

Mayor Michael W. Tucker
Lockport Municipal Building
One Locks Plaza
Lockport, New York 14094

RE: New Discharge Notification
By Letter Dated April 3, 2006
SPDES Permit NY-0027057

Dear Mayor Tucker:

This letter is to notify you that the above subject new discharge may proceed without modification to the above noted permit.

Under 6 NYCRR Part 750 and 40 CFR 122.42, Publicly Owned Treatment Works (POTW) permittees are required to notify the New York State Department of Environmental Conservation (NYSDEC) when they will be accepting 'new or increased discharges of pollutants'. Under 6 NYCRR Part 750-2.9 the NYSDEC may prohibit the discharge until the SPDES permit is modified to account for the new discharge. It is not necessary to modify your SPDES permit to account for the above noted discharge.

Nonetheless, in accordance with Section 308 of the Clean Water Act, 33 USC Section 1318, we are requesting that you provide the information detailed on the attached High Intensity Monitoring Program page to provide additional assurance that the proposed discharge does not make it necessary to modify your discharge permit.

If you have any questions or comments, please do not hesitate to call Dare Adelugba at (518) 402-8204.

Sincerely,

Brian Baker, P.E.
Chief, Wastewater Permits - West Section

cc: Robert Locey - Region 9

COPY

HIGH INTENSITY MONITORING PROGRAM

The influent and effluent from the City of Lockport WWTP, SPDES Permit No. NY-0027057, shall be monitored **twice per month for three months** during which Delphi Thermal and Interior is discharging quantities of pollutants that are representative of normal discharge operations. Within 6 months of the date of this letter, this monitoring results shall be submitted to:

Regional Water Engineer
NYSDEC
270 Michigan Avenue
Buffalo, NY 14203-2999

Brian Baker, P.E.
Chief, Wastewater Permit, West Section
NYSDEC
625 Broadway, 4th Floor
Albany, NY 12233-3505

The substances to be monitored, the sample type and special analytical requirements are as follows:

PARAMETER	SAMPLE TYPE	ANALYTICAL TECHNIQUE
Cadmium	24 hour composite	EPA Method 200.8
Molybdenum	24 hour composite	EPA Method 200.8

LOCKPORT MUNICIPAL BUILDING
One Locks Plaza
Lockport, New York 14094
Phone (716) 439-6665
Fax (716) 439-6668

Office of the Mayor

MICHAEL W. TUCKER
MAYOR

April 3, 2006

Mr. Robert Lacey, P.E.
Environmental Engineer II
NYS Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: New Discharge to City of Lockport
Publicly Owned Treatment Works
SPDES #L NY 002 7057

Dear Mr. Lacey:

This letter is to request approval for the City of Lockport (City) Publicly Owned Treatment Works (POTW) to accept a new discharge from Delphi Thermal and Interior (Delphi). Under General Conditions 12.1 of New York Pollution Discharge Elimination System (SPDES) permits, 6NYCRR Park 754.4 (g) and 40 CFR 122.42, POTW permittees are required to notify the New York state Department of Environmental Conservation (NYDEC) when they will be accepting "new or increased discharge of pollutants".

In accordance with Section 308 of the Clean Water Act, 33 USC Section 1318, the City is providing the information detailed on the attached pages and is not seeking modification to the City's current SPDES permit.

The City of Lockport has reviewed the wastewater characterization provided by Delphi during a monitoring program from January 23, 2006 through January 30, 2006 and is of the opinion that the acceptance of a new discharge from Delphi will not be detrimental to the operation of the City's POTW and will not create SPDES permit violations. Thus, the City endorsed the acceptance of the Delphi discharge to the City's POTW. The City will issue a permit and monitor the Delphi discharge as part of the City's ongoing pretreatment program.

We appreciate your immediate review and approval of this new discharge. Please call of your have any questions,

Very truly yours,

Michael W. Tucker
Mayor

MWT/ecb

Cc: Mike Diel – City of Lockport
Norm Allen – City of Lockport
Roy Knap – Delphi
Vern Ingram – Clough, Harbour & Associates
Jack McMahon – Clough, Harbour & Associates

DESCRIPTION OF WASTEWATER SOURCE

Current Operations

Delphi collects wastewater from various sources including Buildings 8, 9, 10, 16 and 18 in the Acid Alkali (A/A) sump pit of Pumphouse No. 2 (PH2), as shown on Figure 1 Pumphouse 2 Wastewater Sources. The A/A pit is pumped to the Delphi WWTP for treatment. Additional flows from Buildings 6 and 8 are collected in the Chromate sump pit of PH2 and also pumped to the Delphi WWTP for treatment as shown on Figure 1. On October 3, 2005, Delphi discontinued the chromate conversion coating process used on the manufacturing evaporators. Subsequent to discontinuing this operation, Delphi has rinsed the main chromate pipeline, but has yet to clean the sump and other auxiliary pipelines.

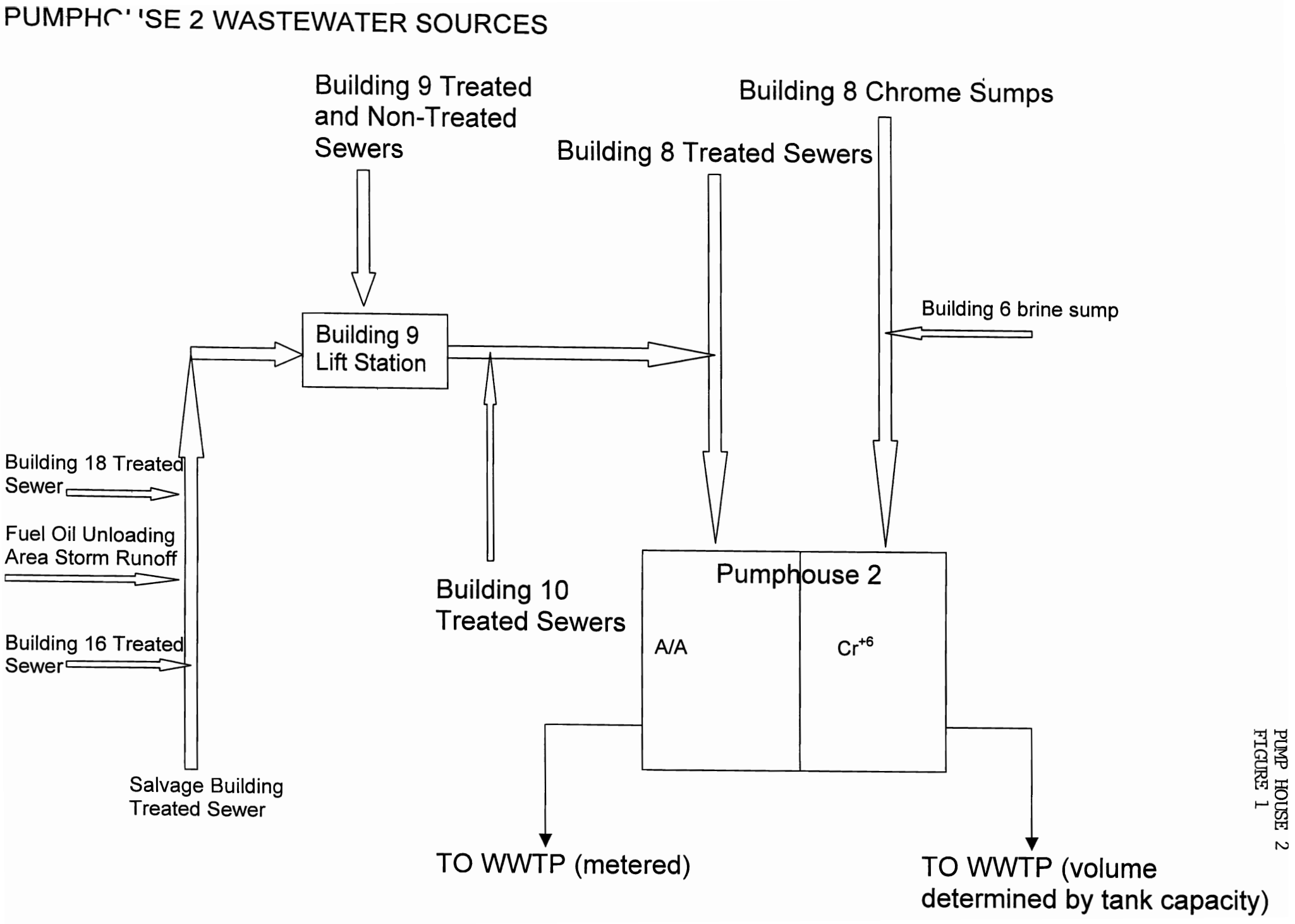
Flows from PH2 can be pumped to the Delphi WWTP via either overhead lines, underground lines or to PH1. Flows from PH1 can only be pumped to the Delphi WWTP via underground piping.

Pumphouse No. 1 (PH1) wastewater sources are identified on Figure 2. These sources include wastewater and stormwater from Buildings 7, 7S, 7A and 12. Additionally, PH2 overflow and Road 3 cooling tower overflow are discharged to PH1. Low flow stormwater from Outfall 002 is pumped to PH1 and stormwater from Outfall 003 flows by gravity to PH1. The lift station at Outfall 002 has three pumps that discharge low flow stormwater to PH1 until the station reaches an overflow set point. When the flow level reaches the set point, the three pumps are turned off and the stormwater flows to a stream. Similarly, the stormwater at Outfall 003 flows by gravity to PH1 until reaching an overflow level when the stormwater diverts to a stream.

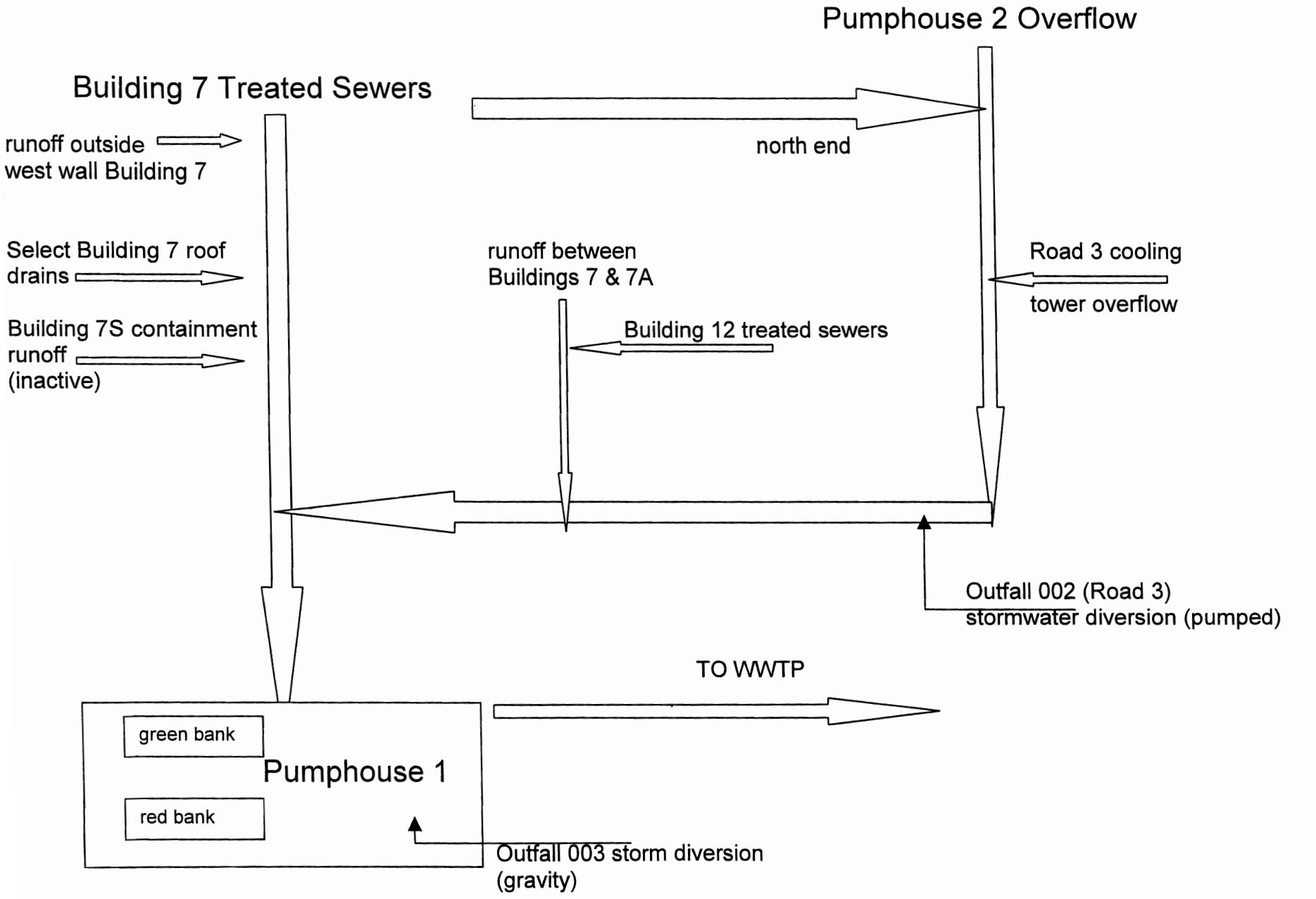
Proposed Operations

Delphi has recently allowed the PH2 A/A sump pit to discharge to PH1. In the future, they propose to also discharge flow from the chromate sump pit to PH1. Delphi representatives indicated that they have installed a valve between an overflow pipe from PH1 and the 24-inch diameter sanitary sewer that already conveys wastewater to the City WWTP via The Gulf Interceptor. The valve currently is in the closed position.

Delphi representatives also may install a valve on the overflow from Outfall 003 to shut off stormwater flow to PH1 once a design set point elevation is reached. This stormwater would then be automatically diverted to a nearby stream.


PUMPHOUSE 2 WASTEWATER SOURCES
Building 9 Treated and Non-Treated Sewers
Building 8 Chrome Sumps
Building 8 Treated Sewers
Building 6 brine sump
Building 9 Lift Station
Building 18 Treated Sewer
Fuel Oil Unloading Area Storm Runoff
Building 16 Treated Sewer
Salvage Building Treated Sewer
Building 10 Treated Sewers
Pumphouse 2
A/A
Cr+6
TO WWTP (metered)
TO WWTP (volume determined by tank capacity)
PUMP HOUSE 2
FIGURE 1

PUMPHOUSE 1 WASTEWATER SOURCES



PUMP HOUSE 1
FIGURE 2

BASIS OF HAZARDOUS DETERMINATION

In correspondence from Delphi to the City dated December 7, 2005, Delphi reported the chromate conversion coating process used on the manufacturing evaporators was discontinued on October 3, 2005. As stated in the letter, Delphi understands that once this chromate conversion coating process was discontinued, the Metal Finishing Standard no longer applies to this facility. This eliminates the Delphi discharge from being classified as categorical and is not considered a hazardous discharge. A copy of the letter is attached to this new discharge information package.

DELPHI
Automotive Systems

December 7, 2005

Ms. Victoria A. Haenle
Industrial Pretreatment Coordinator
City of Lockport Wastewater Treatment Plant
611 West Jackson Street
Lockport, New York 14094 - 1736

Dear Ms. Haenle:

On October 3, 2005, Delphi Thermal and Interior (Delphi) discontinued the chromate conversion coating process used in the manufacturing of evaporators. It was this process that EPA cited under the Metal Finishing Standard (40CFR Part 433) during their April 25, 2000 inspection in conjunction with the City of Lockport. This citation resulted in the inclusion of additional discharge points, MS03 and MS04, in the facility permit. These discharge points are located in the Lockport Technical Center (Building 6).

It is Delphi's understanding that once the chromate conversion coating process was discontinued, the Metal Finishing Standard no longer applies to this facility.

Therefore, Delphi is requesting a modification of permit CL860103, removing both Discharge Points MS 03 and MS 04 from the existing permit. The current MS 01 permit conditions would not be changed at this time.

Either Cathy Ver or Roy Knapp is available to answer questions on this issue. A meeting can be arranged if you would like to discuss the information. Please contact Cathy at 439 -2942 to arrange a mutually agreeable meeting time.

I trust you will find this information to your satisfaction.

Sincerely,

Scott A. Kitkowski
Director, Lockport Site Operations

cc: R. Knapp, C. Ver - Delphi

METHOD OF CONVEYANCE TO THE CITY'S POTW

Wastewater generated at the Delphi plant will be collected in Pumphouse No. 1 (PH1). A valve has been installed between an overflow pipe from PH1 and the 24-inch diameter sanitary sewer that already conveys sanitary wastewater to the City WWTP via The Gulf Interceptor. Based on the results of a Town of Lockport Gulf Interceptor Sewer flow monitoring study completed in 1990, The Gulf Interceptor has the capacity to accept the anticipated 0.8 mgd Delphi flow. The City confirms that there has been no appreciable growth in the area to utilize this capacity. As shown in the attached Figure 2 from the Town of Lockport study, the limiting section of the proposed conveyance route is the 24-inch diameter sanitary sewer adjacent to the Delphi proposed discharge point. The study reports that this sewer has available capacity of 3.83 mgd during wet weather conditions.

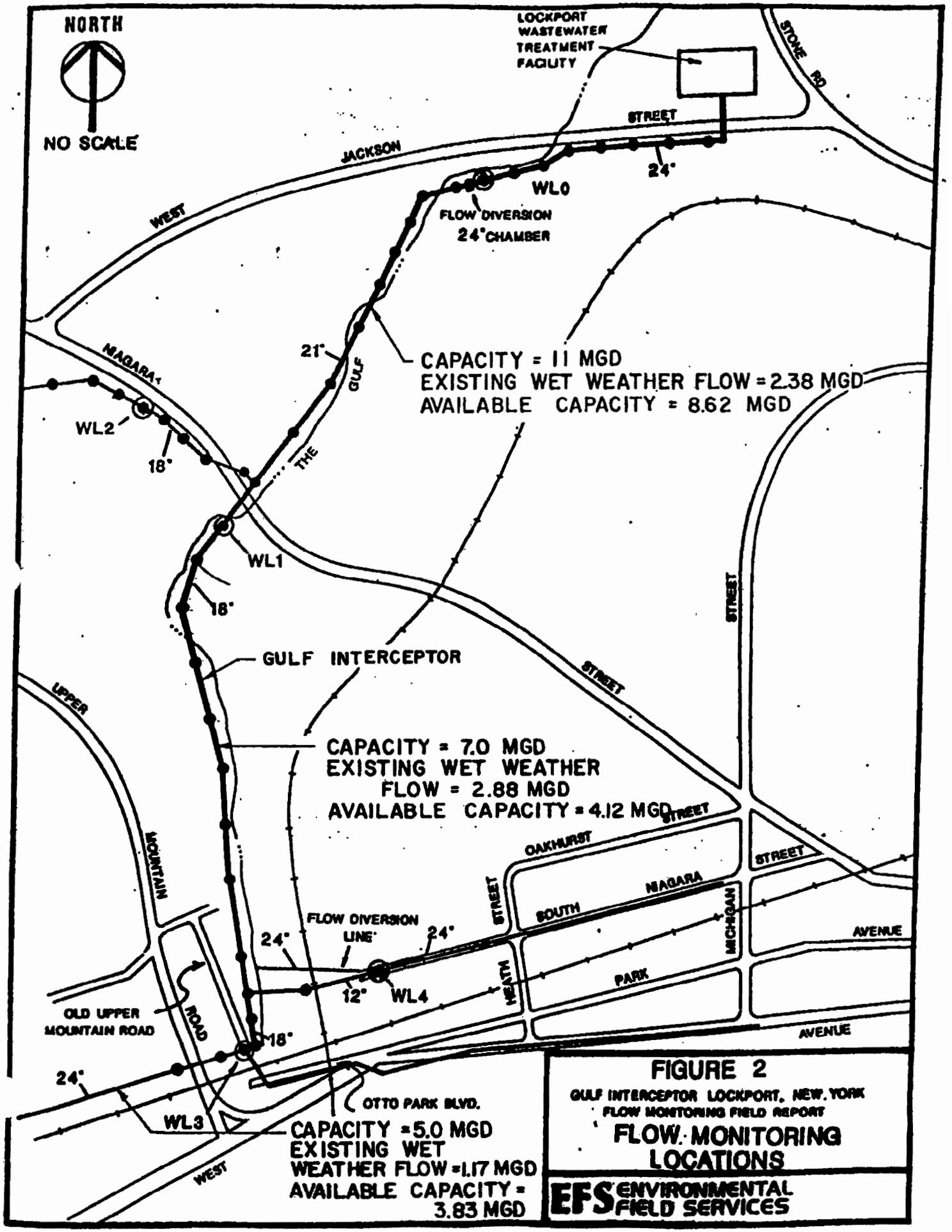


FIGURE 2

GULF INTERCEPTOR LOCKPORT, NEW YORK
FLOW MONITORING FIELD REPORT

FLOW MONITORING LOCATIONS

EFS ENVIRONMENTAL FIELD SERVICES

DESCRIPTION OF WASTWATER SUBSTANCES ANALYZED

A list of wastewater substances for analysis was developed based on a review of the Delphi State Pollutant Discharge Elimination System (SPDES) permit (NY 000 0558) and the City of Lockport's New York State Department of Environmental Conservation (NYSDEC) SPDES permit (NY 002 7057) modified November 1, 2005. The analytical parameter list includes the following:

a) Flow
b) pH
c) Temperature
d) Oil & Grease
e) Total Phosphorous
f) BOD
g) TSS
h) Aluminum, total
i) Cadmium, total
j) Chromium, total
k) Copper, total
l) Iron, total
m) Lead, total
n) Mercury, total
o) Nickel, total
p) Zinc, total
q) Tetrachloroethylene
r) Trans-1,2-Dichloroethylene
s) Trichloroethylene

Delphi completed sampling for these parameters during a monitoring program from January 23, 2006 through January 30, 2006.

SEWER CODE COMPLIANCE

The Delphi discharge will be permitted and monitored through the City's pretreatment program. The discharge will be monitored for compliance with the City's sewer code.

LANGUAGE REGARDING 40 CFR 403.5 (includes prohibitions against explosion and protection of worker health and safety)

The pretreatment permit issued to Delphi will contain provisions regarding 40 CFR 403.5 National Pretreatment Standards: Prohibited Discharges.

Specific prohibitions will include but not be limited to:

- pollutants which create fire or explosion hazard in the POTW;
- pollutants which cause corrosive structural damage to the POTW;
- solid or viscous pollutants which cause obstruction to the flow at the POTW;
- pollutants released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW;
- heat in amounts which will inhibit biological activity at the POTW;
- petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
- pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW; and
- any trucked or hauled pollutants, except at discharge points designated by the POTW.

The analytical results for 1,2 dichloroethene, tetrachloroethylene, and trichloroethylene secured by Delphi during the wastewater characterization monitoring program from January 23, 2006 through January 30, 2006 were reviewed against the USEPA manual entitled, "Guidance to Protect POTW Workers from Toxic and Reactive Gases and Vapors – June 1992."

As demonstrated below, the actual gas/vapor-toxic chemical levels are well below the screening levels developed by the USEPA.

Compound	Analytical Results (mg/l)	USEPA Screening Level (mg/l)
1,2 Dichloroethene	0.033	0.28
Tetrachloroethylene	0.015	0.53
Trichloroethylene	0.032	0.71

The City does not anticipate discharge of parameters typically associated with explosion such as benzene, ethyl benzene, naphthalene, toluene, or xylene and NYSDEC does not identify these parameters in Delphi's current SPDES permit.

LANGUAGE REGARDING APPLICABLE FEDERAL CATEGORICAL STANDARDS

The City of Lockport received correspondence from Delphi on December 7, 2005 that the chromate conversion coating process used on the manufacturing evaporators was discontinued on October 3, 2005. The letter also concludes that the Metal Finishing Standard no longer applies to this facility and the discharge is not classified as categorical (see letter attached to the Basis of Hazardous Determination section of this document).

LANGUAGE REGARDING MAXIMUM ALLOWABLE HEADWORKS LOADINGS

It is the City's opinion that the discharge from Delphi will meet the maximum allowable headworks loading. This is supported by the data presented in the New Discharge Form.

LANGUAGE REGARDING NUISANCE ODOR POTENTIAL

It is the City's opinion that the discharge from Delphi will not create nuisance odor. The Delphi discharge contains a minimal amount of organic material, has a reasonable direct discharge path to the POTW via The Gulf Interceptor and is not in a highly populated area.

COMPLIANCE WITH RESPECT TO SPDES PERMIT LIMITS

Listed in the table below are the projected maximum effluent loading values from the New Discharge Form and the current SPDES permit limits or action levels contained in the City's permit as modified November 1, 2005. Based upon this data, the City is projected to maintain compliance with SPDES permit limits with the inclusion of the Delphi discharge.

Substance	Projected Max Effluent Loading (Lbs)	SPDES Permit Limit or Action Level (Lbs)
Flow (gpd)	12,600,000	22,000,000
pH (SU)	NA	6.0 – 9.0
BOD	2,497	2,752 / 5,505
TSS	3,053	5,505
Fluoride	109.4	
Phosphorus, total	160	183.5
Aluminum, total	39	
Cadmium, total	0.0686	
Chromium, total	0.17	5.5
Copper, total	1.65	3.7
Iron, total	2.74	
Lead, total	0.28	1.0
Mercury, total	0.0109	0.15
Nickel, total	0.3991	11.0
Zinc, total	3.44	9.7
Oil & Grease	550	
1,2 Dichloroethenes (total)	0.31	
Tetrachloroethylene	0.10	
Trichloroethylene	0.08	1.5

DESCRIPTION OF PROPOSED CONTROL INSTRUMENT (permits, contracts and monitoring)

The City of Lockport has a pretreatment program in place for permitting and monitoring the current Significant Industrial Users (SIUs) that discharge to the City's POTW. A draft permit, complete with sewer use ordinance limits and proposed monitoring program, has been prepared by the City and will be issued to Delphi prior to the City's accepting flow at the POTW. Through the pretreatment program, the City has the appropriate authority to impose additional limits, monitoring, etc., if necessary.

IMPACT ON CSOs

The proposed routing of the discharge from Delphi to City's POTW, via a 24-inch diameter sewer adjacent to the Delphi plant and then connecting to The Gulf Interceptor, do not contain any Combined Sewer Overflows (CSOs). Therefore, the addition of flow from Delphi will not have an impact on the CSOs within the City.

The concentrations shown on the New Discharge Form are the maximum expected concentrations. These concentrations were achieved without dilution.

EXPECTED IMPACT ON CURRENT SLUDGE DISPOSAL METHOD AND ULTIMATE DISPOSAL SITE

Presented in the attached table is a summary of 2005 maximum month biosolids data collected from the belt press effluent biosolids prior to going to the City's compost facility. Also, the table contains the maximum value reported from analyses of the 2005 compost facility. These values were compared to the 40 CFR 503 and the 6 NYCRR 360 regulation limits. Based on a review of this data, cadmium is the only parameter of concern since once during 2005 the compost sample recorded a value of 10 ppm. This is the limit for cadmium for both the 40 CFR 503 and the 6 NYCRR 360 regulations in order to land apply the compost. The calculated estimated cadmium biosolids loading with the addition of Delphi wastewater to the influent at the POTW is within the limits of the 40 CFR 503 and the 6 NYCRR 360 regulations. The City will closely monitor cadmium levels and identify an alternate course of action (i.e., tighter limits, alternate compost disposal, etc.), if necessary.

The Delphi discharge is not anticipated to adversely impact the current sludge disposal method and ultimate disposal site.

City of Lockport

Biosolids Information

Parameter	2005 Belt Press Effl max (ppm)	Compost Effl (ppm)	Permit & Regulation Limits (ppm)*	Contaminant Loading in Solids (lb/d)	Min Removal Efficiency (%)	Max Allowable Headworks Loading for Solids (lb/d)
Arsenic, total	13	21	41	0.180	31%	0.582
Cadmium, total	21	10	10	0.044	33%	0.133
Chromium, total	171	95	1,000	4.400	68%	6.471
Copper, total	592	470	1,500	6.600	67%	9.851
Lead, total	132	110	300	1.320	39%	3.385
Mercury, total	2	2	10	0.044	50%	0.088
Molybdenum, total	37	38	40	0.176	NA	NA
Nickel, total	38	40	200	0.880	25%	3.520
Selenium, total	7	7	100	0.440	33%	1.333
Zinc, total	1,466	1,138	2,500	11.000	64%	17.188
TKN	50,900	25,500				
Ammonia	1,740	6,000				
Nitrate	3,380	589				
Phosphorous	11,200	9,470				
Potassium	2,032	5,300				
pH	6.8	8.2				
% Solids	26.3	83.2				
% Vol	70.1	76				

ppm = mg/kg

* - Regulations as per 40 CFR 503 and 6 NYCRR 360-5.10 (Table 7)

Weighted contribution of all for Cd		0.0009	mg/l		
Delphi		**City**		**Projected Total**	
Q (mgd)	**C (mg/l)**	**Q (mgd)**	**C (mg/l)**	**Q (mgd)**	
0.8	0.0004	11.8	0.00067	12.6	

Delphi Cd concentration assumes 33% removal efficiency (0.0006 mg/l * 0.67 = 0.0004 mg/l)

City Cd concentration assumes 33% removal efficiency (0.001 mg/l * 0.67 = 0.00067 mg/l)

	City WWTP Cumulative 2005 Flow (mgy)	4,308	mgy		
	2005 Biosolids off Filter Press (Dry tons)	803	tons/yr		
	2005 Biosolids off Filter Press (Dry lbs)	1,606,000	lb/yr		
	lb City biosolid / Q City (mgy)	373	lb/mgy		
	Delphi Max Flow Jan 2006 (mgd)	0.761	mgd		
	Est. Delphi flow for 2006 (mgy)	277.8	mgy		
	Est. lb Delphi biosolids = Est Q Delphi (mgy) * lb City biosolid / Q City (mgy)	103,549	lb/yr		
	ESTIMATED CADIMUM LOADING WITH 33% REMOVAL EFFICIENCY THRU WWTP				
	Delphia Cd (lbs/yr) = Q * C * 0.67 * 8.34 * 365 day/yr =	0.931	lbs Cd/yr	Assumes 33% removal of Cd	
	Delphi Cd (lbs/yr) / Delphi Sludge (lb/yr)	0.00001			
	City Cd for year = Q * C * 0.67 * 8.34 * 365 day/yr	24.067	lbs Cd/yr	Assumes 33% removal of Cd	
A	City Cd + Delphi Cd (lbs/yr)	24.998	lbs	11,338,900	mg
B	City 2005 Biosolids from Press + Est. Delphi biosolids	1,709,549	lbs	775,438.4	kg
C	Est Biosolids from Press with Delphi {A / B (mg/kg)}	14.62	ppm		
	Biosolids mix with Amendment				
D	Wk 11 - 2005 Compost Results	10	ppm		
E	March 2005 Belt Press Biosolids	21	ppm		
	Est Compost Results with Delphi (D/E = x/C) solving for x =	6.96	ppm		

NEW DISCHARGE FORM

NEW DISCHARGE FORM
for new or increased discharges to POTWs

1 City of Lockport POTW; SPDES Permit: NY 002 7057		2. Lockport Delphi Thermal and Interior; 200 Upper Mountain Rd., Lockport, NY 14094; (SPDES permit NY 000 0558)			4. Delphi Pumphouse 1 overflow pipe connection to City sanitary sewer				
		3. Proposed date to commence discharge ASAP			5. Is the discharge a haz waste? NO				
6. SUBSTANCE	**7. MAX DISCHARGE CONCENTRATION PROPOSED (MG/L)**	**8. PRESENT POTW MIN REMOVAL RATE (%)**	**9. MAX LBS ADDITIONAL LOADING PROPOSED (LBS/DAY)**	**10. PRESENT TOTAL LBS PERMITTED LOADING**	**11.NON INDUSTRIAL LOADING LBS**	**12. PRESENT MAX LBS HEADWORKS LOADING**	**13. MAX LBS ALLOWABLE HEADWORKS LOADING**	**14. PROJECTED MAX LBS HEADWORKS LOADING**	**15. PROJECTED MAX LBS EFFLUENT LOADING**
Flow (gpd)	800,000	NA	800,000	379,938	11,420,062	11,800,000	22,000,000	12,600,000	12,600,000
pH, maximum (SU)	7.9	NA	NA	8	NA	7.1	9.5	NA	NA
BOD_5	14	72.1% +	93.4	255	> 8602	> 8,857	25,300 #	8,951	2,497
TSS	39	74.5% +	260.2	77	11,635	11,711	31,000 #	11,971	3,053
Fluoride	16.4	NA	109.4	NA	NA	NA	NA	109.4	109.4
Phosphorus, total	0.46	42.9%	3.1	19	257	277	321	280	160
Aluminum, total	5.9	NA	39.4	NA	NA	NA	NA	39	39
Cadmium, total	0.0006	33.0%	0.004	NA/ND	NA	0.0984	0.133	0.1024	0.0686
Chromium, total	0.004	68.0%	0.027	0.011	< 0.4811	< 0.4921	6.471	0.52	0.17
Copper, total	0.011	67.0%	0.073	0.13	4.7906	4.9206	9.851	4.99	1.65
Iron, total	0.41	NA	2.74	NA	NA	NA	NA	2.74	2.74
Lead, total	0.008	39.0%	0.053	0.076	< 0.3372	< 0.4132	1.64	0.47	0.28
Mercury, total	0.0003	50.0%	0.002	0.0005	< 0.0192	< 0.0197	0.088	0.0217	0.0109
Nickel, total	0.006	25.0%	0.040	0.074	< 0.42	< 0.4921	3.520	0.532	0.3991
Zinc, total	0.231	64.0%	1.54	0.38	7.62	8.0005	17.188	9.54	3.44
Oil & Grease	21.2	26.1%	141.4	238	365	603	NA	745	550
1,2 Dichloroethenes (total)	0.033	3.4%	0.2	0.0011	< 0.0973	< 0.0984	NA	0.32	0.31
Tetrachloroethylene	0.015	50.0%	0.1	0.0074	< 0.0910	< 0.0984	NA	0.20	0.10
Trichloroethylene	0.032	75.0%	0.2	0.0099	< 0.0885	< 0.0984	6.00	0.31	0.08

Notes:	SU - Standard Units NA - Not Available ND - Non Detect
Column 7	Flow is maximum anticipated value. Concentration is maximum value of sample data collected from Delphi Pumphouse No. 1 discharge January 23, 2006 through Jan 30, 2006
Column 8	+ - SPDES permit identifies seasonal removal rate limits from November 1 to May 31 for BOD as 66% for BOD and 76% for TSS. Removal rates for BOD, TSS and P based on 30-day average City data collected from Jan 2005 - Dec 2005. Metals, Tetrachloroethylene and Trichloroethylene removal rates are from Table 3-10 (pg 3-56) of the EPA Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program using the second decile data. Oil & grease removal rate based on September 14-15, 2004 City data. 1,2 Dichloroethenes (total) removal rate is based on calculating loads using the maximum detection limit for City data collected from May 4-5, 2005. The detection limits for the 1,2 Dichloroethenes (total) sample in 2005 were lower than those for samples collected in 2003 and 2004.
Column 9	Loading = Maximum anticipated flow * maximum concentration observed during January 2006 Delphi sample period * 8.34
Column 10	Summation of individual maximum loadings from each of seven current SIUs, as sampled and analyzed during 2005.
Column 11	Difference of Column 12 minus Column 10.
Column 12	See summary below. Cadmium found in influent sample but data not conclusive if cadimum from Industrial Loading or Non-Industrial Loading.
Column 13	City SPDES permit effluent limit plus removal efficiency (Column 8) (Note: # - from WWTP design criteria)
Column 14	Summation of Columns 9 + 10 + 11
Column 15	Column 14 less removal efficiency (column 8)

Column 12 — One priority pollutant sample date analyzed from each year 2003, 2004 and 2005

Parameter	Date	Rationale
BOD_5	2005	Maximum loading even though 2003 and 2004 data were factor of 4 lower. Averaging the three data points = 4,291.5, which is below the Column 13 loading calculations.
TSS	2005	Maximum loading even though 2003 and 2004 data were factor of 5 lower. Averaging the three data points = 5,184.4, which is below the Column 13 loading calculations.
Phosphorus, total	2005	Maxumim value using lowest reported detection limit
Cadmium, total	2005	Actual value detected rather than a less than detection limit value reported
Chromium, total	2005	Maxumim value using lowest reported detection limit
Copper, total	2005	Maximum loading
Lead, total	2004	Maxumim value using lowest reported detection limit
Mercury, total	2005	Maxumim value using lowest reported detection limit
Nickel, total	2005	Maxumim value using lowest reported detection limit
Zinc, total	2004	Maximum loading - assumes 2005 data an anomoly due to three consecutive results from follow-up sampling resulting in loadings of 1 pound or less
Oil & Grease	2004	Maximum loading
1,2 Dichloroethenes (total)	2005	Maxumim value using lowest reported detection limit
Tetrachloroethylene	2005	Maxumim value using lowest reported detection limit
Trichloroethylene	2005	Maxumim value using lowest reported detection limit