LABELLA Associates, P.C.

Engineering
Architecture
Environmental

WORK PLAN NO. 6

Remedial Action Work Plan

AREA OF CONCERN 1A: East of Chemical Building 11
AREA OF CONCERN 2: Silver Recovery Wastewater System
AREA OF CONCERN 3A: Former Waster Retention Pond/Burn Pit
AREA OF CONCERN 4B: Former Chemical Storage Sheds
AREA OF CONCERN 7: Building 2 and 7 Wastewater
AREA OF CONCERN 13: South Drainage Swale

Location:

NYSDEC ERP No. B00016
Former Photech Imaging Site
1000 Driving Park Avenue
Rochester, New York

Prepared for:

City of Rochester
Division of Environmental Quality
30 Church Street
Rochester, New York 14614

LaBella Project No. 209288
City DEQ No. 032536

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1.0 INTRODUCTION

LaBella Associates, P.C. ("LaBella") has prepared Work Plan No. 6 (WP6) on behalf of the City of Rochester, Department of Environmental Services (DES), Division of Environmental Quality (DEQ) for the former Photech Imaging Systems, Inc. (Photech) parcel located at 1000 Driving Park Avenue, City of Rochester, Monroe County, New York, hereinafter referred to as "the site." A Project Locus Map is included as Figure 1.

The site is listed as New York State Department of Environmental Conservation (NYSDEC) Site Code B00016 and is enrolled in the NYSDEC's Environmental Restoration Program (ERP). This Work Plan is consistent with the Record of Decision (ROD) for the Former Photech Imaging Site as developed by the NYSDEC in March 2006.

The following previous environmental assessments/investigations have been completed at the site and were relied upon for the development of this Work Plan:

- Environmental Site Investigation/Remedial Alternatives (SI/RA) Report Former Photech Imaging Systems, Inc., 1000 Driving Park Avenue, Rochester, New York Environmental Restoration Project #B00016-8, prepared by Day Environmental, Inc., January 2006.
- Environmental Restoration Record of Decision (ROD) Former Photech Imaging Site, Rochester, Monroe County, New York, Site Number B-00016-8, prepared by New York State Department of Environmental Conservation, Division of Environmental Remediation, March 2006.
- Preliminary Design Phase Investigation (DPI) for the Chemical Building 11 completed by LaBella in October 2010
- Preliminary Design Phase Investigation (DPI) AOC 2 – Silver Recovery Wastewater System completed by LaBella in April 2010.
- Preliminary Design Phase Investigation AOC 4 – Former Chemical Storage Shed completed by LaBella in October 2010.
- Building 7 and Building 2 Interim Remedial Measures (IRM) Confirmation Samples collected by LaBella in September 20, 2010.
- Site Audit, Rochester Film Corporation, Rochester, New York, completed by Obrien & Gere July 1986
- XRF Field Screening and Confirmation Analytical Sampling completed by LaBella during the building decommissioning and demolition process, June through October 2010.
- Post Demolition Design Phase Investigation

Subsequent to the demolition of the site building in 2010, a DPI was initiated to address data gaps associated with soil and groundwater impacts. These data gaps were identified during the previous on-site investigations and during the removal of the on-site buildings. The DPI focused significant attention to soil and groundwater data gaps under former building footprints.

The objective of WP6 is to implement remedial measures designed to address areas of contamination that were identified during previous investigations conducted at the site. Specifically this Remedial Action Work Plan (RAWP) is designed to address the remaining six Areas of Concern (AOCs) that are listed below and shown on Figure 2.

- AOC 1A: East of Chemical Building 11
- AOC 2: Silver Recovery Wastewater System
- AOC 3A: Former Waster Retention Pond/Burn Pit
- AOC 4B: Former Chemical Storage Sheds
- AOC 7: Building 2 and 7 Wastewater
- AOC 13: South Drainage Swale

The activities outlined in this Work Plan will be completed in accordance with the NYSDEC's Department of Environmental Remediation (DER)-10 (*Technical Guidance for Site Investigation and Remediation*) issued May 3, 2010.

In addition to the requirements of the NYSDEC DER-10 guidance document, a Quality Assurance Project Plan (QAPP) has been prepared for AOC 2 in accordance with the United States Environmental Protection Agency's (USEPA) funding grant.

2.0 BACKGROUND

The site is currently bound by: Driving Park Avenue to the south; Holleder Industrial Park to the north; Rochester Distribution Unlimited, Inc. to the east; and Electronic Media Solutions, Inc. to the west. Directly to the south of Driving Park Avenue is the Delphi manufacturing facility. The site is approximately 1000 feet east of Mt. Read Boulevard and 2 miles east of Interstate Route 390.

The site is located in an M-1 Industrial District. An M-1 Industrial District is designed to promote the retention and growth of employment opportunities by providing areas where a broad range of industrial uses may locate and where options for complementary uses exist. Permitted uses within an M-1 District included but are not limited to; Research Laboratories; Corporate Headquarters; Manufacturing and Light Industrial; Warehouses; Vehicle Repair and Sales, etc.

The site is comprised of 12.5 acres of land. Historically, a total of 15 former buildings totaling approximately 108,000 square feet of space occupied the site. Various underground storage tanks (UST), aboveground storage tanks (AST), and a below ground silver recovery system and associated wastewater system piping were formerly used at this facility. Other features of the site include a former burn pit area, a retention pond basin, asphalt parking lots, and three wooden shed-like structures. The general layout of the site, including former buildings and other features, is depicted in Figure 2.

The site was originally developed in 1948 for manufacturing photographic film and paper. Several different companies have owned and operated the facility at the site for photographic paper and film production since its construction in 1948. The most recent owner, Photech Imaging Systems, Inc., ceased operations and abandoned the facility in 1991. Large amounts of chemicals, wastes, and various supplies and materials were left "as-is" on-site when the facility was abandoned. In 1994, the NYSDEC and the United States Environmental Protection Agency (USEPA) performed a bulk waste and chemical removal

action at the site. This work successfully removed bulk chemicals from the facility; however, tanks were not certified as "clean"; small containers of chemicals were left in some of the buildings; and residual chemicals remain in some process vessels and piping. The buildings were vandalized, with ceilings, walls, piping and equipment severely damaged. As a result, asbestos and chemical residues were distributed throughout many interior areas of the buildings. Additionally, the roofs failed on several of the buildings and there was a fire in 2004 in the former warehouse portion of the facility.

During 2010, the City of Rochester demolished all of the buildings at the site including the sub grade tunnels. Prior to demolition, asbestos containing materials and residual chemicals inside the buildings were removed and disposed of. In addition, suspect building materials (e.g. concrete floors) were assessed for chemicals of concern and remediated prior to demolition.

3.0 STANDARDS, CRITERIA, AND GUIDELINES

Standards, Criteria and Guidelines (SCGs) for the remedial program outlined in the SI/RA and DPI Report were established through the remedy selection process stated in 6 NYCRR Part 375-1.10. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous substances disposed at the site through the proper application of scientific and engineering principles. The proposed future use for the Former Photech Imaging site is commercial/industrial uses. This section identifies the SCGs for the site. The SCGs identified are used in order to quantify the extent of contamination at the site that may require remedial work. The SCGs are not intended to be the final site cleanup objectives. The SCGs for soil and groundwater are provided below.

Soil:

In accordance with site-specific goals established by the NYSDEC Project Manager, this Work Plan will adhere to the Soil Cleanup Objectives (SCOs) in 6 NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives (RUSCO) for a Commercial Site. Part 375-6.8(b) RUSCOs will supersede the SCOs listed in the ROD.

Also, since cadmium appears to have impacted the groundwater at AOC 2, the cleanup goal for cadmium at AOC 2 will be the SCOs in 6 NYCRR Part 375-6.8(b) for the Protection of Groundwater.

The SCG for each AOC are listed in the following table.

Applicable Soil SCGs per AOC

Contaminant	Units	NYSDEC DER 6 NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objective for a Commercial Site	NYSDEC DER 6 NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objective for the Protection of Groundwater
AOC 1A:			
Acenaphthene	mg/kg	500	NA
Acenaphthylene	mg/kg	500	NA
Anthracene	mg/kg	500	NA
Benzo(a)anthracene	mg/kg	5.6	NA
Benzo(a)pyrene	mg/kg	1	NA
Benzo(b)fluoranthene	mg/kg	5.6	NA
Benzo(g,h,i)perylene	mg/kg	500	NA
Benzo(k)fluoranthene	mg/kg	56	NA
Chrysene	mg/kg	56	NA
Dibenz(a,h)anthracene	mg/kg	0.56	NA
Fluoranthene	mg/kg	500	NA
Fluorene	mg/kg	500	NA
Indeno(1,2,3-cd)pyrene	mg/kg	5.6	NA
Naphthalene	mg/kg	500	NA
Phenanthrene	mg/kg	500	NA
Pyrene	mg/kg	500	NA
AOC 2:			
Cadmium	mg/kg	NA	7.5
Silver	mg/kg	1,500	NA
AOC 3A:			
Cadmium	mg/kg	9.3	NA
Silver	mg/kg	1,500	NA
AOC 4B:			
Arsenic	mg/kg	18	NA
AOC 7:			
Cadmium	mg/kg	9.3	NA
Silver	mg/kg	1,500	NA
AOC 13:			
Cadmium	mg/kg	9.3	NA

NA = Not Applicable

Groundwater:

NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) No. 1.1.1 - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.

The SCG for groundwater for each applicable AOC is listed in the following table.

Applicable Groundwater SCGs per AOC

Contaminant	Units	NYSDEC TOGS No. 1.1.1 - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations
AOC 2:		
Cadmium	µg/L	5
AOC 3A		
Tricholorethene	µg/L	5

4.0 SUMMARY OF REMEDIAL GOALS

Goals for the remedial program outlined in the SI/RA Report were established through the remedy selection process stated in 6 NYCRR Part 375-1.10. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous substances disposed at the site through the proper application of scientific and engineering principles. The proposed future use for the Former Photech Imaging Site is commercial/industrial use. The ultimate Remedial Goals for the site are to eliminate or reduce to the extent practicable:

- Exposures of persons at or around the site to metals in on-site soils and groundwater
- The release of contaminants from soil or groundwater into indoor air of future overlying buildings through vapor intrusion
- The release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards
- The release of contaminants from shallow subsurface soil into storm drainage systems through storm water erosion
- Ambient groundwater quality standards

5.0 REMEDIAL MEASURES - TECHNICAL SCOPE OF WORK

This section describes the objective and scope of work to be implemented for each of the following AOCs that were identified in the SI/RA and DPI reports as containing chemicals of concern above SCGs. Specifically this Work Plan is designed to address the following AOCs as sown Figure 2A.

- Section 6.1: AOC 1A – East of Chemical Building 11
- Section 6.2: AOC 2 – Silver Recovery Wastewater System
- Section 7.2: AOC 3A – Former Retention Pond
- Section 7.3: AOC 4B – Former Chemical Storage Sheds
- Section 7.4: AOC 7 – Building 2 and 7 Waste Water
- Section 7.5: AOC 13 – South Drainage Swale
- Section 7.6: Underground Pipe Decommissioning

Although the underground pipe decommissioning was not identified as a separate AOC during the previous investigations; based on the potential for wastewater discharge pipes associated with the former facility's wastewater system to contain hazardous substances, procedures have been included in this Section 7.6 to properly decommission all suspect underground pipes at the site.

5.1 AOC 1A: East of Chemical Building 11

Metals contamination and polycyclic aromatic hydrocarbons (PAH) semi-volatile organic compound (SVOC) contamination above SCGs were detected in surface soil samples east of Building 11 (the former Chemical Lab) in proximity to scupper drain discharge locations. The concentrations of metals and PAH SVOCs in subsurface soils above SCGs were identified in the Day SI/RA and LaBella DPI report at the area shown on Figure 4. The exceedances were detected at surface soil samples SS-26C and SS-26D and soil boring sample from well Well-06. Based on the presence of the heavy metals and PAH SVOCs, an Interim Remedial Measure (IRM) was conducted to excavate and dispose of these impacted soils on August 30 and 31, 2010. As a result, approximately 601 tons of soil in the area shown on Figure 4 was excavated and disposed of at a NYSDEC Part 360 landfill. Twelve confirmation soil samples (AOC1A-CS-1 to AOC1A-CS-12) were collected in accordance with DER-10 to document soil conditions at the limits of the excavation, except for the west sidewall, as the excavation was completed to the eastern edge of Building 11. The locations of the confirmation soil samples are shown on Figure 4. The confirmation soil samples were analyzed for RCRA Metals and PAHs. The laboratory results of the confirmation soil samples indicate the RCRA Metals and PAH SVOCs are not present at concentrations above the SCGs, except for three PAH SVOCs detected in confirmation sample AOC1A-CS-1. These exceedances were detected at concentrations only slightly above the SCGs.

In addition, one groundwater sample was collected during the DPI from Well-06 and analyzed for RCRA Metals, PAH SVOCs, and TCL VOCs. Concentrations of Metals, PAH SVOCs, and TCL VOCs were not detected above the NYSDEC TOGS 1.1.1 groundwater standards indicating the presence of constituents of concern in the shallow overburden soils have not impacted the localized groundwater.

Objective:

The objective of the remedial measure associated with AOC 1A will be to "over" excavate approximately 33 cubic yards of PAH SVOC impacted soil in the area of confirmation soil sample AOC1A-CS-1.

AOC 1A Scope of Work:

LaBella shall direct the Contractor to over-excavate an approximate 15 ft by 15 ft by 4 feet deep area of PAH SVOC impacted soil at the location where confirmation soil sample AOC1A-CS-1 was collected as shown on Figure 4. Under the proposed source removal program, PAH SVOC impacted soils will require excavation and off-site disposal at a NYSDEC Part 360 permitted landfill. The following table summarizes the proposed remedial work at AOC 1A.

AOC	Chemical of Concern	Soil Cleanup Objective	Range of Concentration of Contaminant Above Soil Cleanup Objective	Estimated Area of Impacted Soil
AOC 1A: East of Chemical Building	PAH SVOCs	NYS Part 375-6.8(b) RUSCO for a Commercial Site for PAH SVOCs: *Benzo(a)anthracene - 5.6 mg/kg, Benzo(a)pyrene – 1 mg/kg, Benzo(b)fluoranthene - 5.6 mg/kg, Dibenz(a,h)anthracene - 0.56 mg/kg*	*Benzo(a)anthracene - 6.8 mg/kg, Benzo(a)pyrene - 5 mg/kg, Benzo(b)fluoranthene - 6.4 mg/kg, Dibene(a,h)anthracene - 0.84 mg/kg*	225 ft^2
Estimated Vertical Thickness of Impacts	**Estimated Volume of Impacted Soil**	**Estimated Vertical Thickness of Clean Soil Above Impacted Soil**	**Will Excavation be Completed into Bedrock**	**Estimated Volume of Bedrock to be Ripped and Removed**
4 ft	33 yd^3	0 ft	No	0 yd^3
Will Excavation be Completed into Groundwater	**Groundwater Cleanup Objective**	**Range of Concentration of Groundwater Contaminant Above Cleanup Objectives**	**In-Situ Groundwater Treatment Required**	**Estimated Volume of Groundwater To Be Removed From Excavation**
No	Not Applicable	Not Applicable	No	None
Estimated Volume of Backfill Required	**Estimated Number of Confirmation Soil Samples**	**Laboratory Analysis of Confirmatory Soil Samples**	**Post Source Removal Wells Installed and Type**	**Post Source Removal Groundwater Analysis**
33 yd^3	2 sidewall, 1 base	PAH SVOCs	None	None

LaBella will continuously monitor the soil for visible impairment, olfactory indications of impairment, and/or indication of detectable VOCs on a PID as well as indication of impairment from cadmium and silver on an XRF meter. If evidence of impairment is observed at the limits of the excavation, the excavation will be advanced further until field screening parameters appear to indicate the limits of the excavation are below the SCGs.

Excavation Confirmation Sampling:

Once the remedial excavation has been terminated, confirmatory soil samples consisting of two sidewall and one bottom will be collected from the excavation in accordance with NYSDEC DER-10 as summarized in Section 7.3. Confirmatory soil samples will be analyzed by the laboratory for PAH SVOCs.

For those portions of the excavation where confirmation soil sampling indicates concentrations of PAH SVOCs slightly above the SCG, those soils that exceed the SCGs will be removed and the sidewall re-sampled. The excavation will not be backfilled until satisfactory closure samples are obtained or with permission of the NYSDEC.

Backfill:

The excavation will be backfilled with clean on-site materials or imported fill material that has been sampled in accordance with NYSDEC DER-10, tested, and approved of by the NYSDEC Project Manager. The AOC 1A excavation will be backfilled to match the design grades depicted on the drawing set included in Appendix 9.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test. As such, the Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks.

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction. If materials fail to meet its specified compaction parameters, the Contractor shall remove and replace the material or otherwise with geotechnical engineer's recommendation regarding how to manage the placement of the backfill until the specified parameters are achieved.

5.2 AOC 2: Silver Recovery Wastewater System

Components of the former building's wastewater silver recovery system are located within the footprint of AOC 2 at the southwest corner of former Building 1 as shown on Figure 5A. The primary source of subsurface impacts appear to be from a 12,000-gallon underground concrete silver recovery vault associated with the former facility's silver recovery wastewater system. The vault contains aqueous contents that have been characterized as a characteristic hazardous waste for cadmium commonly associated with photographic film emulsion solutions and silver recovery. The integrity of the concrete recovery vault is suspect. Laboratory analytical results associated with this area appear to indicate that a release may have occurred that contributed to the presence of subsurface soil contamination in this portion of the site. Some of the samples in the area to the south and/southwest of the footprint of former Building 1 in proximity to the underground silver recovery vault contain concentrations of cadmium in soil and groundwater above the SCGs.

One groundwater sample collected during the DPI has indicated a cadmium concentration in groundwater at 8.45 parts per billion (ppb) in Well-01 (a bedrock interface well) which is above the NYSDEC TOGS 1.1.1 groundwater standard of 5 ppb.

Additional groundwater samples have been collected from five other wells in AOC 2 that have not detected concentrations of cadmium above the NYSDEC TOGS 1.1.1 groundwater standard for cadmium. The five wells located at AOC 2 are summarized below:

- Well-01 – Bedrock Interface Well
- Well-11 – Bedrock Interface Well
- Well-13 – Bedrock Interface Well

- GPMW-08 – Overburden Well
- IMW-14 – Bedrock Interface Well
- BR-14 – Bedrock Well

The well locations and associated groundwater sampling results are summarized on Figure 3. As such, groundwater contamination of cadmium appears to be limited to the area of Well-01 that was located adjacent to the concrete recovery vault.

Objective:

The objective of the remedial measure associated with AOC 2 will be to decommission by removal, the former silver recovery wastewater system, including: one 5,000-gallon metal silver recovery underground storage tank (UST); one 12,000-gallon underground concrete vault; and all associated piping. In addition, two water service vaults and associated piping, unrelated to the silver recovery system, will be decommissioned and removed. The water service vaults are included in the silver recovery system removal based on their physical proximity to the sub-grade components of the silver recovery system. It is not expected that the structures associated with the water structures are a contributing factor in regard to on-site contamination nor are the structures themselves anticipated to be contaminated.

In addition, approximately 700 cubic yards of cadmium impacted source area soils and 120 cubic yards of weathered bedrock also likely contaminated with cadmium will be targeted for over excavation and disposal off-site. Cadmium impacted soil generated from AOC 2 is anticipated not to be a characteristic hazardous waste. Sampling and testing will be conducted of the waste streams associated with AOC 2.

AOC 2 Scope of Work:

This scope of work includes the over-excavation and off-site disposal of cadmium impacted soil, weathered bedrock, as well as underground infrastructure related to the former silver recovery wastewater system located at the site (see Figure 5A). The following table summarizes the proposed remedial work at AOC 2.

AOC	**Chemical of Concern**	**Soil Cleanup Objective**	**Range of Concentration of Contaminant Above Soil Cleanup Objective**	**Estimated Area of Impacted Soil**
AOC 2: Silver Recovery Wastewater System	Cadmium	NYS Part 375-6.8(b) RUSCO for a Commercial Site for the Protection of Groundwater: Cadmium – 7.5 mg/kg	Cadmium – 7.9 to 6,320 mg/kg	2,300 ft^2
Estimated Vertical Thickness of Impacts	**Estimated Volume of Impacted Soil**	**Estimated Vertical Thickness of Clean Soil Above Impacted Soil**	**Will Excavation be Completed into Bedrock**	**Estimated Volume of Bedrock to be Ripped and Removed**
11 ft	700 yd^3	0 ft	Yes	120 yd^3

Will Excavation be Completed into Groundwater	Groundwater Cleanup Objective	Range of Concentration of Groundwater Contaminant Above Cleanup Objectives	In-Situ Groundwater Treatment Required	Estimated Volume of Groundwater To Be Removed From Excavation
Yes	Cadmium – 5 µg/L	Non Detect to 8.45 µg/L	Yes	30,000
Estimated Volume of Backfill Required	**Estimated Number of Confirmation Soil Samples**	**Laboratory Analysis of Confirmatory Soil Samples**	**Post Source Removal Wells Installed and Type**	**Post Source Removal Groundwater Analysis**
1,400 yd^3	7 sidewall	Cadmium	Yes – Two Bedrock Interface	Cadmium

AOC 2 Phasing Sequence:

Remediation of AOC 2 shall follow the Phasing Sequence provided below. Details regarding each step within the Phasing Plan are provided in the subsequent sections below;

Step 1 - Liquid Removal from Structures: Prior to any subsurface excavation or utility disconnects, all liquids contained with the structures associated with AOC 2 will be removed and containerized. This includes the 5,000-gallon UST, 12,000-gallon Vault and the second generation Water Meter Pit.

Step 2 - Utility Disconnect: Once all residual liquids have been removed from the structures each subsurface utility as depicted on Figure 10 shall be formally disconnected within the Right-of-Way.

Step 3 - Removal of 5,000-Gallon UST: Removal of the 5,000-gallon metal silver recovery UST will be completed as Step 3.

Step 4 -Removal of the Former Water Service Vault: Removal of the former Water Meter Vault will be completed as Step 4.

Step 5 - Removal of Current Water Meter Vault: Removal of the current Water Meter Vault will be completed as Step 5.

Step 6- Removal of 12,000- Silver Recovery Vault: Removal of the 12,000-gallon Wastewater System Vault will be completed as Step 6.

Step 7 - Soil and Bedrock Excavation: The remedial excavation associated with the removal of the source area soils and shallow bedrock will be completed as Step 7.

Step 8 -Remedial Excavation Closure Sampling: At the conclusion of the source removal action, a comprehensive closure assessment will be completed by LaBella.

Step 9 - In-Situ Groundwater Treatment: The application of in-situ metal immobilization compound, DARAMEND®-M will be completed as Step 9.

Step 10- Installation of Future Well Points: The installation/construction of two large diameter extraction points will be completed as Step 10.

Step 11 - Backfill and Site Restoration: Backfill of the resulting excavation and final grading of the site will be completed as Step 11.

AOC 2 Underground Structures Summary:

Where applicable, unless otherwise noted, all underground structures targeted for removal will be decommissioned and removed in accordance with NYSDEC DER-10 guidance document. Each of these structures is summarized in the table below.

Tank No. / Tank Name	Approximate Tank Size	Tank Construction	Contents and Waste Characteristic	Estimated Volume of Tank Contents	Waste Analytical Data Available for Tank Contents	Tank Disposal Requirements
Tank #1 / Silver Recovery Tank	5,000 gallons	Metal	Liquid – Non Hazardous Sludge – Non Hazardous	5,000 gallons	Yes – liquid and sludge	Recycling Facility Pending Visual Inspection by LaBella
Tank #2 / Original Water Service Vault	20 ft by 20 ft by 8 ft deep	Concrete	Soil – Non Hazardous Waste. Manage as Class 1 Material	85 yd^3	Yes - soil	Recycling Facility or NYS Part 360 Landfill Pending Waste Characterization Analysis
Tank #3 / Second Generation Water Service Vault	Unknown-Estimate 8,000 Gallons	Concrete	Liquid – Non Hazardous	Unknown – Estimate 6,000 to 10,000 gallons	Yes - liquid	Recycling Facility or NYS Part 360 Landfill Pending Waste Characterization Analysis
Tank #4 / Silver Recovery Wastewater Concrete Vault	12,000 gallons	Concrete	Liquid – Hazardous Waste (D006) Residual Sludge – Not Tested	12,000 gallons	Yes - liquid	Hazardous Waste Facility or NYS Part 360 Landfill Pending Waste Characterization Analysis

Waste characterization laboratory analytical reports are included in Appendix 1.

Based on the fact that the12,000-gallon silver recovery concrete vault is primarily the only structure located in the area of impacted soil that contains high concentrations of cadmium targeted for removal, a specific order of tank removals will be required with the intention to minimize potential cross contamination. The Contractor will be required to remove the tanks in accordance with the Phasing Sequence outlined above.

Project Implementation:

Details regarding the project phasing are provided below. The phasing schedule is designed to minimize the possibility of cross-contamination as a result of the decommissioning and removal of the structures and source area media.

Step 1 – Liquid Removal from Structures:

Prior to any subsurface excavation or utility disconnects, all liquids contained within the structures associated with AOC 2 will be removed and containerized. To complete Step 1 the contractor shall complete the following in the order listed;

Tank #1 - Silver Recovery Tank – 5,000 Gallon Metal UST
Tank #1 is full of water and contains approximately 1 ft of sludge at the bottom of the tank. Both the liquid and sludge are not considered a hazardous waste for RCRA Metals based on current analytical results. A copy of the waste characterization laboratory analytical reports for the liquid and sludge contained in Tank #1 are included in Appendix 1. Based on field measurements, Tank #1 contains approximately 4,500 gallons of liquid and 500 gallons of sludge. Liquids shall either be containerized on-site in a frac tank or other appropriate vessel for final waste characterization sampling as required by the receiving facility or as required by MCPW. The contractor may secure pre-approval from the receiving facility so the liquids can be directly removed and placed into the transport vehicle for shipment. All waste profiles will require approval and all waste manifests will require execution by the Generator; the City of Rochester. All waste shall be managed in accordance with Section 7.5.

Tank #2 - Original Water Service Vault
No liquids are known to be contained within this structure.

Tank #3 – Second Generation Water Service Vault
The second generation water service vault is constructed of concrete, and is covered by earthen material, except for a metal man-way that is connected to the interior of the tank. The exact volume of this structure is unknown but it is estimated that this structure may contain 6,000 to 10,000-gallons of water. A waste characterization sample of the liquid in the vault has been collected and analyzed for Metals, VOCs, and SVOCs. A copy of the waste characterization analytical report is included in Appendix 1. Based on this initial sampling, the contents of this structure appear to be acceptable for discharge to the MCPW sanitary sewer system. As such, the contents of Tank #3 shall be pumped to a 21,000 gallon frac tank for final waste characterization sampling and analysis. The liquids from Tank #3 shall not be commingled with any liquids removed from any other structure at the site.

Once contained, the liquid will be sampled by LaBella and analyzed for parameters specified by Monroe County Pure Waters (MCPW). It is anticipated that the contents of Tank #3 will ultimately be discharged to the MCPW sewer system. Sample results will be submitted to MCPW for review and approval to discharge. The Contractor will be required to obtain the sewer use permit with MCPW and ultimately discharge all approved waters in accordance with the Permit Requirements.

Tank #4 – Silver Wastewater Concrete Vault
Approximately 12,000 gallons of residual liquids existing within the structure will be pumped out and disposed at an approved off-site facility. Tank #4 is mostly full of water and may contain sludge at the bottom of the vault. Based on the existing waste characterization sampling, the liquid within the vault is considered a D006 hazardous waste for cadmium (concentration of 5.02 mg/L). Sludge, if any, was not sampled from the bottom of Tank #4 as a distinct layer was unable to be detected. A copy of the waste characterization analytical report for the liquid contents of Tank #4 is included in Appendix 1.

Liquids shall either be containerized on site in a frac tank or other appropriate vessel for final waste characterization sampling as required by the receiving facility. The contractor may secure pre-approval from the receiving facility so the liquids can be directly removed and placed into the transport vehicle for shipment. All waste profiles will require approval and all waste manifests will require execution by the Generator; the City of Rochester. The liquids from Tank #4 shall not be commingled with any liquids removed from any other structure at the site. All waste shall be managed in accordance with Section 7.5.

Step 2 – Utility Disconnect:

Once all residual liquids have been removed from the structures each subsurface utility as depicted on Figure 10 shall be formally disconnected within the Right-of-Way. The Contractor shall get formal approval and all required Permits from the representative Utility Agency's prior to completing any work in the Right-of Way. The utilities that require formal termination at the Driving Park Avenue right-of-way during this phase of the project are shown on Figure 10.

All tank connecting underground utilities shall be terminated at the Driving Park Avenue right-of-way in accordance with City of Rochester (water) and Monroe County Pure Water's (storm and sanitary sewer) specifications. In addition, all underground utilities and drop inlets shall be decommissioned in accordance with Section 7.6.

Once formal disconnection has occurred at the Right-of-Way the contractor shall be required to removal all subgrade piping back to the locations within (or outside of) AOC 2 as directed by LaBella. Given the former suspect waste steams associated with the former systems and wastewater discharge piping, all subsurface wastewater piping are suspect and will require special handling and decommissioning. The Contractor shall assume that all pipes may contain liquid and/or sludge that should be properly containerized and characterized to determine proper disposal. The Contractor will be required to dispose of all wastes generated as part of the project and LaBella will conduct all waste characterization sampling and testing in accordance with Section 7.5. All separate waste streams shall be segregated (e.g. liquid, sludge, etc.). Final disposal decisions will be made by LaBella and the City of Rochester.

Step 3 – Removal of 5,000-Gallon UST (Tank 1):

Removal of Tank #1, the 5,000-gallon metal silver recovery UST will be completed as Step 3. Since Tank #1 is located outside of the remedial excavation, it will be removed prior to the removal of the remaining structures.

The Contractor shall then expose the sides of Tank #1 by removing soils from around the perimeter of the structure. The Contractor shall segregate the soil as Class 1 Materials based on the location of the proposed limits of the AOC 2 remedial excavation as shown on Figure 5B, or as otherwise directed by LaBella. An estimated 150 cubic yards of Class 1 Material will require removal as part of the Tank #1 decommissioning. The Contractor will be required to assist LaBella with the screening of soil by allowing the testing of soil within the Contractor's excavator bucket at the direction of LaBella. LaBella will use an XRF meter to screen the excavated soils for the presence of cadmium and silver. The Contractor will be required to segregate, stage, and manage the soil at the direction of LaBella and in accordance with Section 7.1.

Soil excavated as part of the tank removal process will be managed in accordance with Section 7.1. All piping shall be removed in accordance with the procedures outlined in Section 6.7. Specifically, all piping associated with Tank #1 shall be removed in conjunction with the removal of Tank #1. All piping associated with Tank #1 shall be removed to the said pipe's termination point or to a point located inside the AOC 2 remedial excavation, unless otherwise approved by LaBella. The contents (if any) of the pipes that connect to Tank #1 are unknown. The Contractor shall consider all pipes that connect to Tank #1 as containing liquid and/or sludge that will require proper containerization and characterized to determine proper disposal. The Contractor will be required to dispose of all wastes generated as part of the project. LaBella will conduct all waste characterization sampling and testing in accordance with Section 7.5. All separate waste streams shall be segregated (e.g. liquid, sludge, etc.). Final disposal decisions will be made by LaBella and the City of Rochester.

Once the excavation to remove the tank is complete, and the tank contents have been removed, the Contractor will be required to pressure wash the inside of the tank to remove any sediment and sludge from within the tank prior to removal of the tank from the excavation. Once the tank is deemed clean by LaBella (i.e. free of sediment, sludge, and standing water), the Contractor shall remove the tank from the excavation. The Contractor shall place the tank on a minimum of one layer of 6-mil polyethylene sheeting within the footprint of the AOC 2 remedial excavation. Any soil adhering to the outside of the tank shall be removed using procedures that will not damage the integrity of the tank. Any soil that has been removed will be managed in accordance with Section 7.1. The Contractor will be required to assist LaBella with the inspection of the interior of the tank to confirm that all sediment, sludge, and standing water have been removed. If LaBella identifies any sediment, sludge, and standing water inside the tank, the Contractor will be required to remove and properly containerize the material to the satisfaction of LaBella in accordance with Section 7.5. Once the tank is considered clean by LaBella, it will be allowed to be removed off-site for disposal at an approved recycling facility.

Although this structure does not appear to be a source of the on-site contamination associated with AOC 2, LaBella will collect confirmation soil samples of the resulting excavation prior to backfilling.

Confirmation samples will include samples collected during the DPI that was conducted during 2010 and 2011, as well as samples collected from the excavation sidewalls at the completion of the remedial excavation. The utilization of existing analytical data will help minimize additional project related costs by eliminating the need to collect additional closure samples at identical locations. The locations of the confirmatory soil samples and the extent of the excavation area will be documented using GPS technology. Under this approach, the following existing soil samples will be utilized as part of the excavation closure assessment;

Sample Number	Location	Depth Collected (ft bgs)	Cadmium mg/kg
GP-12	~5 ft from North side of tank	5	1.11
GP-73	~3 ft from South side of tank	7.2	0.64
GP-73	~3 ft from South side of tank	11	0.46
GP-74	~ 3 ft from West side of tank	5	0.06 U
GP-74	~3 ft from West side of tank	11	0.38
GP-75	~ 3 ft from East side of tank	1	5.37
GP-75	~ 3 ft from East side of tank	9	1.12

The above listed samples will be used as closure sample, in addition, two soil samples will be collected from beneath the tank and analyzed for cadmium as detailed in the table below;

Area of Concern 5,000-gallon Silver Recovery Tank	Estimated Number of Confirmation Soil Sample		Analysis of Confirmation Soil Samples
	Sidewall	Bottom	
AOC 2	0	2	Cadmium

Once satisfactory closure samples are received, the excavation shall be backfill to an elevation approximately 4 ft bgs in accordance with the specification included in Section 8.0. If deemed necessary by LaBella or the City of Rochester, a temporary 4 ft tall orange construction fence shall be placed and maintained by the Contractor to the satisfaction of LaBella around the perimeter of the Tank #1 excavation.

Step 4 – Removal of Former Water Service Vault (Tank #2):

Removal of the former Water Meter Pit will be completed as Step 4. The original water service vault is constructed of concrete, and is located in the existing driveway. As such, the structure is covered with a layer of asphalt. The Contractor will be required to remove the asphalt layer and stage it separately on site. While removing the asphalt, the Contractor shall not comingle any other waste streams (e.g. soil, concrete, etc) with the asphalt. Asphalt will be disposed of at a recycling facility pre-approved by LaBella and the City of Rochester.

Once the structure has been exposed, the concrete top of the tank shall then be removed and managed as Class 3 Material in accordance with Section 7.1. Once the top of the vault has been removed, the soil inside the vault shall be removed and staged in the Class 1 Material staging area. This soil is considered Class 1 Material based on prior laboratory testing of the soil. Waste characterization results for the soil within Tank #2 are included in Appendix 1.

Once the soil from the vault has been removed by the Contractor, the Contractor shall then expose the sides of the vault by removing soils around the perimeter of the structure taking care to segregate the soil as Class 1 and Class 2 Materials based on the location of the proposed AOC 2 remedial excavation as shown on Figure 5B, or as otherwise directed by LaBella. An estimated 150 cubic yards of Class 1 Material and an estimated 75 cubic yards of Class 2 Material will require removal as part of the Tank #2 decommissioning. The Contractor will be required to assist LaBella with the screening of soil by allowing the testing of soil within the Contractor's excavator bucket at the direction of LaBella. LaBella will use an XRF meter to screen the excavated soils for the presence of cadmium and/or silver. The Contractor will be required to segregate the soil at the direction of LaBella and in accordance with Section 7.1.

All piping connected to the vault shall be decommissioned in accordance with the procedures outlined in Section 6.7. Specifically, all piping associated with Tank #2 shall be removed prior to the removal of the sides and bottom of Tank #2, and removed to the said pipe's termination point located inside AOC 2 remedial excavation, unless otherwise approved by LaBella. Piping associated with this vault is anticipated to be present at other areas of the site as shown on Figure 10 that will require decommissioning separately from the work associated with AOC 2.

Once the vault has been exposed on all sides, the vault shall be removed by the Contractor and placed within the footprint of the AOC 2 remedial excavation on a minimum of two layers of 6-mil polyethylene sheeting. It is anticipated Tank #2 will be removed in pieces. The Contractor shall take care not to comingle other waste streams with the concrete (e.g. soil) during the removal process. Any soil adhering to the outside of the concrete shall be removed and managed in accordance with Section 7.1. The Contractor will also be responsible to reduce the size of the concrete structure into manageable sized pieces so that it will be accepted into a recycling facility or a NYS Part 360 permitted landfill. The Contractor will be responsible to determine what size is acceptable for each recycling and disposal facility. Any rejection or additional disposal costs of the concrete at the landfill or recycling facility due to the size of the concrete pieces will be the responsibility of the Contractor. Also, the Contractor will be required to cut and remove any exposed metal re-bar associated with the concrete to allow recycling or disposal of the material at a NYS Part 360 landfill.

It is anticipated that the concrete associated with the structure can be disposed of at a recycling facility pending waste characterization analysis. Waste characterization sampling and testing of the concrete is discussed in Section 7.5.

Prior to backfilling, confirmation soil samples will be collected from the sidewalls of the excavation in accordance with Section 7.3. It is anticipated that Tank #2 may have been installed on bedrock. As such, samples will not be collected from the base of the excavation. Once acceptable closure samples are received, the western portion of the Tank #2 excavation will be backfilled to an elevation approximately 6 ft above the top of bedrock. Backfill specifications are included in Section 8.0.

Step 5 – Removal of Current Water Meter Vault (Tank #3):

Removal of the current Water Meter Pit will be completed as Step 5. The second generation water service vault is constructed of concrete, and is covered by earthen material, except for a metal man-way that is connected to the interior of the tank. Initially, the Contractor will be required to pressure wash the inside of the structure to remove any sediment and sludge within the structure prior to removal of the structure from the excavation. Once the structure is deemed clean by LaBella (i.e. free of sediment, sludge, and standing water), the Contractor shall then begin removal of the structure.

The Contractor shall then expose the sides of the vault by removing soils around the perimeter and segregate the soil as Class 1 and Class 2 Materials based on the location of the proposed AOC 2 remedial excavation as shown on Figure 5B, or as otherwise directed by LaBella. An estimated 85 cubic yards of Class 1 Material and an estimated 85 cubic yards of Class 2 Material will require removal as part of the Tank #3 decommissioning. The Contractor will be required to assist LaBella with the screening of soil by allowing the testing of soil within the Contractor's excavator bucket at the direction of LaBella. LaBella will use an XRF meter to screen the excavated soils for the presence of cadmium and/or silver. The Contractor will be required to segregate the soil at the direction of LaBella and in accordance with Section 7.1.

Once the structure has been completely exposed and all liquid inside the tank has been removed by the Contractor, all piping connected to the tank shall be decommissioned in accordance with the procedures outlined in Section 6.7. Specifically, all piping associated with Tank #3 shall be removed to the said pipe's termination point located inside AOC 2 remedial excavation, unless otherwise approved by LaBella. Piping associated with this vault is anticipated to extend to other areas of the site beyond the limits of AOC 2 as shown on Figure 10. These pipe runs will require decommissioning separately from the work associated with AOC 2.

Once the vault has been exposed on all sides, the vault shall be removed by the Contractor and placed within the AOC 2 remedial excavation on a minimum of two layers of 6-mil polyethylene sheeting. It is anticipated Tank #3 will be removed in pieces. The Contractor shall take care not to comingle other waste streams with the concrete (e.g. soil) during the removal process. Any soil adhering to the outside of the concrete shall be removed and managed in accordance with Section 7.1. The Contractor will also be responsible to reduce the size of the concrete structure into manageable sized pieces so that it will be accepted into a recycling facility or a NYS Part 360 permitted landfill. The Contractor will be responsible to determine what size is acceptable for each recycling and disposal facility. Any rejection or additional disposal costs of the concrete at the landfill or recycling facility due to the size of the concrete pieces will be the responsibility of the Contractor. Also, the Contractor will be required to cut and remove any exposed metal re-bar associated with the concrete to allow recycling or disposal at a NYS Part 360 landfill.

It is anticipated that the concrete associated with the structure can be disposed of at a recycling facility pending waste characterization analysis. Waste characterization sampling and testing of the concrete is discussed in Section 7.5.

Prior to backfilling, confirmation soil samples will be collected from the sidewalls of the excavation in accordance with Section 7.3. It is anticipated the structure may have been installed on top of bedrock, as such; samples will not be collected from the base of the excavation. Once acceptable excavation closure samples are received, the western portion of the Tank #2 excavation may be backfilled to an elevation approximately 6 ft above the top of bedrock. Backfill specifications are included in Section 8.0.

Step 6 – Removal of 12,000-gallon Vault (Tank #4):

Removal of the 12,000-gallon Vault will be completed as Step 6. After the tank contents have been removed, the Contractor will be required to use a high pressure wash to clean the inside of the vault to remove any sediment and sludge within the vault prior to removal of the vault from the excavation. Once the vault is deemed clean by LaBella (i.e. free of sediment, sludge, and standing water), the Contractor shall begin the structure removal process.

The Contractor shall expose the sides of the vault by removing soils around the perimeter and manage them as Class 2 Materials as the anticipated limits of the excavation to remove Tank #4 are within the proposed AOC 2 remedial excavation as shown on Figure 5B. If the limits of the excavation require the Contractor to excavate outside of the footprint of the proposed AOC 2 remedial excavation, the Contractor will be required to assist LaBella with the screening of soil by allowing the testing of soil within the Contractor's excavator bucket at the direction of LaBella. LaBella will use an XRF meter to screen the excavated soils for the presence of cadmium and/or silver. The Contractor will be required to segregate the soil at the direction of LaBella and in accordance with Section 7.1.

Since the 12,000-gallon vault is located completely within the limits of the AOC 2 source removal excavation any subgrade piping associated with the 12,000-gallon vault will be addressed during Step 7 – Soil and Bedrock Excavation. However, all piping shall still be removed in accordance with the procedures outlined in Section 6.7. The contents (if any) of the pipes that connect to Tank #4 are unknown. The Contractor shall consider the pipes that connect to Tank #4 to contain liquid and/or sludge that shall be properly containerized and characterized to determine proper disposal.

The Contractor will be required to dispose of all wastes generated as part of the project and LaBella will conduct all waste characterization sampling and testing in accordance with Section 7.5. All separate waste streams shall be segregated (e.g. liquid, sludge, etc.) appropriately to prevent the comingling of the waste streams. Final disposal decisions will be made by LaBella and the City of Rochester.

Once the vault has been exposed on all sides, the vault shall be removed by the Contractor and placed within the proposed AOC 2 remedial excavation on a minimum of two layers of 6-mil polyethylene sheeting. It is anticipated that Tank #4 will be removed in pieces. The Contractor shall take care not to comingle other waste streams with the concrete (e.g. soil) during the removal process. Any soil adhering to the outside of the concrete shall be removed and managed in accordance with Section 7.1. The Contractor will be responsible to reduce the size of the concrete vault into manageable sized pieces so that it will be accepted into a NYS Part 360 permitted landfill pending waste characterization analysis. If waste characterization analysis indicates the concrete to be representative of a characteristic hazardous waste, the contractor will also be required to reduce the size of the concrete so that it can be disposed of at a hazardous waste landfill. The Contractor will be responsible to determine what size is acceptable for the accepting disposal facility. Also, the Contractor will be required to cut and remove any exposed metal re-bar associated with the concrete to allow for disposal at an accepting landfill. It is anticipated that Tank #4 can be disposed of at a NYS Part 360 landfill pending waste characterization analysis. Tank #4 will not be allowed to be disposed of at a recycling facility. Waste characterization sampling and testing of the concrete is discussed in Section 7.5.

Backfilling and the collection of confirmation soil samples at this part of the AOC 2 remedial excavation will be discussed below as part of Step 8 – Remedial Excavation Closure Sampling.

Step 7 – Soil and Bedrock Excavation:

The remedial excavation associated with the removal of the source area soils and shallow bedrock will be completed as Step 7. LaBella has implemented a comprehensive Design Phase Investigation to determine the limits of the contaminants of concern associated with AOC 2. The results of the DPI are depicted on Figure 5B and on Table AOC 2.

Soil Excavation:

The DPI data suggests that much of soil within the proposed AOC 2 remedial excavation exceeds the SCO and therefore will require off-site disposal. As such, LaBella shall direct the Contractor to over-excavate approximately 700 cubic yards of cadmium impacted soil as shown on Figure 5B from the ground surface to the top of bedrock. Bedrock is located approximately 11 ft below the ground surface (bgs). LaBella will continuously monitor the soil for visible impairment, olfactory indications of impairment, and/or indication of detectable VOCs on a PID as well as indication of impairment from cadmium and silver on an XRF meter. If evidence of impairment is observed at

the limits of the excavation, the excavation will be advanced further until field screening parameters appear to indicate the limits of the excavation are below the SCGs.

It should be noted that the northern portions of the excavation will be advanced through portions of the backfill material that was placed during the Fall 2010 within the footprint of former Building No. 1. As these materials are encountered they will not be field screened rather they will be managed on-site as clean fill for re-use as backfill in the resulting excavation.

Bedrock Excavation:
The Contractor will be required to "rip-rock" as necessary to remove the approximate top 3 ft of weathered bedrock layers. Prior to the ripping of rock, the Contractor shall bench the sidewalls of the excavation at an angle of approximately 45 degrees or less to reduce the potential of the excavation sidewalls to slough in. Based on the nature of the release and the orientation of the silver recovery wastewater infrastructure it is anticipated that impacts may be present within these weathered rock layers.

In addition, this removal action is designed to provide a deeper excavation area to be utilized as a groundwater drawdown location if the on-site conditions are such that a high groundwater table is encountered at the time of excavation. The Contractor shall utilize sufficient pump points and equipment to allow for excavation to be completed in dry conditions. The Contractor will be responsible to reduce the size of the ripped rock into pieces so that the material will be accepted for disposal at a NYS Part 360 permitted landfill pending waste characterization analysis. If waste characterization analysis indicates the ripped rock to be representative of a characteristic hazardous waste, the contractor will also be required to reduce the size of the concrete so that it can be disposed of at a hazardous waste landfill. An estimated 120 cubic yards of rock will be targeted for removal at the location shown on Figure 5D.

Excavation Derived Groundwater:
Groundwater is anticipated to collect within the remedial excavation. The Contractor will be required to aggressively and continuously (if required) dewater groundwater potentially impacted with silver and cadmium into a Frac tank. The Contractor will be required to dewater the excavation at the sole discretion of LaBella. The intent of aggressively dewatering groundwater is to remove cadmium and silver impacted groundwater in the areas of AOC 2. Groundwater pumped into the Frac tank will be managed and disposed of as described in Section 7.4.

Step 8 – Remedial Excavation Closure Sampling:

At the conclusion of the source removal action a comprehensive excavation closure assessment will be completed by LaBella.

Confirmatory soil samples will be collected from the sidewall of the excavation in accordance with NYSDEC DER-10. Confirmatory soil samples will be submitted to a NYSDOH ELAP certified laboratory and analyzed by the laboratory for cadmium only. The Contractor will assist LaBella with the collection of the confirmatory soil samples. Given that cadmium was detected in groundwater above the SCGs within AOC 2 the Restricted Use Soil Cleanup Objective for the Protection of Groundwater will be utilized for excavation closure (i.e. AOC 2 SCG of 7.5 mg/kg for cadmium). In accordance with Section 7.3, the size of the excavation will determine the exact number of sidewall and bottom samples required.

Confirmatory soil samples will not be collected from base of the excavation, as the excavation will be completed to the top of bedrock. All closure samples will be analyzed on an expedited turn-around-time to facilitate closure of the open excavation in a timely manner. The remedial excavation will not be backfilled until satisfactory closure samples have been obtained.

Confirmation samples will include samples collected during the DPI that was conducted during 2010 and 2011, as well as samples collected from the excavation sidewalls at the completion of the remedial excavation. The utilization of existing analytical data will help minimize additional project related costs by eliminating the need to collect additional closure samples at identical locations. The locations of the confirmatory soil samples and the extent of the excavation area will be documented using GPS technology. Under this approach, the following existing soil samples will be utilized as part of the excavation closure assessment;

Sample Number	Approximate Location	Depth Collected (ft bgs)	Cadmium mg/Kg
TP-5	4 ft from Southeastern Limits of Excavation	9.5	0.64
GP-08	3 inside the Southern Limits of Excavation	9	0.97
GP-64a	4ft from Southwestern Limits of Excavation	6.8	2.89
GP-65	At Southern Limits of Excavation	5	0.14 J
GP-65	At Southern Limits of Excavation	9.2	0.43
GP-67	3 ft from Northeastern Limits of Excavation	7	1.24
GP-67	3 ft from Northeastern Limits of Excavation	11	0.76
GP-68	2 ft inside the Northeastern Limits of Excavation	7	0.34
GP-68	2 ft inside the Northeastern Limits of Excavation	11	0.39
GP-69	1 ft inside the Northern Limits of Excavation	7	0.31
GP-69	1 ft inside the Northern Limits of Excavation	11.3	1.19
GP-156	1 ft inside the Southeastern Limits of Excavation	5	0.31
GP-156	1 ft inside the Southeastern Limits of Excavation	10	0.93
GP-158	2 ft from Northern Limits of Excavation	7	0.62
GP-159	2 ft from Western Limits of Excavation	5	0.27
GP-159	2 ft from Western Limits of Excavation	10.4	0.46

To satisfy the requirements of NYSDEC DER-10 the following additional closure samples are anticipated;

Area of Concern	Estimated Number of Confirmation Soil Sample		Analysis of Confirmation Soil Samples
	Sidewall	Bottom	
AOC 2	7	0	Cadmium

Chemtech Consulting Group (Chemtech) will conduct the laboratory testing on the samples collected during the DPI. Chemtech is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. In addition, all laboratory data from the DPI will be reported in an Analytical Services Protocol (ASP) Category B Deliverables data package.

The locations of the existing samples proposed for utilization as part of the excavation closure data package as well as the locations targeted for the collection of additional excavation closure samples to satisfy DER-10 requirements is included on Figure 5B.

Soil removal will continue until confirmation sampling results demonstrate that the grossly impacted cadmium soil has been removed from AOC 2. For those portions of the excavations where confirmation soil sampling indicates concentrations of cadmium above the SCG and where nearby (e.g. approximately 5 ft) existing DPI data exists that indicates the horizontal extent of cadmium is below the SCG; the existing data shall provide sufficient information to define the horizontal extent of the contamination. Under this scenario the soils that exceed the SCGs will be removed to the location of the nearby DPI sample and the nearby sample will be included in the excavation closure package (i.e. no additional excavation closure sample will be collected).

Step 9 – In-Situ Groundwater Treatment:

The Contractor will be required to apply an in-situ metal immobilization compound to the base of the ripped-rock excavation in accordance with the manufacturer's specifications. DARAMEND®-M is a controlled release organic carbon, zero-valent iron (ZVI), and a source of sulfate, offered by Adventus Americas, Inc. (Adventus). This product produces a metal-sulfide compound that precipitates out of the dissolved phase and sorbs strongly to soil particles. This essentially immobilizes the compound as it remains fixed to the soil matrix. Adventus' technical summary of DARAMEND®-M is included in Appendix 2.

Approximately 1,300 pounds DARAMEND®-M slurry will be applied directly on top of the area where the weathered bedrock is removed during the remedial activities. DARAMEND®-M will be applied in accordance with the manufacturer's specification that is included in Appendix 2.

After the DARAMEND®-M has been applied, the remedial excavation will then be backfilled with pea gravel to an elevation of 4 ft above top bedrock (not the ripped bedrock area), then use on-site or imported fill material that has been sampled, analyzed, and approved by the NYSDEC in accordance with NYSDEC DER-10 as described in Section 8.0.

Step 10 – Installation of Future Well/Extraction Points:

During the backfilling process, the Contractor will be required to install two (2) 12 in. inside diameter perforated high density polyethylene (HDPE) well points at the locations shown on Figure 5D or as otherwise directed by LaBella. The well points shall be placed directly on top of bedrock to an elevation up to 3 ft above finished grade unless otherwise directed by LaBella.

Step 11 – Backfill and Site Restoration:

The excavation will be backfilled with clean on-site materials or imported fill material that has been sampled, tested, and approved of by the NYSDEC Project Manager. The AOC 2 excavation will be backfilled to match the design grades as depicted in the drawing set included in Appendix 9. Washed pea-gravel will be placed up to an elevation of 3 ft above the top of bedrock.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test (except for the Pea Gravel material). The Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks).

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction or is otherwise placed in compliance with the interim grading plan as directed by the geotechnical engineer.

5.3 AOC 3A: Former Retention Pond/Burn Pit

This area of the site is where solid waste was reportedly burned/dumped and also acted as an apparent storm water retention pond. A 1961 aerial photographs of the site shows potential storm water or waste water discharges. A 1970 and 1975 aerial photograph of the site appears to show an area of disturbance and a potential depression east of former Building 7 where solid waste was reportedly burned and/or dumped. The Day SI/RA and DPI report indicates that cadmium is the primarily contaminant of concern within this area of the site. To a lesser extent PAH SVOCs that appear to be limited to shallow residual material associated with the burn pit. Silver was more commonly detected at AOC 3A than cadmium and PAH SVOCs, but at concentrations below the SCG of 1,500 ppm. Low concentrations of VOCs were also detected in four of the six soil samples analyzed from AOC 3A during the DPI. The concentrations of VOCs detected are below the SCGs.

Groundwater associated with AOC 3A was evaluated during the DPI through the collection of representative groundwater samples from four (4) wells advanced with AOC 3A. These wells include;

- Well-07 – Bedrock Interface Well
- Well-08 – Bedrock Interface Well
- IMW-17 – Bedrock Interface Well
- BR-17 – Bedrock Well

The location of each groundwater monitoring well advanced in association with AOC 3A are depicted on Figures 3.

Groundwater samples collected during the DPI did not identify groundwater to be impacted with RCRA Metals and PAH SVOCs above the NYSDEC TOGS 1.1.1 groundwater standards. As such, the impacts of metals and PAH SVOCs to shallow soils do not appear to negatively impact the on-site groundwater in the vicinity of AOC 3A. One VOC, Trichloroethene (TCE), was detected in groundwater monitoring well MW-17 at a concentration of 5.6 ppb, which is slightly above the SCG of 5 ppb. MW-17 was constructed as a bedrock interface well. It should be noted that no VOCs were detected in the dedicated bedrock well (BR-17) installed at the sample location.

Objective:

The objective of the Remedial Measures for AOC 3A will be to remove cadmium impacted soil to a depth of 3 to 5 ft bgs. This zone represents the source area of residually impacted metals impacted soil associated with AOC 3A.

AOC 3A Scope of Work:

Cadmium impacted soil was primarily identified at 1 ft and 3 ft bgs (which represents the sample interval submitted for analysis) as shown on Figures 6B and 6C, respectively. As detailed in the DPI Data Package, cadmium impacted soil was identified at depths greater than 5 ft bgs, but at limited horizontal extent as shown on Figures 6C.

Based on the objectives of the project, the analytical data collected as part of the DPI, the fact that there have been no impacts to the localized groundwater based on the presences of COCs in shallow soils at AOC 3A, cadmium impacted soil will only be targeted for removal to an approximate depth of 3 to 5 ft bgs as shown on Figures 6B and 6C.

The over excavation of soil to the proposed depth is designed to remove the source from the site. A summary of analytical data collected during the DPI are included in Tables AOC-3A. Based on removal areas approximately 1,750 cubic yards of cadmium impacted soil will be targeted for excavation and off-site disposal at AOC 3A as shown on Figures 6B and 6C.

Under the proposed source removal program, cadmium and PAH SVOCs impacted soils will require excavation, staging, characterization, and off-site disposal from this location on the site. The following table summarizes the proposed remedial work at AOC 3A.

AOC	**Chemical of Concern**	**Soil Cleanup Objective**	**Range of Concentration of Contaminant Above Soil Cleanup Objective**	**Estimated Area of Impacted Soil**
AOC 3A: Former Retention Pond/Burn Pit	Cadmium	NYS Part 375-6.8(b) RUSCO for a Commercial Site RUSCO for a Commercial Site: Cadmium – 9.3 mg/kg	Cadmium – 7.9 to 218 mg/kg	12,875 ft^2
Estimated Vertical Thickness of Impacts	**Estimated Volume of Impacted Soil**	**Estimated Vertical Thickness of Clean Soil Above Impacted Soil**	**Will Excavation be Completed into Bedrock**	**Estimated Volume of Bedrock to be Ripped and Removed**
3 to 5 ft	1,750 yd^3	0 ft	No	0 yd^3
Will Excavation be Completed into Groundwater	**Groundwater Cleanup Objective**	**Range of Concentration of Groundwater Contaminant Above Cleanup Objectives**	**In-Situ Groundwater Treatment Required**	**Estimated Volume of Groundwater To Be Removed From Excavation**
No	Not Applicable	Not Applicable	No	0 gallons

Estimated Volume of Backfill Required	Estimated Number of Confirmation Soil Samples	Laboratory Analysis of Confirmatory Soil Samples	Post Source Removal Wells Installed and Type	Post Source Removal Groundwater Analysis
1,750 yd^3	17 sidewall, 15 base	Cadmium	None	Not Applicable

AOC 3A Phasing; Sequence:

Remediation of AOC 3A shall follow the Phasing Sequence provided below. Details regarding each step within the Phasing Plan are provided in the subsequent sections below;

Step 1- Soil Excavation: The remedial excavation associated with the removal of the source area soils will be completed as Step 1.

Step 2 -Remedial Excavation Closure Sampling: At the conclusion of the source removal action a comprehensive closure assessment will be completed by LaBella.

Step 3 - Backfill and Site Restoration: Backfill of the resulting excavation and final grading of the site will be completed as Step 3.

Project Implementation:

Details regarding the project phasing are provided below. The phasing schedule is designed to maximize the efficiency of the project.

Step 1 – Soil Excavation:

The remedial excavation associated with the removal of the source area soils will be completed as Step 1. LaBella has implemented a comprehensive Design Phase Investigation to determine the limits of the contaminants of concern associated with AOC 3A. The results of the DPI are depicted on Figures 6A-6C and in Tables AOC-3A.

Soil Excavation:
The DPI data suggests that much of soil within the proposed AOC 3A remedial excavation will require off-site disposal. As such, LaBella shall direct the Contractor to over-excavate approximately 1,750 cubic yards of cadmium impacted soil as shown on Figure 6A and 6B from the ground surface to depths ranging from approximately 3 to 5 ft below the ground surface (bgs). LaBella will continuously monitor the soil for visible impairment, olfactory indications of impairment, and/or indication of detectable VOCs on a PID as well as indication of impairment from cadmium and silver on an XRF meter. If evidence of impairment is observed at the limits of the excavation, the excavation will be advanced further until field screening parameters appear to indicate the limits of the excavation are below the SCGs. The cadmium impacted soil generated from AOC 3A is anticipated to not be considered a characteristic hazardous waste and will be disposed of at a NYSDEC Part 360 permitted landfill.

Excavation Derived Groundwater:
Groundwater is not anticipated to collect within the remedial excavation based on the relatively proposed shallow depth of the excavation. However, if groundwater or surface water accumulates within the excavation the contractor will be required to dewater the excavation into a Frac tank. The Contractor will be required to dewater the excavation at the sole discretion of LaBella. Groundwater pumped into the Frac tank will be managed and disposed of as described in Section 7.4.

Step 2 – Remedial Excavation Closure Sampling:

At the conclusion of the source removal action a comprehensive closure assessment will be completed by LaBella.

Confirmatory soil samples will be collected from the sidewall of the excavation in accordance with NYSDEC DER-10. Confirmatory soil samples will be submitted to a NYSDOH ELAP certified laboratory and analyzed by the laboratory for cadmium only. The Contractor will assist LaBella with the collection of the confirmatory soil samples. Given that Cadmium was not detected in groundwater above the SCGs within AOC 3A the Restricted Use Soil Cleanup Objective for a Commercial Property will be utilized for excavation closure (i.e. AOC 3A SCG of 9.3 mg/kg for cadmium). In accordance with Section 7.3, the size of the excavation will determine the exact number of sidewall and bottom samples required.

All closure samples will be analyzed on an expedited turn-around-time to facilitate closure of the open excavation in a timely manner. The remedial excavation will not be backfilled until satisfactory closure samples have been obtained.

Confirmation samples will include samples collected during the DPI that was conducted during 2011, as well as samples collected from the excavation bottom sidewalls at the completion of the remedial action. The utilization of existing analytical data will help minimize additional project related costs by eliminating the need to collect additional closure samples at identical locations.

The locations of the confirmatory soil samples and the extent of the excavation area will be documented using GPS technology. Under this approach, the following existing soil samples will be utilized as part of the excavation closure assessment;

Proposed Sidewall Closure Samples

Sample Number	Approximate Location	Depth Collected (ft bgs)	Cadmium mg/Kg
GP-171	5 ft inside the Southern Limits of Excavation	1	0.06 U
GP-171	5 ft inside the Southern Limits of Excavation	3	0.06 U
GP-173	5 ft from the Southern Limits of Excavation	3	0.06 U
GP-174	6 ft inside the Eastern Limits of Excavation	1	4.31
GP-174	6 ft inside the Eastern Limits of Excavation	3	0.06 U
GP-176	8 ft inside the Eastern Limits of Excavation	3	4.95
GP-176	8 ft inside the Eastern Limits of Excavation	5	0.07 U
GP-202	At the Southern Limits of Excavation	3	1.35

Proposed Sidewall Closure Samples (continued)

Sample Number	Approximate Location	Depth Collected (ft bgs)	Cadmium mg/Kg
GP-202	At the Southern Limits of Excavation	5	0.07 U
GP-203	1 ft inside the Eastern Limits of Excavation	1	0.06 U
GP-203	1 ft inside the Eastern Limits of Excavation	5	0.07 U
GP-206	2 ft from the Northern Limits of Excavation	5	0.07 U
GP-210	1 ft inside the Eastern Limits of Excavation	1	0.76
GP-210	1 ft inside the Eastern Limits of Excavation	5	0.37 U
GP-211	12 ft from the Southern Limits of Excavation	1	0.36 U
GP-211	12 ft from the Southern Limits of Excavation	3	0.719
GP-211	12 ft from the Southern Limits of Excavation	5	0.37 U

Proposed Bottom Closure Samples

Sample Number	Location	Depth Collected (ft bgs)	Cadmium mg/Kg
GP-122	Base of excavation	5	0.78
GP-123	Base of excavation	5	0.33 U
GP-134	Base of excavation	5	0.08 U
GP-139	Base of excavation	5	Non Detect
GP-141	Base of excavation	5	0.06 U
GP-142	Base of excavation	5	0.07 U
GP-169	Base of excavation	5	0.06 U
GP-172	Base of excavation	5	0.06 U
GP-200	Base of excavation	5	0.08 U
GP-202	Base of excavation	5	0.07 U
GP-203	Base of excavation	5	0.07 U
GP-204	Base of excavation	5	0.06 U
GP-205	Base of excavation	5	0.09 J
GP-209	Base of excavation	5	0.07 U
GP-210	Base of excavation	5	0.37 U

To satisfy the requirements of NYSDEC DER-10 the following additional closure samples are anticipated;

Area of Concern	Estimated Number of Confirmation Soil Sample		Analysis of Confirmation Soil Samples
	Sidewall	Bottom	
AOC 3A	15	14	Cadmium

Chemtech Consulting Group (Chemtech) will conduct the laboratory testing on the samples collected during the DPI. Chemtech is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. In addition, all laboratory data from the DPI will be reported in an Analytical Services Protocol (ASP) Category B Deliverables data package.

The locations of the existing samples proposed for utilization as part of the excavation closure data package as well as the locations targeted for the collection of additional excavation closure samples to satisfy DER-10 requirements is included on Figure 6C.

Soil removal will continue until confirmation sampling results demonstrate that the grossly impacted cadmium soil has been removed from AOC 3A. For those portions of the excavations where confirmation soil sampling indicates low concentrations of cadmium slightly above the SCG and where nearby (e.g. approximately 5 ft) existing DPI data exists that shows the horizontal extent of cadmium below the SCG; shall provide sufficient information to define the horizontal extent of the contamination. Under this scenario the soils that exceed the SCGs will be removed to the location of the nearby sample and the nearby sample will be included in the excavation closure package (i.e. no additional excavation closure sample will be collected).

Step 11 – Backfill and Site Restoration:

The excavation will be backfilled with clean on-site materials or imported fill material that has been sampled, tested, and approved of by the NYSDEC Project Manager. The AOC 3A excavation will be backfilled to match the design grades as depicted on the drawing set included in Appendix 9.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test. The Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks). LaBella and the City will not be responsible for delays caused by the contractor not secure approvals in a timely manner.

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction or as otherwise placed in compliance with the interim grading plan. If materials fail to meet its specified compaction parameters, the Contractor shall remove and replace the material or otherwise mitigate the concern as directed by the geotechnical engineer until the specified parameters are achieved.

5.4 AOC 4B: Former Chemical Storage Sheds

Borings completed as part of the Day SI/RA and DPI Data Package did not identify appreciable contamination based on soil sampling for RCRA Metals, PAH SVOCs, TCL VOCs, PCBs, and Pesticides and Herbicides, except at one boring GP-49. The sample collected at boring GP-49 at 1 ft below the ground surface (bgs) detected arsenic at a concentrations of 18.1 parts per million (ppm) which is slightly above the SCG of 16 ppm. The location of boring GP-49 is shown on Figure 7.

Objective:

The objective of the remedial measures at AOC 4B includes the over-excavation and off-site disposal of arsenic impacted soil above the SCGs in the area of boring GP-49.

Scope of Work:

LaBella shall direct the Contractor to over-excavate approximately 10 ft by 10 ft by 3 ft deep area or approximately 11 cubic yards of arsenic impacted soil at boring GP-49 as shown on Figure 7. Under the proposed source removal program, arsenic impacted soils are anticipated to require excavation, staging, characterization, and off-site disposal from this location on the site. The following table summarizes the proposed remedial work at AOC 4B.

AOC	**Chemical of Concern**	**Soil Cleanup Objective**	**Range of Concentration of Contaminant Above Soil Cleanup Objective**	**Estimated Area of Impacted Soil**
AOC 4B: Former Chemical Storage Sheds	Arsenic	NYS Part 375-6.8(b) RUSCO for a Commercial Site RUSCO for a Commercial Site: Arsenic – 16 mg/kg	Arsenic – 18.1 mg/kg	100 ft^2
Estimated Vertical Thickness of Impacts	**Estimated Volume of Impacted Soil**	**Estimated Vertical Thickness of Clean Soil Above Impacted Soil**	**Will Excavation be Completed into Bedrock**	**Estimated Volume of Bedrock to be Ripped and Removed**
3 ft	11 yd^3	0 ft	No	0 yd^3
Will Excavation be Completed into Groundwater	**Groundwater Cleanup Objective**	**Range of Concentration of Groundwater Contaminant Above Cleanup Objectives**	**In-Situ Groundwater Treatment Required**	**Estimated Volume of Groundwater To Be Removed From Excavation**
No	Not Applicable	Not Applicable	No	0 gallons
Estimated Volume of Backfill Required	**Estimated Number of Confirmation Soil Samples**	**Laboratory Analysis of Confirmatory Soil Samples**	**Post Source Removal Wells Installed and Type**	**Post Source Removal Groundwater Analysis**
11 yd^3	2 sidewall, 1 base	Arsenic	None	Not Applicable

AOC 4B Phasing; Sequence:

Remediation of AOC 4B shall follow the Phasing Sequence provided below. Details regarding each step within the Phasing Plan are provided in the subsequent sections below;

Step 1- Soil Excavation: The remedial excavation associated with the removal of the source area soils will be completed as Step 1.

Step 2 -Remedial Excavation Closure Sampling: At the conclusion of the source removal action, a comprehensive closure assessment will be completed by LaBella.

Step 3 - Backfill and Site Restoration: Backfill of the resulting excavation and final grading of the site will be completed as Step 3.

Project Implementation:

Details regarding the project phasing are provided below. The phasing schedule is designed to maximize the efficiency of the project.

Step 1 – Soil Excavation:

The remedial excavation associated with the removal of the source area soils will be completed as Step 1. LaBella has implemented a comprehensive Design Phase Investigation to determine the limits of the contaminants of concern associated with AOC 4B. The results of the DPI are depicted on Figure 7 and in Table AOC-4B.

Soil Excavation:
The DPI data suggests that all of the soil within the proposed AOC 4B remedial excavation will require off-site disposal. As such, LaBella shall direct the Contractor to over-excavate approximately 11 cubic yards of arsenic impacted soil as shown on Figure 7 from the ground surface to approximately 3 ft below the ground surface (bgs). Soil removal will continue until confirmation sampling results demonstrate that the arsenic impacted soil has been removed from AOC 4B. LaBella will continuously monitor the soil for visible impairment, olfactory indications of impairment, and/or indication of detectable VOCs on a PID as well as indication of impairment from arsenic on an XRF meter. If evidence of impairment is observed at the limits of the excavation, the excavation will be advanced further until field screening parameters appear to indicate the limits of the excavation are below the SCGs.

Excavation Derived Groundwater:
Groundwater is not anticipated to collect within the remedial excavation based on the proposed shallow depth of excavation. However, if groundwater or surface water accumulates within the excavation the contractor will be required to dewater the excavation. The Contractor will be required to dewater the excavation at the sole discretion of LaBella. Groundwater removed from the excavation will be managed and disposed of as described in Section 7.4.

Step 2 – Remedial Excavation Closure Sampling:

Once the remedial excavation has been terminated, confirmatory soil samples consisting of two sidewall and one bottom will be collected from the excavation in accordance with NYSDEC DER-10 as summarized in Section 7.3. Confirmatory soil samples will be analyzed by the laboratory for arsenic only.

If excavation confirmation soil sampling indicates low concentrations of arsenic above the SCG those soils that exceed the SCGs will be removed and the sidewall re-sampled. The excavation will not be backfilled until satisfactory closure samples are obtained.

Backfill:

The excavation will be backfilled with clean on-site materials or imported fill material that has been sampled, tested, and approved of by the NYSDEC Project Manager. The AOC 1A excavation will be backfilled to match the grades included on the drawing set in Appendix 9.

5.5 AOC 7: Building 2 and 7 Former Wastewater Structures

AOC 7 was initially identified during building demolition using XRF analysis of sub slab soil and the collection and laboratory analysis of soil samples that identified cadmium impacted soil above the SCGs generally at an elevation beneath the former building slab to top of bedrock. The source of the impacts appear to be related to former waste water collection sumps located on the south end of Building 7 and the basement in Building 2 as shown on Figure 8A. The DPI provided information on the areal and vertical extent of soil contamination. Elevated concentrations of silver were also detected at AOC 7 generally in conjunction with cadmium but at concentrations below the SCG.
Groundwater associated with AOC 7 was evaluated during the DPI through the collection of representative groundwater samples from four (4) wells advanced with AOC 7. These wells include;

- IMW-15 – Bedrock Interface Well
- BR-15 – Bedrock Well
- IMW-16 – Bedrock Interface Well
- BR-16 – Bedrock Well

The location of each groundwater monitoring well advanced in association with AOC 7 are depicted on Figures 3 and 8A. Groundwater samples collected from AOC 7 were analyzed for RCRA Metals and the results are summarized on Figure 3. RCRA Metals were not detected above the NYSDEC TOGS 1.1.1 groundwater standards. As such, the impacts to soils do not appear to be having a negative impact on groundwater quality in the vicinity of AOC 7.

Objective:

The objective of the remedial measure will be to over-excavate approximately 370 cubic yards of cadmium impacted source area soils and 110 cubic yards of weathered bedrock.

Scope of Work:

This scope of work includes the over-excavation and off-site disposal of approximate 370 cubic yards of cadmium impacted soil and 110 cubic yards of weathered bedrock at the location shown on Figure 8B and 8C, respectively. The following table summarizes the proposed remedial work at AOC 7.

AOC	Chemical of Concern	Soil Cleanup Objective	Range of Concentration of Contaminant Above Soil Cleanup Objective	Estimated Area of Impacted Soil
AOC 7: Building 2 and 7 Wastewater	Cadmium	NYS Part 375-6.8(b) RUSCO for a Commercial Site RUSCO for a Commercial Site: Cadmium – 9.3 mg/kg	Cadmium –10.1 to 11,900 mg/kg	3,325 ft^2
Estimated Vertical Thickness of Impacts	**Estimated Volume of Impacted Soil**	**Estimated Vertical Thickness of Clean Soil Above Impacted Soil**	**Will Excavation be Completed into Bedrock**	**Estimated Volume of Bedrock to be Ripped and Removed**
3 ft	370 yd^3	7 ft	Yes	110 yd^3
Will Excavation be Completed into Groundwater	**Groundwater Cleanup Objective**	**Range of Concentration of Groundwater Contaminant Above Cleanup Objectives**	**In-Situ Groundwater Treatment Required**	**Estimated Volume of Groundwater To Be Removed From Excavation**
Yes	Not Applicable	Not Applicable	No	30,000 gallons
Estimated Volume of Backfill Required	**Estimated Number of Confirmation Soil Samples**	**Laboratory Analysis of Confirmatory Soil Samples**	**Post Source Removal Wells Installed and Type**	**Post Source Removal Groundwater Analysis**
370 yd^3	12 sidewall	Cadmium	None	Not Applicable

AOC 7 Phasing; Sequence:

Remediation of AOC 7 shall follow the Phasing Sequence provided below. Details regarding each task within the Phasing Plan are provided in the subsequent sections below;

Step 1 – Removal of Clean Fills: The excavation of previously placed clean fills will be completed as Step 1.

Step 2 - Soil and Bedrock Excavation Former Building 2 Source Area (South Excavation): The remedial excavation associated with the removal of the source area soils and shallow bedrock will be completed as Step 2.

Step 3 -Remedial Excavation Closure Sampling Former Building 2 Source Area (South Excavation): At the conclusion of the source removal action a comprehensive closure assessment will be completed by LaBella.

Step 4 - In-Situ Groundwater Treatment Former Building 2 Source Area (South Excavation): The application of in-situ metal immobilization compound, DARAMENDB-M will be completed as Step 4.

Step 5- Installation of Future Extraction Points Former Building 2 Source Area (South Excavation): The installation/construction of two large diameter extraction points will be completed as Step 5.

Step 6 – Partial Backfill Building 2 Source Area (South Excavation): Partial backfill of the resulting excavation of the site will be completed as Step 6.

Step 7 Soil and Bedrock Excavation Former Building 7 Source Area (North Excavation): The remedial excavation associated with the removal of the source area soils and shallow bedrock will be completed as Step 7.

Step 8 -Remedial Excavation Closure Sampling Former Building 7 Source Area (North Excavation): At the conclusion of the source removal action a comprehensive closure assessment will be completed by LaBella.

Step 9 - In-Situ Groundwater Treatment Former Building 7 Source Area (North Excavation): The application of in-situ metal immobilization compound, DARAMENDB-M will be completed as Step 9.

Step 10- Installation of Future Extraction Points Former Building 7 Source Area (North Excavation): The installation/construction of one large diameter extraction point will be completed as Step 10.

Step 11 – Partial Backfill Building 7 Source Area (North Excavation): Partial backfill of the resulting excavation of the site will be completed as Step 11.

Step 12 - Utility Decommissioning: It is anticipated that wastewater infrastructure will be encountered at the limits of the source area excavations. This infrastructure represents a potential source of additional contaminates at the Site. As such, as part of the completion of the remedial action associated with AOC 7 all suspect subgrade wastewater, or other suspect infrastructure, will be removed as Step 12.

Step 13 - Site Restoration: Backfill of the resulting excavation and final grading of this portion of the site will be completed as Step 13.

Project Implementation:

Details regarding the project phasing are provided below. The phasing schedule is designed to maximize the efficiency of the project.

Step 1 – Removal of Clean Fills:

The location of the AOC 7 predominantly lies within an area of the site where a significant amount of clean fills were placed as part of the Building Decommissioning and Demolition Phase of the project completed in 2010. These materials include imported clean fills and recycled on-site masonry products. The location of the placement of these fills within the boundaries of the site is depicted on Foundation Design Figure included in Appendix 3.

To access the source area soils associated with AOC 7 approximately 870 cubic yards of clean fills will require excavation and staging on-site. On average an approximate 7 ft thick layer of clean backfill material is located on top of the cadmium contaminated soil. The interface between the backfill material and cadmium impacted soil is visually different, which should facilitate efficient segregation. LaBella or the Geotechnical Engineer will direct the contractor regarding the excavation, segregation, and placement of all materials generated as part of the AOC 7 excavation. As these clean fill materials are encountered they will not be field screened rather they will be managed on-site for re-use as backfill.

The clean fill materials will be utilized as backfill. To prevent the cross-contamination of the clean fills the contractor will be required to excavate the clean fill layer ahead of any excavation of impacted source area soils. The contractor shall stage all clean fills at the location depicted on Figure 11 or as otherwise approved by LaBella and the City of Rochester.

Step 2 – Soil and Bedrock Excavation Former Building 2 Source Area (South Excavation):

The remedial excavation associated with the removal of the source area soils and shallow bedrock will be completed as Step 2. LaBella implemented a comprehensive Design Phase Investigation to determine the limits of the contaminants of concern associated with AOC 7. The results of the DPI are depicted on Figure 8A and 8B and in Table AOC 7. The cadmium impacted soil is was generally located underneath the former building slabs to top of bedrock in an approximate 2 to 4 ft thick layer. LaBella shall direct the Contractor to separate AOC 7 into two separate remedial excavations as shown on Figure 8B due to the lateral extent of the cadmium impacted soil. At each excavation, the Contractor will be required to remove the clean fill material located over the cadmium impacted soil. Once the clean fills have been removed, the Contractor shall over-excavate the areas of cadmium soil impairment as shown on Figure 8B.

Soil Excavation – Former Building 2 Source Area (south excavation):
The DPI data suggests that all of source area soils below the clean fills within the proposed AOC 7 south remedial excavation will require off-site disposal. As such, LaBella shall direct the Contractor to over-excavate approximately 270 cubic yards of cadmium impacted soil as shown on Figure 8C from the interface of the clean fill/native soils to the top of bedrock. The source area soils below the clean fill range in thickness from approximately 2 to 4 ft.

LaBella will continuously monitor the soil for visible impairment, olfactory indications of impairment, and/or indication of detectable cadmium and silver on an XRF meter. If evidence of impairment is observed at the limits of the excavation, the excavation will be advanced further until field screening parameters appear to indicate the limits of the excavation are below the SCGs.

Bedrock Excavation - Former Building 2 Source Area (south excavation):
The Contractor will be required to "rip-rock" as necessary to remove the approximate top 3 ft of weathered bedrock layers. Prior to the ripping of rock, the Contractor shall bench the sidewalls of the excavation at an angle of 45 degrees or less to reduce the potential of the excavation sidewalls to slough in. Based on the nature of the release and the orientation of the former wastewater infrastructure it is anticipated that impacts may be present within these weathered rock layers. The Contractor will be responsible to reduce the size of the ripped rock into appropriately sized pieces so that the waste stream will be accepted into a NYS Part 360 permitted landfill pending waste characterization analysis. If waste characterization analysis indicates the ripped rock to be representative of a characteristic hazardous waste, the contractor will also be required to manage the waste so that it can be disposed of at a hazardous waste landfill. An estimated 70 cubic yards of rock will be targeted for removal at the location shown on Figure 8C.

This removal action is also designed to provide a deeper excavation area that can be utilized as a groundwater drawdown location if the on-site conditions are such that a high groundwater table is encountered at the time of excavation. The Contractor shall utilize sufficient pump points and equipment to allow for excavation to be completed in the dry.

Excavation Derived Groundwater:
Groundwater is anticipated to collect within the remedial excavation. The Contractor will be required to aggressively and continuously (if required) dewater groundwater potentially impacted with silver and cadmium into a Frac tank. The Contractor will be required to dewater the excavation at the sole discretion of LaBella. The intent of aggressively dewatering groundwater is to remove potential sources of cadmium and silver impacted groundwater in the areas of AOC 7. Groundwater pumped into the Frac tank will be managed and disposed of as described in Section 7.4.

Step 3 -Remedial Excavation Closure Sampling Former Building 2 Source Area (South Excavation):

At the conclusion of the source removal action, a comprehensive closure assessment will be completed by LaBella.

Confirmatory soil samples will be collected from the sidewall of the excavation in accordance with NYSDEC DER-10. Confirmatory soil samples will be submitted to a NYSDOH ELAP certified laboratory and analyzed by the laboratory for cadmium only. The Contractor will assist LaBella with the collection of the confirmatory soil samples.
Confirmation soil samples results will be compared to the Restricted Use Soil Cleanup Objective for a Commercial Site will be utilized for excavation closure (i.e. AOC 7 SCG of 9.3 mg/kg for cadmium). In accordance with Section 7.3, the size of the excavation will determine the exact number of sidewall and bottom samples required.

Confirmatory soil samples will not be collected from base of the excavation, as the excavation will be completed to the top of bedrock. All closure samples will be analyzed on an expedited turn-around-time to facilitate closure of the open excavation in a timely manner. The remedial excavation will not be backfilled until satisfactory closure samples have been obtained.

Confirmation samples will include samples collected during the DPI that was conducted during 2010 and 2011, as well as samples collected from the excavation sidewalls at the completion of the remedial excavation. The utilization of existing analytical data will help minimize additional project related costs by eliminating the need to collect additional closure samples at identical locations. The locations of the confirmatory soil samples and the extent of the excavation area will be documented using GPS technology. Under this approach, the following existing soil samples will be utilized as part of the excavation closure assessment;

Sample Number	Approximate Location	Depth Collected (ft bgs)	Cadmium mg/Kg
TP-08	3 ft from the Southern Limits of Excavation	9	0.3 U
GP-78	5 ft from the Western Limits of Excavation	6.7	0.26
GP-78	5 ft from the Western Limits of Excavation	10.8	0.49
GP-88	At the Northeastern Limits of Excavation	7	0.31
GP-88	At the Northeastern Limits of Excavation	9.7	0.2 J
GP-89	At the Northeastern Limits of Excavation	7	3.29
GP-89	At the Northeastern Limits of Excavation	9.8	0.42
GP-92	At the Northeastern Limits of Excavation	6.7	0.32
GP-92	At the Northeastern Limits of Excavation	9.3	0.44
GP-93	2 ft from the Eastern Limits of Excavation	6.7	0.46

Sample Number	Approximate Location	Depth Collected (ft bgs)	Cadmium mg/Kg
GP-93	2 ft from the Eastern Limits of Excavation	9	0.17 U
GP-94	2 ft from the Southern Limits of Excavation	9.3	5.78
GP-95	1 ft inside the Southern Limits of Excavation	7.1	0.23 J
GP-95	1 ft inside the Southern Limits of Excavation	9.6	0.49
GP-96	1 ft inside the Southern Limits of Excavation	7	0.34
GP-96	1 ft inside the Southern Limits of Excavation	9.5	0.29 J
GP-182	1 ft from the Southern Limits of Excavation	5	3.56
GP-182	1 ft from the Southern Limits of Excavation	7	0.34 U
GP-188	At the Eastern Limits of Excavation	9	0.07 U
GP-194	At the Southwestern Limits of Excavation	7	0.16 J
GP-195	At the Northern Limits of Excavation	7	0.08 J
GP-195	At the Northern Limits of Excavation	9	0.07 U
GP-196	1 ft from the Northern Limits of Excavation	7	0.07 U
GP-196	1 ft from the Northern Limits of Excavation	9	0.16 J
GP-199	3 ft from the Southern Limits of Excavation	7	2.54
GP-199	3 ft from the Southern Limits of Excavation	9	0.06 U

To satisfy the requirements of NYSDEC DER-10 the following additional closure samples are anticipated;

Area of Concern	Estimated Number of Confirmation Soil Sample		Analysis of Confirmation Soil Samples
	Sidewall	Bottom	
AOC 7	8	0	Cadmium

Chemtech Consulting Group (Chemtech) will conduct the laboratory testing on the samples collected during the DPI. Chemtech is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. In addition, all laboratory data from the DPI will be reported in an Analytical Services Protocol (ASP) Category B Deliverables data package.

The locations of the existing samples proposed for utilization as part of the excavation closure data package as well as the locations targeted for the collection of additional excavation closure samples to satisfy DER-10 requirements is included on Figure 8D.

Soil removal will continue until confirmation sampling results demonstrate that the grossly impacted cadmium soil has been removed from AOC 7. For those portions of the excavations where confirmation soil sampling indicates low concentrations of cadmium slightly above the SCG and where nearby (e.g. approximately 5 ft) existing DPI data exists that shows the horizontal extent of cadmium below the SCG; the existing analytical data shall provide sufficient information to define the horizontal extent of the contamination. Under this scenario the soils that exceed the SCGs will be removed to the location of the nearby sample and the nearby sample will be included in the excavation closure package (i.e. no additional excavation closure sample will be collected).

Step 4 - In-Situ Groundwater Treatment Former Building 2 Source Area (South Excavation):

The Contractor will be required to apply an in-situ metal immobilization compound to the base of the ripped-rock excavation in accordance with the manufacturer's specifications. DARAMEND®-M is a controlled release organic carbon, zero-valent iron (ZVI), and a source of sulfate, offered by Adventus Americas, Inc. (Adventus). This product produces a metal-sulfide compound that precipitates out of the dissolved phase and sorbs strongly to soil particles. This essentially immobilizes the compound as it remains fixed to the soil matrix. Adventus' technical summary of DARAMEND®-M is included in Appendix 2.

Approximately 750 pound slurry of DARAMEND®-M will be applied directly on top of the area where the weathered bedrock will be removed/ripped during the remedial activities. DARAMEND®-M will be applied in accordance with the manufacturer's specifications that are included in Appendix 2.

After the DARAMEND®-M has been applied, the remedial excavation will then be backfilled with pea gravel to match the existing top of bedrock, then in accordance with the interim grading plan use on-site or imported fill material that has been sampled, analyzed, and approved by the NYSDEC in accordance with NYSDEC DER-10 as described in Section 8.0.

Step 5- Installation of Future Extraction Points Former Building 2 Source Area (South Excavation):

During the backfilling process, the Contractor will be required to install up to two (2) 12 in. inside diameter perforated high density polyethylene (HDPE) recovery wells at the locations shown on Figure 8C or as otherwise directed by LaBella. The recovery wells shall be placed directly on top of bedrock to an elevation up to 3 ft above finished grade unless otherwise directed by LaBella.

Step 6 – Partial Backfill Building 2 Source Area (South Excavation):

The excavation will be backfilled with clean on-site materials or approved imported fill material in accordance with the interim grading plan or as directed by the geotechnical engineer. The AOC 7 excavation will be partially backfilled to an elevation approximately 4 ft below finished design grades depicted on the drawing set included in Appendix 9.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test. The Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks). LaBella and the City will not be responsible for delays caused by the contractor not secure approvals in a timely manner.

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction or as otherwise placed in compliance with the interim grading plan. If materials fail to meet its specified compaction parameters, the Contractor shall remove and replace the material or otherwise mitigate the concern as directed by the geotechnical engineer until the specified parameters are achieved.

Step 7 – Soil and Bedrock Excavation Former Building 7 Source Area (North Excavation):

The remedial excavation associated with the removal of the source area soils and shallow bedrock will be completed as Step 7. LaBella implemented a comprehensive Design Phase Investigation to determine the limits of the contaminants of concern associated with AOC 7. The results of the DPI are depicted on Figure 8A and 8B and in Table AOC-7. The cadmium impacted soil is was generally located underneath the former building slabs to top of bedrock in an approximate 2 to 4 ft thick layer. The Contractor will be required to remove the clean fill material located over the cadmium impacted soil then over-excavate the areas of cadmium soil impairment as shown on Figure 8B.

Soil Excavation – Former Building 7 Source Area (north excavation):
The DPI data suggests that all of source area soils below the clean fills within the proposed AOC 7 south remedial excavation will require off-site disposal. As such, LaBella shall direct the Contractor to over-excavate approximately 100 cubic yards of cadmium impacted soil as shown on Figures 8B and 8C from the interface of the clean fill/native soils to the top of bedrock. The source area soils below the clean fill range in thickness from approximately 2 to 4 ft.

LaBella will continuously monitor the soil for visible impairment, olfactory indications of impairment, and/or indication of detectable cadmium and/or silver on an XRF meter. If evidence of impairment is observed at the limits of the excavation, the excavation will be advanced further until field screening parameters appear to indicate the limits of the excavation are below the SCGs.

Bedrock Excavation - Former Building 7 Source Area (north excavation):
The Contractor will be required to "rip-rock" as necessary to remove the approximate top 3 ft of weathered bedrock layers. Prior to the ripping of rock, the Contractor shall bench the sidewalls of the excavation at an angle of 45 degrees or less to reduce the potential of the excavation sidewalls to slough in. Based on the nature of the release and the orientation of the former wastewater infrastructure it is anticipated that impacts may be present within these weathered rock layers. The Contractor will be responsible to reduce the size of the ripped rock into appropriately sized pieces so that the waste stream will be accepted into a NYS Part 360 permitted landfill pending waste characterization analysis. If waste characterization analysis indicates the ripped rock to be representative of a characteristic hazardous waste, the contractor will also be required to manage the waste so that it can be disposed of at a hazardous waste landfill. An estimated 70 cubic yards of rock will be targeted for removal at the location shown on Figure 8C.

This removal action is also designed to provide a deeper excavation area that can be utilized as a groundwater drawdown location if the on-site conditions are such that a high groundwater table is encountered at the time of excavation. The Contractor shall utilize sufficient pump points and equipment to allow for excavation to be completed in a dry condition.

Excavation Derived Groundwater:
Groundwater is anticipated to collect within the remedial excavation. The Contractor will be required to aggressively and continuously (if required) dewater groundwater potentially impacted with silver and cadmium into a Frac tank. The Contractor will be required to dewater the excavation at the sole discretion of LaBella. The intent of aggressively dewatering groundwater is to remove potential sources of cadmium and silver impacted groundwater in the areas of AOC 7. Groundwater pumped into the Frac tank will be managed and disposed of as described in Section 7.4.

Step 8 -Remedial Excavation Closure Sampling Former Building 7 Source Area (North Excavation):

At the conclusion of the source removal action at the former Building 7 Source Area excavation as described in *Step 7* comprehensive closure assessment will be completed by LaBella.

Confirmatory soil samples will be collected from the sidewall of the excavation in accordance with NYSDEC DER-10. Confirmatory soil samples will be submitted to a NYSDOH ELAP certified laboratory and analyzed by the laboratory for cadmium only. The Contractor will assist LaBella with the collection of the confirmatory soil samples. Since cadmium was not detected in groundwater samples above the SCGs within AOC 7, the results of the confirmation samples will be compared to the Restricted Use Soil Cleanup Objective for a Commercial Site will be utilized for excavation closure (i.e. AOC 7 SCG of 9.3 mg/kg for cadmium). In accordance with Section 7.3, the size of the excavation will determine the exact number of sidewall and bottom samples required.

Confirmatory soil samples will not be collected from base of the excavation, as the excavation will be completed to the top of bedrock. All closure samples will be analyzed on an expedited turn-around-time to facilitate closure of the open excavation in a timely manner. The remedial excavation will not be backfilled until satisfactory closure samples have been obtained.

Confirmation samples will include samples collected during the DPI that was conducted during 2010 and 2011, as well as samples collected from the excavation sidewalls at the completion of the remedial excavation. The utilization of existing analytical data will help minimize additional project related costs by eliminating the need to collect additional closure samples at identical locations. The locations of the confirmatory soil samples and the extent of the excavation area will be documented using GPS technology. Under this approach, the following existing soil samples will be utilized as part of the excavation closure assessment;

Sample Number	Approximate Location	Depth Collected (ft bgs)	Cadmium mg/Kg
GP-82	2 ft from the Western Limits of Excavation	9	4.2
GP-82	2 ft from the Western Limits of Excavation	10.6	0.46
GP-83	2 ft from the Western Limits of Excavation	9	0.15 J
GP-83	2 ft from the Western Limits of Excavation	11.6	0.25 J
GP-86	At the Eastern Limits of Excavation	9	4.55
GP-86	At the Eastern Limits of Excavation	12.8	0.47
GP-87	2 ft from the Eastern Limits of Excavation	9	0.15 J
GP-87	2 ft from the Eastern Limits of Excavation	10.3	0.43

To satisfy the requirements of NYSDEC DER-10 the following additional closure samples are anticipated;

Area of Concern	Estimated Number of Confirmation Soil Sample		Analysis of Confirmation Soil Samples
	Sidewall	Bottom	
AOC 7	4	0	Cadmium

Chemtech Consulting Group (Chemtech) will conduct the laboratory testing on the samples collected during the DPI. Chemtech is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. In addition, all laboratory data from the DPI will be reported in an Analytical Services Protocol (ASP) Category B Deliverables data package.

The locations of the existing samples proposed for utilization as part of the excavation closure data package as well as the locations targeted for the collection of additional excavation closure samples to satisfy DER-10 requirements is included on Figure 8D.

Soil removal will continue until confirmation sampling results demonstrate that the grossly impacted cadmium soil has been removed from AOC 7. For those portions of the excavations where confirmation soil sampling indicates low concentrations of cadmium slightly above the SCG and where nearby (e.g. approximately 5 ft) existing DPI data exists that shows the horizontal extent of cadmium below the SCG; shall provide sufficient information to define the horizontal extent of the contamination. Under this scenario the soils that exceed the SCGs will be removed to the location of the nearby sample and the nearby sample will be included in the excavation closure package (i.e. no additional excavation closure sample will be collected).

Step 9 - In-Situ Groundwater Treatment Former Building 7 Source Area (North Excavation):

The Contractor will be required to apply an in-situ metal immobilization compound to the base of the ripped-rock excavation in accordance with the manufacturer's specifications. DARAMEND®-M is a controlled release organic carbon, zero-valent iron (ZVI), and a source of sulfate, offered by Adventus Americas, Inc. (Adventus). This product produces a metal-sulfide compound that precipitates out of the dissolved phase and sorbs strongly to soil particles. This essentially immobilizes the compound as it remains fixed to the soil matrix. Adventus' technical summary of DARAMEND®-M is included in Appendix 2.

Approximately 350 pound slurry of DARAMEND®-M will be applied directly on top of the area where the weathered bedrock will be removed/ripped during the remedial activities. DARAMEND®-M will be applied in accordance with the manufacturer's specifications that are included in Appendix 2.

After the DARAMEND®-M has been applied, the remedial excavation will then be backfilled with pea gravel to the top of existing bedrock (not the ripped bedrock area), then use on-site or imported fill material that has been sampled, analyzed, and approved by the NYSDEC in accordance with NYSDEC DER-10 as described in Section 8.0.

Step 10 - Installation of Future Extraction Points Former Building 7 Source Area (North Excavation):

During the backfilling process, the Contractor will be required to install one (1) 12 in. inside diameter perforated high density polyethylene (HDPE) recovery wells at the locations shown on Figure 8C or as otherwise directed by LaBella. The recovery wells shall be placed directly on top of bedrock to an elevation up to 3 ft above finished grade unless otherwise directed by LaBella.

Step 11 – Partial Backfill Building 7 Source Area (North Excavation):

The excavation will be backfilled with clean on-site materials or imported fill material that has been sampled, tested, and approved of by the NYSDEC Project Manager. The AOC 7 excavation will be partially backfilled to an elevation of 4 ft below finished design grades depicted in the drawing set included in Appendix 9.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test. The Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks).

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction or as otherwise placed in compliance with the interim grading plan. If materials fail to meet its specified compaction parameters, the Contractor shall remove and replace the material or otherwise mitigate the concern as directed by the geotechnical engineer until the specified parameters are achieved.

Step 12 - Utility Decommissioning:

It is anticipated that wastewater infrastructure will be encountered at the limits of the source area excavations. This infrastructure represents a potential source of additional contaminates at the site. As such, as part of the completion of the remedial action associated with AOC 7 all suspect subgrade wastewater, or other suspect infrastructure, will be removed.

Given the former suspect waste steams associated with these former systems in the area of AOC 7, all subsurface discharge piping are suspect and will require special handling and decommissioning. The Contractor shall assume that all pipes may contain liquid and/or sludge that should be properly containerized and characterized to determine proper disposal. The Contractor will be required to dispose of all wastes generated as part of the project and LaBella will conduct all waste characterization sampling and testing in accordance with Section 7.5. All separate waste streams shall be segregated (e.g. liquid, sludge, etc.). Final disposal decisions will be made by LaBella and the City of Rochester.

Pipes encountered during the AOC 7 remedial work will require decommissioning to the said pipe's termination point unless otherwise directed by LaBella.

Step 13 - Site Restoration:

After the remedial work and the AOC 7 has been partially backfilled, the Contractor shall complete backfilling of the excavation. The excavation will be backfilled with clean on-site materials or imported fill material that has been sampled, tested, and approved of by the NYSDEC Project Manager. The AOC 7 excavation will backfilled to the finished design grades depicted in the drawing set included in Appendix 9.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test. The Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks).

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction or as otherwise placed in compliance with the interim grading plan. If materials fail to meet its specified compaction parameters, the Contractor shall remove and replace the material or otherwise mitigate the concern as directed by the geotechnical engineer until the specified parameters are achieved.

5.6 AOC13: South Drainage Swale

AOC 13 was identified during the DPI using XRF analysis of and the collection and laboratory analysis of soil samples that indicate the shallow soil is impacted with cadmium above the SCGs. The approximate extent of soil impacts of cadmium are shown on Figure 9 and are summarized on Table AOC-13.

Objective:

The objective of the remedial measure associated with AOC 13 will be to over excavate an approximately 270 cubic yards of cadmium impacted soil.

AOC 13 Scope of Work:

LaBella shall direct the Contractor to over-excavate an approximately 100 ft by 20 ft by 4 feet deep area of cadmium impacted soil as shown on Figure 9. Under the proposed source removal program, cadmium impacted soils will require excavation, staging, characterization, and off-site disposal from this location on the site. The following table summarizes the proposed remedial work at AOC 13.

AOC	Chemical of Concern	Soil Cleanup Objective	Range of Concentration of Contaminant Above Soil Cleanup Objective	Estimated Area of Impacted Soil
AOC 13: South Drainage Swale	Cadmium	NYS Part 375-6.8(b) RUSCO for a Commercial Site for Cadmium – 9.3 mg/kg	Cadmium 11.4 to 132 mg/kg	1,775 ft^2
Estimated Vertical Thickness of Impacts	**Estimated Volume of Impacted Soil**	**Estimated Vertical Thickness of Clean Soil Above Impacted Soil**	**Will Excavation be Completed into Bedrock**	**Estimated Volume of Bedrock to be Ripped and Removed**
4 ft	270 yd^3	0 ft	No	0 yd^3
Will Excavation be Completed into Groundwater	**Groundwater Cleanup Objective**	**Range of Concentration of Groundwater Contaminant Above Cleanup Objectives**	**In-Situ Groundwater Treatment Required**	**Estimated Volume of Groundwater To Be Removed From Excavation**
No	Not Applicable	Not Applicable	No	None
Estimated Volume of Backfill Required	**Estimated Number of Confirmation Soil Samples**	**Laboratory Analysis of Confirmatory Soil Samples**	**Post Source Removal Wells Installed and Type**	**Post Source Removal Groundwater Analysis**
33 yd^3	8 sidewall, 2 base	Cadmium	None	None

LaBella will continuously monitor the soil for visible impairment, olfactory indications of impairment, and/or indication of detectable VOCs on a PID as well as indication of impairment from cadmium and silver on an XRF meter. If evidence of impairment is observed at the limits of the excavation, the excavation will be advanced further until field screening parameters appear to indicate the limits of the excavation are below the SCGs. Under the current scope of work, all excavated soils shall be transported to a NYSDEC Part 360 Landfill for disposal.

Excavation Confirmation Sampling:

Once the remedial excavation has been terminated, confirmatory soil samples consisting of eight sidewall and two bottom will be collected from the excavation in accordance with NYSDEC DER-10 as summarized in Section 7.3. Confirmatory soil samples will be analyzed by the laboratory for cadmium.

Soil removal will continue until confirmation sampling results demonstrate that the grossly impacted soil has been removed from AOC 13. For those portions of the excavations where confirmation soil sampling indicates low concentrations of cadmium slightly above the SCG those soils that exceed the SCGs will be removed and the sidewall re-sampled. The excavation will not be backfilled until satisfactory closure samples are obtained.

Backfill:

After the remedial work and the AOC 13 has been partially backfilled, the Contractor shall backfill the resulting excavation. The excavation will be backfilled with clean on-site materials or imported fill material that has been sampled, tested, and approved of by the NYSDEC Project Manager. The AOC 13 excavation will backfilled to the finished design grades depicted on the drawing set included in Appendix 9.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test. The Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks).

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction or as otherwise placed in compliance with the interim grading plan. If materials fail to meet its specified compaction parameters, the Contractor shall remove and replace the material or otherwise mitigate the concern as directed by the geotechnical engineer until the specified parameters are achieved.

5.7 Underground Pipe and Drop-Inlet Decommissioning

Underground pipes have not been identified as part of an AOC at the site. However, some of the underground pipes may contain wastewater and sludge contaminated with hazardous and/or regulated substances (e.g. cadmium, silver, etc.). As part of the remedial work at the site, the Contractor will be required to decommission by removal all underground pipes and drop inlets identified at the site. Known sub grade piping is shown on Figure 10, but additional piping may be encountered during the course of the work described in this work plan. All discovered piping whether shown on Figure 10 or not will require removal as directed by LaBella.

Based on knowledge that the former use each pipe (e.g. sanitary, silver recovery, water, etc.) is different, and that some of the pipes have the potential to contain hazardous substances (e.g. silver recovery) opposed to pipes that were not used for waste (e.g. water), the Contractor will be required to decommission pipes based on their types as described below. The Contractor will also decommission the pipes in a specific phasing sequence to allow for analysis by LaBella.

5.7.1 Decommissioning of Silver Recovery and Wastewater Pipes:

The decommissioning of the silver recovery and wastewater pipes shall follow the Phasing Sequence provided below. Details regarding each task within the Phasing Plan are provided in the subsequent sections below;

Step 1 – Locate Pipes with GPS
Step 2 – Expose Pipes and Evaluate Surrounding Soil for Contamination
Step 3 – Remove Pipes
Step 4 – Cleaning of Pipes
Step 5 - Assessment of Contaminated Soil
Step 6 –Dispose of Pipes
Step 5 - Backfill and Site Restoration

Step 1 – Locate Pipes with GPS:

LaBella will locate an approximate location for each underground pipe with a hand-held GPS. The Contractor will determine the most efficient order to decommission the pipes.

Step 2 – Expose and Evaluate Surrounding Soil for Contamination:

The Contractor shall expose a maximum 20 ft length of pipe at any one time to allow LaBella to assess the surrounding soil for evidence of impairment. The Contractor will be required to assist LaBella with the screening of soil by allowing the testing of soil within the Contractor's excavator bucket at the direction of LaBella. The Contractor should assume that LaBella will want to evaluate soils below the pipe, and at a minimum below each pipe joint. LaBella will use an XRF meter to screen the excavated soils for the presence of cadmium, silver, and total VOCs on a PID. The Contractor will be required to segregate the soil at the direction of LaBella and in accordance with Section 7.1. If field screening suggests the contaminated soil exists above the SCGs, the Contractor will proceed to remove that section of pipe exposed in accordance with *Step 3*.

Step 3 – Remove Pipes:

If a pipe is damaged during discovery such that the contents of the structure are released, the Contractor shall provide the appropriately trained personnel and equipment to address the release. Possible action items include; sludge, non-aqueous liquids, or contaminated water shall be removed from the subsurface structure and the sludge or liquids shall be containerized by the Contractor, characterized by the Environmental Consultant, and staged on-site pending off-site disposal by others.

The Contractor will be required shoring protection in compliance with OSHA and by other regulatory agency if any individual is to enter an excavation or trench that is greater than 4 ft below the surrounding ground surface. In addition, all excavated soil shall be placed no closer than 3 ft to the edge of an excavation any individual may enter.

Silver recovery and wastewater pipes may contain sludge, non-aqueous liquids, or contaminated water. All wastewater lines shall be assumed to be contaminated and shall be cleaned as described below. To the extent feasible the Contractor shall avoid damaging such structures upon discovery.

Step 4 – Cleaning of Pipes:

Cleaning of underground pipes shall be by physical methods such as scraping, shaking, brushing, etc. Should sludge be present inside of a pipe, the Contractor utilize a high pressure wash to remove the sludge or other solids within the pipes and exterior of pipes if warranted. All cleaning methods shall be conducted over an equipment decontamination area as described in Section 7.12. The Contractor is responsible for proper containerization and disposal of all waste streams from the decontamination procedures. The Contractor will be required to assist LaBella with the visual inspection of the pipes.

The Contractor shall take care not to spill and cross-contaminate other areas of the site during removal and transportation to the decontamination area.

Step 5 – Assessment of Contaminated Soil:

After the pipes have been removed from the excavation in areas where soil contamination has been identified under the procedures described in *Step 2*, The Contractor will be required to excavate the soil contamination as directed by Labella. In addition, the Contractor shall assist LaBella with the collection of soil samples through the advancement of investigation test pits. The Contractor shall assume each excavation may extend to from the ground surface top of bedrock or as otherwise directed by LaBella. As the test pits are being completed, LaBella will use an XRF meter to screen the excavated soils for the presence of cadmium, silver, and total VOCs on a PID. The Contractor will be required to segregate the soil at the direction of LaBella and in accordance with Section 7.1.

Step 6 – Dispose of Pipes:

Once the pipes are considered clean to the satisfaction of LaBella, the Contractor shall dispose the pipes. Metal pipes may be recycled and all other pipes shall be staged on-site and managed as Class 3 Material in accordance with Section 7.1.

Step 7 – Backfill and Site Restoration:

The excavations will be backfilled with clean on-site materials or imported fill material that has been sampled, tested, and approved of by the NYSDEC Project Manager. Open excavation shall not be left over night unless or otherwise protected to prevent a fall or tipping hazard. All open excavations that are not able to be backfilled to existing surrounding grade shall have 4 ft high orange safety fence placed around the perimeter of the hole. The excavation will be backfilled to finished design grades depicted on the drawing set included in Appendix 9.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test. The Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks).

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction or as otherwise placed in compliance with the interim grading plan. If materials fail to meet its specified compaction parameters, the Contractor shall remove and replace the material or otherwise mitigate the concern as directed by the geotechnical engineer until the specified parameters are achieved.

5.7.2 Decommissioning of Drop inlets:

The decommissioning of the drop inlets shall follow the Phasing Sequence provided below. Details regarding each task within the Phasing Plan are provided in the subsequent sections below;

Step 1 – Locate Drop Inlet with GPS
Step 2 – Expose and Evaluate Surrounding Soil for Contamination

Step 3 – Decommission Drop inlet
Step 4 - Assessment of Contaminated Soil
Step 5 – Backfill and Site Restoration

Step 1 – Locate Drop Inlet with GPS:

LaBella will locate an approximate location for each underground pipe with a hand-held GPS. The Contractor will determine the most efficient order to decommission the pipes.

Step 2 – Expose and Evaluate Surrounding Soil for Contamination:

The Contractor shall expose each side of the drop inlet to allow LaBella to assess the surrounding soil for evidence of impairment. The Contractor will be required to assist LaBella with the screening of soil by allowing the testing of soil within the Contractor's excavator bucket at the direction of LaBella. LaBella will use an XRF meter to screen the excavated soils for the presence of cadmium, silver, and total VOCs on a PID. The Contractor will be required to segregate the soil at the direction of LaBella and in accordance with Section 7.1. If contaminated soil is identified it will continue to be assessed as described under *Step 4*.

Step 3 – Decommission Drop Inlet:

Residual liquids existing within the structures shall be containerized pending waste characterization analysis. The bottom of a drop inlet may contain sludge and sediment that contains high concentrations of hazardous substances. Any observed solids, sludge, etc. will be collected and properly containerized for subsequent characterization and disposal. The Contractor will be required to pressure wash the inside of each drop inlet to remove any sediment and sludge within the structure prior to removal. Once the structure is deemed clean (i.e. free of sediment, sludge, and standing water) by the Environmental Consultant, it shall be removed and managed as Class 3 Material as described in Section 7.1.

All pipes connecting to the drop inlets shall be decommissioned by the Contactor in accordance with Section 6.7.1 and 6.7.3.

Step 4 - Assessment of Contaminated Soil:

After the drop inlet has been removed from the excavation the soil beneath the drop inlet will be assessed for contamination. LaBella will use an XRF meter to screen the excavated soils for the presence of cadmium, silver, and total VOCs on a PID. The Contractor will be required to segregate the soil at the direction of LaBella and in accordance with Section 7.1. If contamination is identified underneath a drop inlet or under procedures described in *Step 2*, the Contractor will be required to excavate test pits in the area where the soil contamination was identified and assist LaBella with the collection of soil samples. The Contractor shall assume that each test may extent from the ground surface to top of bedrock or as otherwise directed by LaBella.

Step 5 – Backfill and Site Restoration:

The excavation will be backfilled with clean on-site materials or imported fill material that has been sampled, tested, and approved of by the NYSDEC Project Manager. Open excavation shall not be left over night. All open excavations that are not able to be backfilled to existing surrounding grade shall have a 4 ft high orange safety fence placed around the perimeter of the hole. The excavation will be backfilled to finished design grades depicted on the drawing set included in Appendix 9.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test. The Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks).

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction or as otherwise placed in compliance with the interim grading plan. If materials fail to meet its specified compaction parameters, the Contractor shall remove and replace the material or otherwise mitigate the concern as directed by the geotechnical engineer until the specified parameters are achieved.

5.7.3 Removal of Water, Storm, Gas, and Electric Pipes:

The decommissioning of the water, storm, gas, and electric pipes shall follow the Phasing Sequence provided below. Details regarding each task within the Phasing Plan are provided in the subsequent sections below;

Step 1 – Locate Pipes with GPS
Step 2 – Expose and Remove Pipes
Step 3 – Disposal of Pipes
Step 4 – Backfill and Site Restoration

Step 1 – Locate Pipes with GPS:

LaBella will locate an approximate location for each underground pipe with a hand-held GPS. The Contractor will determine the most efficient order to decommission the pipes.

Step 2 – Expose and Remove Pipes:

Non-suspect underground pipes (i.e. electrical pipes, water pipes, gas pipes, storm.) will not require decontamination. Upon removal that Contractor shall segregate any soil that adheres to the pipes and manage the soil in accordance with Section 7.1. If any of the pipes segregate AOC 2 and AOC 7, LaBella reserved the right to have the Contractor decommission the pipes in accordance with Section 6.7.1.

Step 3 – Disposal of Pipes:

Metal pipes may be recycled and all other pipes shall be staged and managed as Class 3 Material in accordance with Section 7.1.

Step 4 – Backfill and Site Restoration:

The excavations will be backfilled with clean on-site materials or imported fill material that has been sampled, tested, and approved of by the NYSDEC Project Manager. Open excavation shall not be left over night.

All open excavations that are not able to be backfilled to existing surrounding grade shall have a 4 ft high orange safety fence placed around the perimeter of the hole. The excavation will be backfilled to finished design grades depicted on the drawing set included in Appendix 9.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test. The Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks).

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction or as otherwise placed in compliance with the interim grading plan. If materials fail to meet its specified compaction parameters, the Contractor shall remove and replace the material or otherwise mitigate the concern as directed by the geotechnical engineer until the specified parameters are achieved.

The Contractor shall assist the Environmental Consultant with the screening of soils in the test pits by excavating soil at the direction of the Environmental Consultant and providing the soil in the bucket for field screening by the Environmental Consultant. Following excavation, test pits must be backfilled to match the surrounding grade and in accordance with all backfill and compaction requirements and specifications.

5.8 New Stormwater Infrastructure

As part of the remediation of the site, LaBella has evaluated the site's ability to handle stormwater drainages. As a result of the demolition of the former structures and the regrading of the site, post source removal, the installation of a new stormwater drainage structure will be required to prevent potential ponding within the southeastern portion of the site.

As part of this Work Plan the contractor will be required to install a new stormwater drainage system. The system consists of the installation of a new field inlet at the west end of the existing south drainage swale, the installation of a new sanitary manhole within the site and the installation and connection of a new 15-inch storm line from the on-site manhole to Monroe County's Combined Sewer System located in Driving Park Avenue. The design of the new stormwater infrastructure is included on the drawing set in Appendix 9.

5.9 Potential Borrow Pile Evaluation

To facilitate the site restoration, post source removal, the contractor will be required to evaluate an existing soil pile located on-site. The soil pile is located within the existing site fencing. More specifically the soil pile is located on the western portion of the site, just south of the existing fence.

The contractor shall remove and dispose of off-site (or chip and leave on-site) all trees/brush to access the soil pile. Once exposed the contractor shall advance test pits as directed by LaBella to characterize the soils within the soil pile. LaBella will collect representative soil samples to characterize the material within the soil pile. In addition, LaBella may also collect representative soil samples for evaluation for percent organics and proctor testing. All results will be provide to the contractor for review. If this material is acceptable for re-use the contractor may be required to relocate this soil pile as directed by LaBella and/or the Geotechnical Engineer.

6.0 REMEDIAL MEASURES - METHODOLOGY

Section 8.0 that describes the various remedial methodology and protocols proposed for completion of the Remedial Measures at the site.

The Remedial Measures Work Plan is organized into the following sections:

- Section 7.1 Environmental Management Plan to Guide Remedial Excavations
- Section 7.2 On Site Management of Excavated Soil
- Section 7.3 Confirmation Soil Sampling
- Section 7.4 Excavation and Derived Groundwater Management Plan
- Section 7.5 Waste Characterization and Waste Stream Tracking
- Section 7.6 Quality Assurance Project Plan (QAPP)
- Section 7.7 Chain Link Security Fencing
- Section 7.8 Maintenance of Access Roads
- Section 7.9 Personnel Trailers, Staging Areas, and Load Out Areas
- Section 7.10 Preparation of a Health and Safety Plan and Community Air Monitoring Plan
- Section 7.11 Construction of Personnel Decontamination Areas
- Section 7.12 Construction of Vehicle Decontamination Pad
- Section 7.13 Implementation of the Stormwater and Erosion Management Plan
- Section 7.14 Site Access and Temporary Controls
- Section 7.15 Construction of Sanitary Facilities
- Section 7.16 Decommissioning of Groundwater Monitoring Wells
- Section 7.17 Dust Suppression
- Section 7.18 Removal of Asbestos Containing Pipes
- Section 7.19 Asphalt Removal

6.1 Environmental Management Plan to Guide Remedial Excavations

The Environmental Management Plan (EMP) is intended to guide the source removal, disposal, and management of impacted soil, fill materials that will be generated during the remedial work.

The EMP details the approach and the classification system that will be used to field screen and segregate excavated soil during the Remedial Measures. LaBella will be responsible for the field screening and directing the Contractor on the segregation of excavated materials.

Soil will be screened with Minirae PID equipped with a 10.6eV lamp by placing soil into a Ziploc® bag and screening the headspace within the bag using the PID. Soils will also be screened using an Innov-X Systems, Inc. Omega Xpress or Delta handheld XRF meter by placing the XRF meter in front of the sample for a duration that allows the instrument to analyze the chemical composition of the soil sample with the highest degree of accuracy. The XRF will be used to screen for the metals arsenic, cadmium, and/or silver. XRF screening of soil at the Photech site has been successful in identifying impacts. Detections of contaminants (e.g. silver and cadmium) have typically correlated into laboratory detections of contaminants. Although the exact XRF screening concentrations of a contaminant such as cadmium at 30 ppm does not always translate into a laboratory analytical results of the same or close concentration. However, the XRF has proved useful to determine the presence of elevated metals in soils.

Based on the cumulative results of the subsurface investigations completed at the site, it is proposed that the following thresholds be used at the limits of the remedial soil excavations.

Material Classifications

Class of Material	Physical Description and Screening Parameters	Screening Parameter	Management/ Re-use of Material
Unregulated Fills	- Recycled masonry and imported fill material previously approved of by the NYSDEC	- No screening, material will be visually identified	Unrestricted use on-site
Class 1 Material	- Soil and fill materials exhibiting no evidence of impairment such as no petroleum odors, no petroleum soil staining, and no evidence of ash or cinders	- PID less than 5 ppm - XRF Reading of Non-Detect for Cadmium and less than 150 ppm for Silver - XRF Reading of Non-Detect at AOC 4B only	No further excavation required or Unrestricted use on-site
Class 2 Material	The soil targeted for removal and disposal at the AOCs and soil and fill materials containing evidence of impairment such as petroleum odors, soil staining, and ash or cinders	- PID of 5 ppm or greater - XRF Detection of Cadmium and 150 ppm or greater for Silver - XRF Detection of Arsenic at AOC 4B only	Off-site disposal at a NYS Part 360 Permitted Landfill based on waste characterization analysis
Class 3 Material	Concrete, wood, plastic, clay tile, concrete brick, metal unable to be decontaminated, M/P Sub-Grade Structures, concrete vaults	- PID of 5 ppm or greater - XRF Detection of RCRA Metals above the NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives for a Commercial Site	- Off-site disposal at a NYS Part 360 Permitted Landfill based on waste characterization analysis - Concrete (this does not included concrete from 12,000-gallon silver wastewater vault) may be disposed off-site at an approved recycling facility based on waste characterization analysis

Material Classifications (continued)

Class of Material	Physical Description and Screening Parameters	Screening Parameter	Management/ Re-use of Material
Class 4 Material	- Metal M/P Sub-Grade Structures or metal tanks - Asphalt	- A cleaned sanitary, silver recovery line, or pipe containing hazardous substances to the satisfaction of the Environmental Consultant - M/P Sub-Grade Structures (e.g. water pipe) not identified to contain hazardous substances - Asphalt not comingled with other waste	Off-site disposal at an approved recycling facility

The on site management and use of Class 1, Class 2, Class 3, and Class 4 Materials are supported by the site specific screening of materials with a PID and XRF meter and the corresponding analytical data gathered during previous investigations at the site.

6.2 On Site Management of Excavated Soil

All waste streams will be staged separately (e.g. AOC 1A, AOC2, AOC 3A, etc.) and labeled. The Contractor will be required to stage on and cover the Class 2 and 3 Materials during non-working hours with 6-mil polyethylene sheeting. The covers will be anchored or weighted at the edges to prevent storm water and wind borne erosion.

Unregulated Fills: Unrestricted use on-site.

Class 1: Will be staged in the northwestern portion of the site for later use as non structural fill or cover material. The Class 1 staging area is shown on Figure 11. No cover requirements apply to Class 1 Material.

Class 2: Will either be directly loaded into NYSDEC Part 364 trucks for disposal at a NYSDEC Part 360 Permitted Landfill or staged on and covered with polyethylene sheeting in the off-site disposal staging area shown on Figure 11. The covers will be anchored or weighted at the edges to prevent stormwater and wind borne erosion. This area is located at the northwestern corner of the site. In accordance with NYSDEC solid waste regulations, Class 2 Materials will be transported from the site for final disposal within 60 days of staging.

Class 3: Will either be directly loaded into NYSDEC Part 364 trucks for disposal at a NYSDEC Part 360 Permitted Landfill or staged on and covered with polyethylene sheeting in the off-site disposal staging area shown on Figure 11. The covers will be anchored or weighted at the edges to prevent stormwater and wind borne erosion. This area is located at the northwestern corner of the site. In accordance with NYSDEC solid waste regulations, Class 2 Materials will be transported from the site for final disposal within 60 days of staging.

Class 4: Metal materials deemed clean by LaBella and approved for recycling shall be staged in a metal dumpster pending recycling. Asphalt waste can be directly loaded into a truck for off-site recycling or staged in site in designated staging area.

6.3 Confirmation Soil Sampling

Excavation closure sampling will be conducted by LaBella in accordance with NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation.

Confirmation sample locations and depth should be biased toward the areas and depths of highest contamination identified during previous sampling episodes unless field indicators such as field instrument measurements or visual contamination identified during the remedial action indicate that other locations and depths may be more heavily contaminated, and toward locations and depths of the highest expected contamination.

The following are minimum confirmation sampling frequencies for soil excavations:

- less than 20 feet in perimeter shall, at a minimum, include one bottom sample and one sidewall sample biased toward the area of the excavation showing the greatest impacts, if any;
- for an excavation of 20 to 300 feet in perimeter where the remedy is seeking to achieve:
  - (1) surface soil levels, one sample from the top of each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area; and
  - (2) subsurface soil cleanup levels, one sample from the bottom of each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.
- For excavations greater than 300 feet in perimeter, the confirmatory sampling frequency will be as outlined above (i.e., for excavations of 20 to 300 feet in perimeter).
- Each excavation within a larger excavation will be considered a separate excavation and should comply with the above; and bottom samples should be taken from the zero to six-inch interval at the excavation floor.
- If the excavation bottom extends to bedrock, a bottom sample will not be collected.

6.3.1 Confirmation Sampling Analysis:

Excavation closure samples will be collected and submitted to a NYSDOH ELAP certified laboratory. In accordance with Section 7.3, the size of the excavation will determine the exact number of sidewall and bottom samples required. Each confirmation sample will be collected and analyzed based on the location of the AOC as summarized in the table below:

Area of Concern	Estimated Number of Confirmation Soil Sample		Analysis of Confirmation Soil Samples
	Sidewall	Bottom	
AOC 1A	2	1	PAH SVOCs
AOC 2	7	0	Cadmium
AOC 3A	17	15	Cadmium
AOC 4B	2	1	Arsenic
AOC 7	12	None	Cadmium
AOC 13	9	3	Cadmium

Notes:

1. *PAH SVOC denotes sample will be analyzed for Polynucleur Aromatic Hydrocarbons (PAH) or NYSDEC STARS list Semi-Volatile Organic Compounds (SVOCs) using USEPA Method 8270C.*
2. *Arsenic and Cadmium denote sample will be analyzed for cadmium and silver only using USEPA Method 6010*

Chemtech Consulting Group (Chemtech) will conduct the laboratory testing on the samples collected during the DPI. Chemtech is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. In addition, all laboratory data from the DPI will be reported in an Analytical Services Protocol (ASP) Category B Deliverables data package.

The locations of the confirmatory soil samples and the extent of the excavation area will be documented using GPS technology.

6.4 Excavation and Derived Groundwater Management Plan

Groundwater and/or rainwater entering excavations or present within the bedrock will require proper handling, treatment, and disposal. In addition, as part of a remedial measure at AOC 2 and AOC 7, aggressive groundwater dewatering will be required. This section provides procedures for identification and proper handling, containerizing, sampling, treating and discharging of the groundwater and storm water that collects in excavations. The impacted water management plan is as follows:

- LaBella will direct the remedial contractor to stage a minimum or two 21,000-gallon tractor-trailer type frac tanks. The location selected shall be close to the remedial excavation and the temporary sewer connection.
- The Contractor will be required to supply the appropriate number and size of pumps to dewater the excavation. The contractor will be required to utilized best management practices to minimize sediments during pumping.
- The excavation waters will be containerized in frac tanks by the contractor and then sampled by LaBella and analyzed for parameters specified by Monroe County Pure Waters (MCPW). It is anticipated that the excavation waters will ultimately be discharged to the MCPW sewer system.

If treatment of the containerized waters is deemed necessary, then the Contractor shall submit to LaBella a proposed work plan outlining the proposed ground water treatment system. The Contractor shall run an initial pilot test to verify treatment system efficiency. A treated effluent sample will be collected by LaBella and analyzed within 24 hours. Sample results will be submitted to MCPW for review and approval to discharge. If MCPW discharge criteria cannot be met with on-site treatment methods, then transportation and proper off-site disposal of the excavation waters would be needed. A copy of the MCPW Short Term Sewer Use Permit Application is included in Appendix 4.

- LaBella shall attempt to establish a procedure with MCPW whereby, after the treatment systems removal ability has been demonstrated, MCPW will allow for treatment and direct sewer discharge without sampling and analysis of each batch.
- The Contractor shall be responsible for operation and maintenance of the groundwater treatment system.
- The Contractor will be required to obtain the sewer use permit with MCPW.
- In the event that off-site transportation of impacted water is necessary, a valid 6 NYCRR Part 364 Waste Transporter Permit shall be required. The owner will also be required to provide all disposal documentation at an approved treatment storage and disposal facility to the NYSDEC, if required.

6.5 Waste Characterization and Disposal

Waste characterization will be completed by LaBella; however, should the Contractor require laboratory testing as part of their work, the Contractor shall submit to LaBella a list of all laboratories proposed to conduct any such testing. All laboratories shall be New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified for the testing to be completed.

The following Roles and Responsibilities will be undertaken by LaBella regarding waste characterization and disposal for the project:

1. LaBella will perform all waste characterization testing. The Contractor shall work with the Environmental Consultant to determine what waste characterization testing is required by the accepting Treatment and Disposal (T&D) Facility.

2. Waste Characterization samples will be submitted to the laboratory on a standard ten (10) business day turnaround time for final analytical results and reports. A faster turnaround time can be requested by the Contractor to the Environmental Consultant. LaBella reserves final decisions regarding laboratory turnaround times.

3. Waste characterization results will be provided to the Contractor via email or hard copy.

4. The Contractor will be required to assist the Environmental Consultant with the collection of waste characterization samples.

5. LaBella will require proper documentation of waste stream disposal from the Contractor. This documentation may include correspondence from the facility accepting the waste stream, manifests, bills of lading, weight tickets and daily flow meter measurements. At a minimum, the Contractor will be required to submit the following paperwork to LaBella in accordance with the following schedule;

Landfill/Disposal Receipts	Daily
Facility Acceptance Log	Weekly
MCPW Approvals	Within 48 hours of Receipt

6. LaBella will compile the tracking information into the appropriate spread sheet on a weekly basis to allow for accurate material quantification and budget tracking.

The following Roles and Responsibilities will be undertaken by the Contractor regarding waste characterization and disposal for the project:

1. The Contractor shall appropriately label all waste upon receipt of the waste characterization results and the generation of any waste stream in accordance with federal, state, and local regulations. The waste labels shall be in accordance with NYSDOT labeling requirements for the waste type (i.e., hazardous, non-hazardous, etc.). Waste labeling shall be clear, legible, and easily visible at all times.
2. The Contractor shall provide LaBella a minimum of two (2) working days notice when waste characterization sampling and testing will be required.
3. The Contractor shall submit a waste profile and manifest to LaBella for each waste stream required by the T&D Facility. The waste profile will be approved and signed by the City of Rochester prior to submitting to the T&D Facility. The Contractor shall submit waste profiles to the T&D Facility after approval by the City of Rochester. The Contractor shall provide the City of Rochester a minimum of 5 business days to review and sign waste profiles and manifests, if deemed acceptable to the City of Rochester.
4. The Contractor shall be responsible for ensuring all waste leaves the Site in DOT approved containers. The Contractor shall be responsible for any errors in waste characterization resulting in returned waste material from the T&D Facility.
5. The Contractor shall be responsible for ensuring that all waste transported is transported by a NYSDEC Part 364 certified transporter for the waste being transported.
6. The Contractor shall provide LaBella a copy of all weigh tickets within 24 hours of the waste leaving the Site.
7. The Contractor shall provide LaBella a copy of all manifests at the time the waste leaves the Site.
8. The Contractor shall evaluate all liquids for disposal to MCPW (refer to References). For all liquids acceptable for disposal to MCPW, the Contractor shall obtain the necessary sewer use permit from MCPW. For all liquids not acceptable for disposal to MCPW, the Environmental Consultant reserves the right to require pre-treatment (e.g., filtering through a carbon drum) and re-testing of the liquid.

9. In the event pre-treatment is not deemed feasible or the re-tested liquid is still not acceptable to MCPW, the Contractor shall complete a waste profile for off-site disposal and submit it to the Environmental Consultant. Prior to any discharges of liquids to the MCPW sewer, the Contractor will obtain approval from the Environmental Consultant to discharge liquids (in addition to MCPW approval).

6.6 Quality Assurance Project Plan (QAPP)

Environmental programs conducted by or funded by the United States Environmental Protection Agency (USEPA) require that a QAPP be developed for the work that is being completed. Since the remedial work at AOC 2 is being funded by the USEPA, a QAPP was developed for the work associated with AOC 2 and is included in Appendix 5.

6.7 Chain Link Security Fencing

Chain link perimeter fencing equipped with locks is present around the site. This security fence will enclose the entire work area during the proposed remedial measures. This fence will remain during the course of the Remedial Measures. Construction access will be maintained at two locations along Driving Park Avenue. The locations of these access gates are depicted on Figure 11.

6.8 Maintenance of Access Roads

LaBella in conjunction with the Contractor will coordinate the combined use of the site at times of the remedial work. This coordination will include the maintenance of temporary access roads and paved areas adequate for construction operations.

6.9 Personnel Trailers, Staging Areas, and Load Out Areas

LaBella will coordinate the combined use of the site at times of contract overlap. This coordination will include the construction layout of personnel trailers, staging areas, and material load out areas. Designated areas of staging materials and equipment are shown on Figure 11.

6.10 Preparation of a Health and Safety Plan and Community Air Monitoring Plan

Health and Safety Plan (HASP):

The Health and Safety Plan (HASP) for the site is included as Appendix 6 of this Work Plan. The Environmental Contractor selected for the project will be required to prepare and submit a site-specific Health and Safety Plan for the project. The selected contractor will be required to implement their own HASP, as well as meet all pertinent aspects of OSHA regulations.

Community Air Monitoring Plan (CAMP):

Particulate and ambient air monitoring and the availability of dust suppression measures have been required by the NYSDEC during construction activities that disturb Impacted Solid Waste, Impacted Soil, or Impacted Groundwater at sites that are enrolled in the NYSDEC environmental remediation programs. LaBella shall perform the particulate and ambient air monitoring during activities that affect the sub surface in accordance with the New York State Department of Health (NYSDOH) Generic Community Air Monitoring plan included as Appendix 1A in the NYSDEC Department of Environmental Remediation DER-10 guidance document. A copy of this plan is included as Appendix 7.

The CAMP will be implemented at the discretion of LaBella, and is not intended to monitor general earthwork activities that do not disturb Impacted Media.

6.11 Construction of Personnel Decontamination Areas

LaBella will direct the set up of the personal decontamination area that will be used by all personnel at the site performing intrusive activities. The decontamination area shall consist of the necessary equipment and supplies to allow site personnel to decontaminate prior to leaving the site. Wash water and used personnel protective equipment will be containerized and properly disposed of off-site at the end of the Remedial Measures. LaBella will be responsible for characterization and analysis of any resulting waste streams. Wash water will be stored in 55-gallon drums and incorporated into the fractionalization ("frac") tanks for treatment and proper disposal. Accumulated sediments are proposed to be disposed of with the metals impacted soil. LaBella will approve the proposed disposal facility prior to use by the Contractor. A City DEQ Technical Representative will review, approve, and sign all documentation related paperwork as the generator.

6.12 Construction of Decontamination Pad

A decontamination pad will be required at the site and may be used for the following activities or as otherwise approved or directed by LaBella:

- Pipe cleaning;
- Decontamination of equipment used to handle contaminated soil and groundwater;
- Truck decontamination [*Note: It is expected that trucks used for off-site transportation of soils will not come in contact with the contaminated site soils, and therefore should not require decontamination.*]

The decontamination pad shall be constructed of two (2) layers of 6-mil reinforced polyethylene sheeting, with a sump, for the purposes of collecting wash water. Wash water will be stored in 55-gallon drums and incorporated into the frac tanks for treatment and proper disposal. Accumulated sediments are proposed to be disposed of with the metals impacted soil. The decontamination pad will be covered when not in use to limit collection of rain water.

If the decontamination pad appears to be damaged, the Contractor will be required to repair or construct a new decontamination pad at the discretion of LaBella.

The decontamination pad will be disposed of off-site at the completion of the project. LaBella will be responsible for characterization and analysis of waste streams generated in regard to decontamination activities. The City DEQ technical staff will review, approve, and sign all documentation related paperwork as the generator.

If necessary, the Contractor will obtain and keep current a hydrant use permit for the duration of the project.

6.13 Implementation of the Stormwater and Erosion Control Management Plan

The Contractor will install and maintain a silt fence (Mirafi 100X or equivalent) keyed into the existing ground, along the down slope side of the proposed remedial excavation as directed by LaBella and as required by the Contract Documents. The silt fence will be removed and disposed of off-site at the completion of the project.

No work shall be completed at site until LaBella has approved all stormwater management requirements, including the installation of the silt fence and other erosion control measures, as required by the Contract Documents.

The Contractor shall comply with authorities having jurisdiction. The Contractor shall provide barriers in and around excavations to prevent flooding of the excavation by runoff of stormwater from heavy rains or snow melt. The Contractor shall dispose of rainwater in a lawful manner that will not result in flooding the Project or adjoining properties nor endanger permanent Work or temporary facilities.

As part of the stormwater management plan, a new sewer lateral and drainage structure will be installed on site that replaces a faulty system near the Driving Park right-of-way. In addition, a new drainage structure will be installed at the western end of the southern swale to collect stormwater runoff. This drainage structure will be connected to the new sewer drainage structure. The design of the new stormwater system and erosion control measures are included in the drawing set in Appendix 9.

6.14 Site Access and Temporary Controls and Equipment Staging Areas

The Contractor shall conduct all remedial operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

The Contractor shall not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without written permission from LaBella and the City DEQ technical staff and authorities having jurisdiction. The Contractor shall provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

The Contractor shall use water mist and other suitable methods to limit spread of dust, dirt and vapors/odors. The Contractor shall not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

In addition, the Contractor will be required to stage equipment and supplies in an orderly manner so that it will not interfere with the remedial project. An equipment staging plan is shown on Figure 11. Any changes to the staging areas shall be requested by the Contractor and approved of by LaBella.

6.15 Construction of Sanitary Facilities

The Contractor shall provide temporary toilets, wash facilities, and drinking water for use of construction personnel. The Contractor shall comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

6.16 Groundwater Monitoring Well Decommissioning

Prior to the start of the remedial work the Contractor shall decommission the following wells in accordance with the NYSDEC Policy CP-43: Groundwater Monitoring Decommissioning Policy dated November 3, 2009:

- GPMW-8 - Overburden Well
- IMW-14 – Bedrock Interface Well
- BR-17 – Bedrock Well
- IMW-15 – Bedrock Interface Well
- BR-15 – Bedrock Well
- IMW-16 – Bedrock Interface Well
- BR-16 – Bedrock Well
- IMW-17 – Bedrock Interface Well
- BR-17 – Bedrock Well
- Well-08 – Bedrock Interface Well
- Well-07 - Bedrock Interface Well

A copy of the monitoring well logs is included in Appendix 8.

The Contractor will be required to protect and not damage any existing groundwater monitoring well at the site as shown on Figure 3. The Contractor will be responsible to replace any damaged well at their expense and under the direction of LaBella.

6.17 Dust Suppression

The Contractor shall implement dust control measures as directed by LaBella that may include the following methods:

- Apply water on haul roads.
- Wetting equipment and excavation faces.
- Restricting vehicle speeds to 10 mph.
- Hauling material in properly tarped containers.
- Spraying water in buckets during excavation and dumping.
- Reducing excavation size and/or number of excavations.

The Contractor shall have an onsite designated water truck or other dust suppression system. The Contractor shall apply water to all areas of the site where vehicle/equipment traffic will be active. This application rate two hours or less, or as frequent as necessary to eliminate visible emissions from on-site vehicles/equipment. The Contractor shall obtain any necessary permits for hydrant usage, etc.

If, after implementation of dust suppression techniques, downwind particulate levels are greater than 150 µg/m3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind particulate concentration to within 150 µg/m3 of the upwind level and in preventing visible dust migration.

6.18 Removal of Asbestos-Containing Pipe

Based on observations made during the building decommissioning and information available on record drawings, it is anticipated that some asbestos-containing pipe (i.e. transite) may remain at the Site. These suspect underground asbestos containing pipes (ACP) will likely require removal as part of the underground pipe decommissioning as described in Section 6.7. If a suspect ACP is identified, the pipe will be samples and tested by LaBella to confirm the presence of asbestos. If a suspect ACP is confirmed the Contractor will be required to remove and dispose of the pipe in accordance with all applicable federal, state, and local laws and regulations. The removal of any ACP shall be completed by a licensed Asbestos Contractor with certified workers.

LaBella will conduct all bulk and air sampling required by NYS Department of Labor Industrial Code Rule 56. The discovery of ACP does not preclude the Contractor from the decommissioning procedures included in Section 6.7.

6.19 Asphalt Removal

All asphalt currently located at the site will require removal and off-site disposal. The Contractor will be required to remove and dispose of all asphalt material at a recycling facility. No other waste shall be removed and comingled as the asphalt is being removed. No asphalt shall be removed from the site with pre-approval of the waste disposal/recycling facility by LaBella and the City of Rochester.

7.0 BACKFILL SPECIFICATIONS

The excavation will be backfilled to finished design grades depicted on the drawing set included in Appendix 9. Backfill material will include the use soil pile north of the fence line at locations approved of by the geotechnical engineer. The results of soil samples collected from the soil piles are included on Table AOC 13. Other on-site areas may be used as directed by the geotechnical engineer.

If backfill material is required to be imported for this project, the Contractor will be required to collect and analyze all samples to determine it is acceptable for use at the site as required by the geotechnical engineer and collect and analyze samples in accordance with the NYSDEC DER-10 guidance document. Prior to the importation of any fill, it shall be pre-approved by the NYSDEC Project Manager.

Material from the ELAM quarry was previously used as backfill material during the demolition phase of the project in 2010. This material has been sampled and approved of by the NYSDEC for use at the site. If required, the contractor may import this material without additional sampling and approval from the NYSDEC Project Manager. However, the Contractor shall obtain LaBella's approval prior to the use of this material.

Backfill material will be required to be placed in 12-inch thick loose lifts and compacted to 95 percent of maximum dry density as determined by the Modified Proctor test. The Contractor will be required to present current Modified Proctor Testing from any proposed off-site source of backfill. In addition, as required by NYSDEC DER-10 all off-site sources of imported material require laboratory sampling and analysis prior to being transported to the site and placed as fill. The Contractor is required to coordinate this sampling and analysis with LaBella well ahead of their anticipated need for such material (minimum three weeks).

A geotechnical engineering firm and a materials testing firm will be retained by LaBella to be present on site during backfilling activities to conduct compaction testing to determine if the material placed meets 95 percent compaction or as otherwise placed in compliance with the interim grading plan. If materials fail to meet its specified compaction parameters, the Contractor shall remove and replace the material or otherwise mitigate the concern as directed by the geotechnical engineer until the specified parameters are achieved.

8.0 REMEDIAL ACTION DOCUMENTATION

Upon completion of the remedial activities and receipt of all associated analytical data and waste disposal documentation, a Remedial Action Report (RAR) will be prepared that will summarize the actions taken. The report will include:

- A description of the field activities and methodologies;
- Summary of Well Decommissioning activities;
- Tabulations of field- and laboratory-generated data;
- A comparison of sample analytical results to site SCGs;
- A Site Plan showing the final limits of the excavations and stormwater and groundwater dewatering;
- Waste shipment summary that documents quantities of all materials shipped off-site;
- Summary of In-situ Remedial methods utilized;
- Details regarding all new infrastructure installed as part of the RAP;
- Summary of excavation quantities shipped off-site for disposal;
- Summary of fill placement, fill sources and compaction results;
- Copies of laboratory reports; and
- Copies of waste shipping and disposal-related documentation (manifests, weight tickets, etc.)
- Conclusions
- Detailed Figures depicting the activities completed, final site conditions, excavation closure data, new infrastructure, backfill placement, topographic elevations, etc.
- Base GIS data for transfer to the City.

A copy of the RAR will be provided to the NYSDEC and NYSDOH.

Y:\ROCHESTER, CITY\209288 PHOTECH\WORK PLANS\WP6.AOC 2 & 7 REMEDIATION\RPT.2011.08.22.DRAFT WP6-REMEDIAL WORK PLAN.DOCX

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Tables

REFERNCE PAGE FOR DESIGN PHASE INVESTIGATION SAMPLE RESULTS

Former Photech Imaging Site
1000 Driving Park Avenue, Rochester, New York

Qualifiers

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

E (Organics) - Indicates the analyte ‘s concentration exceeds the calibrated range of the instrument for that specific analysis.

E (Inorganics) - The reported value is estimated because of the presence of interference.

D - The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

N - Indicates the matrix spike recovery falls outside of the control limit/

Highlighted Result - Indicates result exceedes the NYSDEC Soil Cleanup Objective

RCRA - Resource Conservation and Recovery Act

SVOCs - Semi-Volatile Organic Compounds

VOCs - Volatile Organic Compounds

RUSCO - Restricted Use Soil Cleanup Objective

mg/kg - milligrams per kilogram

ug/L - micrograms per Liter

NYS - New York State

TABLE AOC 1A

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
PAH SVOCs

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-15-5	GP-16-1	GP-16-8	GP-17-8	GP-18-1	GP-19-0.5	TP-7-2	TP-7-8	TP-8-6	TP-9-2	TP-9-9
Acenaphthene	mg/kg	500	0.4 U	0.069 J	0.38 U	0.38 U	0.36 U	0.052 J	0.14 J	0.39 U	0.37 U	0.047 J	0.39 U
Acenaphthylene	mg/kg	500	0.4 U	0.39 U	0.38 U	0.38 U	0.36 U	0.37 U	0.38 U	0.39 U	0.37 U	0.37 U	0.39 U
Anthracene	mg/kg	500	0.4 U	0.16 J	0.38 U	0.38 U	0.053 J	0.15 J	0.33 J	0.39 U	0.37 U	0.17 J	0.058 J
Benzo(a)anthracene	mg/kg	5.6	0.06 J	0.54	0.38 U	0.05 J	0.13 J	0.49	0.73	0.39 U	0.37 U	0.52	0.11 J
Benzo(a)pyrene	mg/kg	1	0.4 U	0.45	0.38 U	0.38 U	0.092 J	0.37	0.5	0.39 U	0.37 U	0.39	0.076 J
Benzo(b)fluoranthene	mg/kg	5.6	0.058 J	0.65	0.38 U	0.38 U	0.13 J	0.55	0.66	0.39 U	0.37 U	0.54	0.096 J
Benzo(g,h,i)perylene	mg/kg	500	0.4 U	0.27 J	0.38 U	0.38 U	0.05 J	0.22 J	0.3 J	0.39 U	0.37 U	0.21 J	0.39 U
Benzo(k)fluoranthene	mg/kg	56	0.4 U	0.2 J	0.38 U	0.38 U	0.36 U	0.16 J	0.24 J	0.39 U	0.37 U	0.17 J	0.39 U
Chrysene	mg/kg	56	0.071 J	0.55	0.38 U	0.38 U	0.12 J	0.49	0.65	0.39 U	0.37 U	0.5	0.096 J
Dibenz(a,h)anthracene	mg/kg	0.56	0.4 U	0.064 J	0.38 U	0.38 U	0.36 U	0.053 J	0.076 J	0.39 U	0.37 U	0.054 J	0.39 U
Fluoranthene	mg/kg	500	0.12 J	1.3	0.088 J	0.11 J	0.28 J	1	1.5	0.07 J	0.37 U	1.1	0.26 J
Fluorene	mg/kg	500	0.4 U	0.062 J	0.38 U	0.38 U	0.36 U	0.049 J	0.14 J	0.39 U	0.37 U	0.051 J	0.39 U
Indeno(1,2,3-cd)pyrene	mg/kg	5.6	0.4 U	0.28 J	0.38 U	0.38 U	0.052 J	0.23 J	0.31 J	0.39 U	0.37 U	0.22 J	0.052 J
Naphthalene	mg/kg	500	0.4 U	0.39 U	0.38 U	0.38 U	0.36 U	0.37 U	0.06 J	0.39 U	0.37 U	0.37 U	0.39 U
Phenanthrene	mg/kg	500	0.076 J	0.77	0.38 U	0.11 J	0.21 J	0.58	1.1	0.05 J	0.37 U	0.71	0.23 J
Pyrene	mg/kg	500	0.1 J	0.9	0.066 J	0.071 J	0.19 J	0.74	1.1	0.39 U	0.37 U	0.82	0.17 J
Total PAH SVOCs	mg/kg	NA	0.485	6.265	0.154	0.341	1.307	5.134	7.836	0.12	0	5.502	1.148

TABLE AOC 1A

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
RCRA Metals

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-15-5	GP-16-1	GP-16-8	GP-17-8	GP-18-1	GP-19-0.5	TP-7-2	TP-7-8	TP-8-6	TP-9-2	TP-9-9
Arsenic	mg/kg	16	2.16	3.51	4.06	2.26	1.95	2.6	2.94	2.25	2.79	2.34	2.97
Barium	mg/kg	400	36.2	39.8	25.8	15.9	24.9	25.1	33.9	40.1	14.5	29.2	15.8
Cadmium	mg/kg	9.3	0.67	1.04	0.68	0.44	0.59	0.98	0.71	0.5	0.62	0.59	0.51
Chromium	mg/kg	400	4.39	10.5	6.21	3.91	7.4	6.27	6.64	3.89	2.8	4.44	2.74
Lead	mg/kg	1000	29.8	25.9	9.96	6.44	9.64	15.9	15.5	9.97	7.78	30.2	11.2
Mercury	mg/kg	2.8	0.067	0.291	0.033	0.015	0.169	0.228	0.148	0.031	0.006 J	0.061	0.006 J
Selenium	mg/kg	1500	0.85	1.25	1.1	0.51 J	1.03	0.97	0.93 J	0.81 J	0.73 J	0.7 J	0.6 J
Silver	mg/kg	1500	0.37 U	1.78	0.48 U	0.55 U	0.45 U	0.43	0.57 U	0.54 U	0.44 U	4.12	0.57 U

TABLE AOC 2

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
RCRA Metals

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	NYS Part 375-6.8(b) Protection of Groundwater	GP-2-1.5	GP-2-8	GP-4-8.5	GP-6-1	GP-6-4.5	GP-7-1	GP-7-7	GP-7-7-DUP	GP-8-1	GP-8-9	GP-12-5	TP-1-5	GP-62-1	GP-62-10.3	GP-63-9
Arsenic	mg/kg	16	16	4.46	1.53	3.32	4.59	2.64	3.79	3.83	3.95	2.82	2.15	3.16	2.85	---	---	---
Barium	mg/kg	400	820	29.5	23.1	13.9	24.7	16.8	13.8	27	36.9	16.9	27.5	23.3	36.5	---	---	---
Cadmium	mg/kg	9.3	7.5	0.99	0.97	**218**	**35**	2.47	0.88	0.88	0.74	0.62	0.97	1.11	1.33	2.11	0.27 J	0.68
Chromium	mg/kg	400	19	5.39	4.56	3.01	4.22	3.31	2.85	3.61	3.46	2.9	4.11	4.29	6.92	---	---	---
Lead	mg/kg	1000	450	17.9	14.6	12.6	15.9	11.1	15.5	11.8	10.3	10.9	13.9	13.4	10.2	---	---	---
Mercury	mg/kg	2.8	0.73	0.027	0.024	0.027	0.059	0.01 J	0.007 J	0.012	0.012 J	0.01 J	0.024	0.055	0.039	---	---	---
Selenium	mg/kg	1500	4	1.41	0.75 J	0.52 J	0.86 J	0.67 J	0.73 J	0.84 J	0.99 J	0.63 J	1.26	0.83 J	1.04	---	---	---
Silver	mg/kg	1500	8.3	0.6 U	0.2 J	87.6	44.3	1.75	0.58 U	0.45 U	0.54 U	0.41 U	0.51 U	0.52 U	0.39 U	3.88	0.14 U	0.14 U

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	NYS Part 375-6.8(b) Protection of Groundwater	GP-64-6.8	GP-65-5	GP-65-9.2	GP-66-5	GP-66-10.3	GP-67-7	GP-67-11	GP-68-7	GP-68-11	GP-69-7	GP-69-11.3	GP-70-7	GP-70-9	GP-71-1	GP-71-9
Cadmium	mg/kg	9.3	7.5	2.89	0.14 J	0.43	**7.9**	1.6	1.24	0.76	0.34	0.39	0.31	1.19	1.55	0.2 J	3.96	**19.8**
Silver	mg/kg	1500	8.3	0.41 J	0.32 J	0.18 J	11.3	2.38	0.54	2.24	1.47	1.57	2.68	6.65	0.22 U	0.16 U	5.07	15.6

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	NYS Part 375-6.8(b) Protection of Groundwater	GP-71-11	GP-72-5	GP-72-10	GP-73-7.2	GP-73-11	GP-74-5	GP-74-11	GP-75-1	GP-75-9	GP-76-3	GP-76-10.7	GP-156-5	GP-156-10	GP-157-9	GP-158-7
Cadmium	mg/kg	9.3	7.5	**19.7**	**11.9**	18.6	0.64	0.46	0.06 U	0.38	5.37	1.12	**66.4**	**120**	0.31	0.93	1.1	0.62
Silver	mg/kg	1500	8.3	19.8	28.5	32.1	0.16 U	0.16 U	0.15 U	0.17 U	7.35	0.15 U	26.3	36.3	0.13 U	0.14 J	2.47	1.12

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	NYS Part 375-6.8(b) Protection of Groundwater	GP-159-5	GP-159-10.4	GP-160-5	GP-160-10.5
Cadmium	mg/kg	9.3	7.5	0.27	0.46	0.25 J	3.35
Silver	mg/kg	1500	8.3	0.12 U	0.44	0.14 U	8.8

TABLE AOC 3A - FORMER RETENTION POND/BURN PIT

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
RCRA Metals

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-134-1	GP-134-5	GP-135-3	GP-136-3	GP-137-3	GP-137-5	GP-138-3	GP-139-3	GP-139-5	GP-140-1	GP-141-3	GP-142-1	GP-141-5	GP-142-5	GP-142-9	GP-143-3	GP-144-3	GP-145-3	GP-144-5	GP-146-1
Arsenic	mg/kg	16	5.74 N	---	---	---	---	---	1.12 N	---	---	---	2.17 N	---	---	---	---	3.25 N	6.1 N	---	---	---
Barium	mg/kg	400	86.1	---	---	---	---	---	10.9	---	---	---	37.2	---	---	---	---	21.6	42.1	---	---	---
Cadmium	mg/kg	9.3	**123** N	0.08 U	0.3 UN	0.29 UN	**9.92** N	**8.08** N	0.32 UN	0.29 UN	0.35 UN	4.71 N	**10.9** N	0.14 J	0.06 U	0.07 U	0.07 U	0.34 UN	5.72 N	0.29 UN	0.05 U	0.11 J
Chromium	mg/kg	400	206 N*	---	---	---	---	---	2.35 N*	---	---	---	11.5 N*	---	---	---	---	5.78 N*	13.7 N*	---	---	---
Lead	mg/kg	1000	**10900**	---	---	---	---	---	7.05	---	---	---	44.3	---	---	---	---	13.8	32.3	---	---	---
Mercury	mg/kg	2.8	0.172	---	---	---	---	---	0.003 J	---	---	---	0.093	---	---	---	---	0.045	0.097	---	---	---
Selenium	mg/kg	1500	2.93 N	---	---	---	---	---	1.06 UN	---	---	---	2.74 N	---	---	---	---	1.73 N	1.94 N	---	---	---
Silver	mg/kg	1500	471 N	0.93	0.79 N	3.86 N	139 N	356 N	3.5 N	0.35 JN	0.26 JN	18.3 N	209 N	3.59	2.2	0.88	0.18 U	1.71 N	181 N	0.42 JN	0.12 U	5.84

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-146-3	GP-146-5	GP-146-9	GP-147-1	GP-147-5	GP-147-9	GP-148-1	GP-148-5	GP-148-7	GP-149-1	GP-149-5	GP-149-9	GP-150-1	GP-150-5	GP-150-9	GP-152-1	GP-152-5	GP-152-9	GP-154-1	GP-154-5
Arsenic	mg/kg	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	9.3	1.29	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.08 U	0.06 U	0.07 U	0.06 U	0.08 U	0.07 U	0.06 U	0.07 U	0.08 J	0.07 U	0.07 U	0.07 U	0.09 U	0.07 U
Chromium	mg/kg	400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	1000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	2.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	1500	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	1500	0.182 U	0.17 U	0.17 U	0.16 U	0.48 J	0.16 U	0.57 J	0.16 U	0.17	0.16 U	0.19 U	0.18 U	0.16 U	0.17 U	0.16 J	0.28 J	0.18 U	1.2	1.37	0.18 U

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-154-9	GP-153-5	GP-155-3	GP-169-3	GP-169-5	GP-170-3	GP-171-1	GP-171-3	GP-172-3	GP-172-5	GP-173-3	GP-174-1	GP-174-3	GP-175-1	GP-175-3	GP-176-3	GP-176-5	GP-177-3	GP-177-5	GP-178-3
Arsenic	mg/kg	16	---	---	2.32 N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	400	---	---	24.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	9.3	0.07 U	0.33 UN	0.3 UN	0.05 U	0.06 U	3.24	0.06 U	0.06 U	0.07 U	0.06 U	0.06 U	4.31	0.06 U	0.07 U	0.07 U	4.95	0.07 U	0.06 U	0.06 U	0.06 U
Chromium	mg/kg	400	---	---	4.86 N*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	1000	---	---	7.22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	2.8	---	---	0.079	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	1500	---	---	1.1 N	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	1500	0.17 U	0.56 UN	0.51 UN	22.6	0.16 U	122	101	0.15 U	0.44 J	0.14 U	0.16 U	98.9	0.15 U	4.15	0.18 U	28.4	0.17 U	0.2 J	0.16 U	0.15 U

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-179-3	GP-180-1	GP-181-1	GP-181-3	GP-200-1	GP-200-5	GP-201-1	GP-201-5	GP-202-3	GP-202-5	GP-203-1	GP-203-5	GP-204-5	GP-205-5	GP-206-5	GP-208-1	GP-208-5	GP-208-9	GP-209-1	GP-209-5
Cadmium	mg/kg	9.3	0.05 U	0.93	1.88	0.22 J	**44**	0.08 U	0.07 U	0.07 U	1.35	0.07 U	0.06 U	0.07 U	0.06 U	0.09 J	0.07 U	1.72	0.07 U	0.06 U	4.26	0.07 U
Silver	mg/kg	1500	0.13 U	16.9	2.23	10	734	0.19 U	0.17 U	2.26	77.7	0.18 J	0.39 J	1.21	0.14 U	6.5	0.18 U	5.93	0.18 U	0.15 U	58.5	1.34

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-210-1	GP-210-5	GP-211-1	GP-211-5	GP-212-1	GP-212-5	GP-209-3	GP-209-3DL	GP-210-3	GP-210-9	GP-211-3	GP-212-3
Cadmium	mg/kg	9.3	0.76	0.37 U	0.36 U	0.37 U	0.27 U	0.37 U	**12.5**		1.12	0.74	0.719	0.783
Silver	mg/kg	1500	30.7	0.62 U	4.05	0.25 J	0.45 U	0.44 J	437.98 OR	388 D	0.273 J	0.121 U	0.139 U	0.128 U

TABLE AOC 3A - FORMER RETENTION POND/BURN PIT

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
PAH SVOCs

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-134-1	GP-138-3	GP-141-3	GP-143-3	GP-144-3	GP-144-3DL	GP-144-3DL2	GP-155-3
Acenaphthene	mg/kg	500	2 U	0.41 U	0.4 U	0.38 U	29	33 D	34 JD	0.4 U
Acenaphthylene	mg/kg	500	2 U	0.41 U	0.4 U	0.38 U	4.2 U	21 UD	42 UD	0.4 U
Anthracene	mg/kg	500	0.32 J	0.41 U	0.091 J	0.38 U	36 E	44 D	43 D	0.4 U
Benzo(a)anthracene	mg/kg	5.6	1 J	0.41 U	0.27 J	0.38 U	**56** E	**77** D	**76** D	0.4 U
Benzo(a)pyrene	mg/kg	1	0.85 J	0.41 U	0.2 J	0.38 U	**59** E	**56** D	**52** D	0.4 U
Benzo(b)fluoranthene	mg/kg	5.6	1.1 J	0.41 U	0.34 J	0.38 U	**76** E	**77** D	**67** D	0.4 U
Benzo(g,h,i)perylene	mg/kg	500	0.44 J	0.41 U	0.21 J	0.38 U	21	29 D	28 JD	0.4 U
Benzo(k)fluoranthene	mg/kg	56	0.45 J	0.41 U	0.097 J	0.38 U	27	25 D	**30** JD	0.4 U
Chrysene	mg/kg	56	1.1 J	0.41 U	0.29 J	0.38 U	52 E	70 D	**68** D	0.4 U
Dibenz(a,h)anthracene	mg/kg	0.56	2 U	0.41 U	0.4 U	0.38 U	**6.1**	**6.1** JD	**6.3** JD	0.4 U
Fluoranthene	mg/kg	500	2 J	0.41 U	0.54	0.38 U	94 E	**180** ED	**180** D	0.4 U
Fluorene	mg/kg	500	2 U	0.41 U	0.4 U	0.38 U	24	26 D	26 JD	0.4 U
Indeno(1,2,3-cd)pyrene	mg/kg	5.6	0.41 J	0.41 U	0.14 J	0.38 U	**17**	**25** D	**24** JD	0.4 U
Naphthalene	mg/kg	500	2 U	0.41 U	0.4 U	0.38 U	20	26 D	27 JD	0.4 U
Phenanthrene	mg/kg	500	1.4 J	0.41 U	0.35 J	0.38 U	83 E	170 ED	190 D	0.4 U
Pyrene	mg/kg	500	1.9 J	0.41 U	0.49	0.38 U	70 E	150 D	160 D	0.4 U
Total PAH SVOCs	mg/kg	NA	10.97	0	3.018	0	670.1	994.1	1011.3	0

TABLE AOC 3A

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
VOCs

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-97-6.3	GP-98-10.8	GP-117-2.5	GP-121-9	GP-122-9	GP-122-9
1,1,1-Trichloroethane	mg/kg	500	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,1,2,2-Tetrachloroethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,1,2-Trichloroethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,1,2-Trichlorotrifluoroethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,1-Dichloroethane	mg/kg	240	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,1-Dichloroethene	mg/kg	500	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,2,4-Trichlorobenzene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,2,4-Trimethylbenzene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,2-Dibromo-3-Chloropropane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,2-Dibromoethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,2-Dichlorobenzene	mg/kg	500	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,2-Dichloroethane	mg/kg	30	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,2-Dichloropropane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,3,5-Trimethylbenzene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,3-Dichlorobenzene	mg/kg	280	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
1,4-Dichlorobenzene	mg/kg	130	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
2-Butanone	mg/kg	500	0.03 U	0.031 U	0.03 U	0.029 U	0.032 U	0.03 U
2-Hexanone	mg/kg	NA	0.03 U	0.031 U	0.03 U	0.029 U	0.032 U	0.03 U
4-Methyl-2-Pentanone	mg/kg	NA	0.03 U	0.031 U	0.03 U	0.029 U	0.032 U	0.03 U
Acetone	mg/kg	500	0.03 U	0.031 U	0.03 U	0.029 U	0.032 U	0.03 U
Benzene	mg/kg	44	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Bromodichloromethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Bromoform	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Bromomethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Carbon Disulfide	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Carbon Tetrachloride	mg/kg	22	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Chlorobenzene	mg/kg	500	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Chloroethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Chloroform	mg/kg	350	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Chloromethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
cis-1,2-Dichloroethene	mg/kg	500	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
cis-1,3-Dichloropropene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Cyclohexane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Dibromochloromethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Dichlorodifluoromethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Ethyl Benzene	mg/kg	390	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Isopropylbenzene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
m/p-Xylenes	mg/kg	NA	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U
Methyl Acetate	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Methyl tert-butyl Ether	mg/kg	500	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Methylcyclohexane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Methylene Chloride	mg/kg	500	0.006 U	0.018 B	0.018 B	0.0058 U	0.0064 U	0.015
n-Butylbenzene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
n-propylbenzene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
o-Xylene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
sec-Butylbenzene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Styrene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
t-1,3-Dichloropropene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
tert-Butylbenzene	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Tetrachloroethene	mg/kg	150	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Toluene	mg/kg	500	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Total Xylenes	mg/kg	NA	0.018 U	0.018 U	0.018 U	0.017 U	0.019 U	0.018 U
trans-1,2-Dichloroethene	mg/kg	500	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Trichloroethene	mg/kg	200	0.0047 J	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Trichlorofluoromethane	mg/kg	NA	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Vinyl Chloride	mg/kg	13	0.006 U	0.0061 U	0.006 U	0.0058 U	0.0064 U	0.006 U
Total VOCs	mg/kg	NA	0.0047	0.018	0.018	0	0	0.015

TABLE AOC 4B

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
Pesticides

			AOC 4B	
Sample ID	**Units**	**NYS Part 375-6.8(b) RUSCO for a Commercial Site**	**GP49(1)**	**GP49(1)RE**
4,4-DDD	mg/kg	92	0.002 U	0.002 U
4,4-DDE	mg/kg	62	0.002 U	0.002 U
4,4-DDT	mg/kg	47	0.002 U	0.002 U
Aldrin	mg/kg	0.68	0.002 U	0.002 U
alpha-BHC	mg/kg	3.4	0.002 U	0.002 U
alpha-Chlordane	mg/kg	24	0.002 U	0.002 U
beta-BHC	mg/kg	3	0.002 U	0.002 U
delta-BHC	mg/kg	500	0.002 U	0.002 U
Dieldrin	mg/kg	1.4	0.002 U	0.002 U
Endosulfan I	mg/kg	200	0.002 U	0.002 U
Endosulfan II	mg/kg	200	0.002 U	0.002 U
Endosulfan Sulfate	mg/kg	200	0.002 U	0.002 U
Endrin	mg/kg	89	0.002 U	0.002 U
Endrin aldehyde	mg/kg	NA	0.002 U	0.002 U
Endrin ketone	mg/kg	NA	0.002 U	0.002 U
gamma-BHC	mg/kg	9.2	0.002 U	0.002 U
gamma-Chlordane	mg/kg	NA	0.002 U	0.002 U
Heptachlor	mg/kg	15	0.002 U	0.002 U
Heptachlor epoxide	mg/kg	NA	0.002 U	0.002 U
Methoxychlor	mg/kg	NA	0.002 U	0.002 U
Toxaphene	mg/kg	NA	0.02 U	0.02 U

TABLE AOC 4B

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
RCRA Metals

			AOC 4B							
Sample ID	**Units**	**NYS Part 375-6.8(b) RUSCO for a Commercial Site**	**GP32(1.5)**	**GP42(1.5)**	**GP47(7)**	**GP49(1)**	**GP50(6)**	**GP51(1)**	**GP52(1)**	**GP-130-3**
Arsenic	mg/kg	16	4.72	4.13	3.59	**18.1**	1.99	5.42	10.1	2.52 N
Barium	mg/kg	400	38.2	111	20.4	80	19.3	25.5	49.4	52.9
Cadmium	mg/kg	9.3	0.3 U	0.3 U	0.29 U	0.3 U	0.26 U	0.08 J	0.29 U	0.28 UN
Chromium	mg/kg	NA	4.8	11.3	5.57	13.8	5.69	5.31	9.68	6.61 N*
Lead	mg/kg	1000	11.7	14.5	16.2	20.6	8.59	20.8	19.9	7.46
Mercury	mg/kg	2.8	0.014	0.057	0.007 J	0.04	0.01 J	0.011 J	0.037	0.039
Selenium	mg/kg	1500	1	1.84	0.92 J	1.59	1.23	0.69 J	1.88	1.86 N
Silver	mg/kg	1500	0.5 U	0.4 J	0.49 U	0.42 J	0.43 U	0.46 U	0.42 J	0.47 U

TABLE AOC 4B

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
SVOCs

			AOC 4B							
Sample ID	**Units**	**NYS Part 375-6.8(b) RUSCO for a Commercial Site**	**GP32(1.5)**	**GP42(1.5)**	**GP47(7)**	**GP49(1)**	**GP50(6)**	**GP51(1)**	**GP52(1)**	**GP57(11)**
Acenaphthene	mg/kg	500	0.4 U	0.06 J	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Acenaphthylene	mg/kg	500	0.4 U	0.4 U	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Anthracene	mg/kg	500	0.4 U	0.4 U	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Benzo(a)anthracene	mg/kg	5.6	0.4 U	0.12 J	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Benzo(a)pyrene	mg/kg	1	0.4 U	0.11 J	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Benzo(b)fluoranthene	mg/kg	5.6	0.4 U	0.15 J	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Benzo(g,h,i)perylene	mg/kg	500	0.4 U	0.079 J	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Benzo(k)fluoranthene	mg/kg	56	0.4 U	0.4 U	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Chrysene	mg/kg	56	0.4 U	0.12 J	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Dibenz(a,h)anthracene	mg/kg	0.56	0.4 U	0.4 U	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Fluoranthene	mg/kg	500	0.4 U	0.28 J	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Fluorene	mg/kg	500	0.4 U	0.4 U	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Indeno(1,2,3-cd)pyrene	mg/kg	5.6	0.4 U	0.069 J	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Naphthalene	mg/kg	500	0.4 U	0.4 U	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Phenanthrene	mg/kg	500	0.4 U	0.083 J	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Pyrene	mg/kg	500	0.4 U	0.24 J	0.4 U	0.39 U	0.38 U	0.43 U	0.42 U	0.38 U
Total SVOCs	mg/kg	NA	0	1.311	0	0	0	0	0	0

TABLE AOC 4B

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
PCBs

			AOC 4B
Sample ID	**Units**	**NYS Part 375-6.8(b) RUSCO for a Commercial Site**	**GP49(1)**
Aroclor-1016	mg/kg	NA	0.02 U
Aroclor-1221	mg/kg	NA	0.02 U
Aroclor-1232	mg/kg	NA	0.02 U
Aroclor-1242	mg/kg	NA	0.02 U
Aroclor-1248	mg/kg	NA	0.02 U
Aroclor-1254	mg/kg	NA	0.02 U
Aroclor-1260	mg/kg	NA	0.02 U

TABLE AOC 4B

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
Herbicides

			AOC 4B
Sample ID	**Units**	**NYS Part 375-6.8(b) RUSCO for a Commercial Site**	**GP49(1)**
2,4,5-T	mg/kg	NA	0.079 U
2,4,5-TP (SILVEX)	mg/kg	NA	0.079 U
2,4-D	mg/kg	NA	0.079 U
2,4-DB	mg/kg	NA	0.079 U
DICAMBA	mg/kg	NA	0.079 U
DICHLORPROP	mg/kg	NA	0.079 U
DINOSEB	mg/kg	NA	0.079 U

TABLE AOC 7

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
RCRA Metals

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	TP-1-XRF14-092110-0	TP-1-XRF16-092110-3.2	TP-2-XRF11-092110-1.5	TP-3-XRF7-092110-0	TP-3-XRF9-092110-3	TP-4-XRF2-092110-0	TP-5-XRF22-092210-0	TP-7-XRF5-092210-0	TP-7-XRF7-092210-3	TP-8-XRF10-092210-3	TP-9-XRF11-092210-3.3	TP-9-XRF13-092210-0	TP-11-XRF17-092210-3.4	TP-13-XRF5-092310-3	TP-13-XRF7-092310-0	TP-16-XRF15-092310-1.5	TP-17-XRF18-092310-1.5	TP-18-XRF21-092310-1.5	TP-18-XRF24-092310-3	TP-19-XRF26-092310-0
Arsenic	mg/kg	16	3.55	3.41	4.41	4.8	4.06	4.31	3.36	3.13	3.5	5.67	3.9	3.86	2.83	4.15	3.89	3.41	5.03	3.8	2.27	3.25
Barium	mg/kg	400	22	26.6	26.5	27	27.5	26.6	18.2	22.7	25.7	23	26.8	22.5	15	24.5	23.1	15.4	25.7	23	13.1	18.7
Cadmium	mg/kg	9.3	1.65	7.26	**142**	6.66	1.89	2.04	0.24 U	1.91	**10.1**	0.3 U	**116**	0.08 J	0.06 J	0.11 J	2	0.23 U	0.24 U	4.07	**13.3**	**247**
Chromium	mg/kg	400	4.5	5	5.88	5.62	7.05	5.44	3.38	5.21	5.46	4.54	5.35	4.07	3.18	4.74	7.8	3.71	4.74	4.84	2.79	4.22
Lead	mg/kg	1000	11.9	15.3	25.1	17.6	17.8	18.1	11.6	13.7	11.7	17.4	15	14.7	12.8	13.7	13.4	12.8	20.6	13.9	7.95	17.9
Mercury	mg/kg	2.8	0.013	0.023	0.009 J	0.044	0.103	0.038	0.01 J	0.038	0.015	0.01 J	0.031	0.007 J	0.006 J	0.01 J	0.015	0.005 J	0.045	0.031	0.008 J	0.017
Selenium	mg/kg	1500	0.35 J	0.63 J	0.94	1.01	0.93	0.55 J	0.57 J	0.87 U	0.67 J	1.18	0.71 J	0.78	0.45 J	0.5 J	0.6 J	0.86	0.9	0.48 J	0.78 U	0.63 J
Silver	mg/kg	1500	0.78	8.41	53.4	4.55	2.29	2.46	0.4 U	2.42	9.47	0.48 J	14.1	0.16 J	0.12 J	0.25 J	1.82	0.38 U	0.68	2.43	3.26	33.3

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	TP-19-XRF28-092310-2.6	BLDG2-XRF44-091410-3	BLDG2-XRF2-091510-SUMP	BLDG2-XRF2-091510-SUMPDL	BLDG2-XRF6-091510-3	BLDG2-XRF10-091510-0	XRF22-100810	XRF15-101010	XRF22-100810	XRF15-101010	XRF8 091110	XRF12 091110 Bldg 7 Pit	XRF 19 091310	XRF22 091310	XRF6 091410	XRF8 091410	XRF15 091410	XRF21 091410	XRF48 091410	XRF20 091010
Arsenic	mg/kg	16	3.23	3.9	4.02	5.77 UD*	3.71	5.2	3.7	3.44	3.7	3.44	4.39	4.8	5.49	5.26	7.15	6.42	5.93	4.74	6.78	5.11
Barium	mg/kg	400	19.9	15	14.2	14.8 JD	21.8	20.6	20.3	14.5	20.3	14.5	19.3	33.3	24.7	26.4	27.7	31.1	25.4	18	17.3	23.8
Cadmium	mg/kg	9.3	3.05	1.87	**8700** OR	**11900** D	**157**	0.2 U	0.17 J	0.25 U	0.17 J	0.25 U	0.494 U	**138**	**168**	0.729	**1040**	**311**	**125**	**121**	0.267 J	0.409 U
Chromium	mg/kg	400	3.79	3.36	4.46	5.1 JD	5.12	4.35	5.27	4.81	5.27	4.81	4.77	8.25	6.71	6.88	7.78	5.94	5.55	6.85	5.76	12.7
Lead	mg/kg	1000	12.3	16.3	54.8	59.4 D	15.7	13.7	18	10.5	18	10.5	11.2	32.4	19.8	16.6	17.2	35.3	18.2	10.9	12.4	6.38
Mercury	mg/kg	2.8	0.007 J	0.012 J	0.014	0.014	0.009 J	0.011 J	0.008 J	0.014	0.008 J	0.014	0.0064 U	0.022	0.0106	0.0247	0.0166	0.0278	0.0041 J	0.0045 J	0.0089 U	0.066
Selenium	mg/kg	1500	0.65 J	0.43 J	0.75 J	17.5 UD	0.47 J	0.48 J	0.71 J	1.23	0.71 J	1.23	0.494 U	0.487 U	0.487 U	0.477 U	0.631 U	0.496 U	0.427 U	0.481 U	0.487 U	0.409 U
Silver	mg/kg	1500	1.87	0.57	956 OR	999 D	48.3	0.19 J	0.15 J	0.41 U	0.15 J	0.41 U	0.988 U	1650	12.9	23.1	231	143	24.3	198	0.525 J	0.817 U

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	XRF22-100810	XRF15-101010	XRF22-100810	XRF15-101010	GP54(11.5)	GP55(11)	GP56(10)	GP57(11)	GP-77-7	GP-77-11.6	GP-78-6.7	GP-78-10.8	GP-79-3	GP-79-10.1	GP-80-3	GP-80-9.8	GP-81-9	GP-81-11.3	GP-82-9	GP-82-10.6
Arsenic	mg/kg	16	3.7	3.44	3.7	3.44	6.06	3.65	5.7	4.87	---	---	---	---	---	---	---	---	---	---	---	---
Barium	mg/kg	400	20.3	14.5	20.3	14.5	17.5	15.3	25.1	21.3	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	mg/kg	9.3	0.17 J	0.25 U	0.17 J	0.25 U	0.09 J	0.26 J	**47.5**	0.11 J	0.65	0.59	0.26	0.49	3.55	0.37	0.53	**59.6**	0.68	6.79	4.2	0.46
Chromium	mg/kg	400	5.27	4.81	5.27	4.81	4.21	3.99	5.48	4.18	---	---	---	---	---	---	---	---	---	---	---	---
Lead	mg/kg	1000	18	10.5	18	10.5	19.3	21.4	22	27.8	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	mg/kg	2.8	0.008 J	0.014	0.008 J	0.014	0.009 J	0.011 U	0.015	0.008 J	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	mg/kg	1500	0.71 J	1.23	0.71 J	1.23	1.13	0.82 J	1.35	0.89 J	---	---	---	---	---	---	---	---	---	---	---	---
Silver	mg/kg	1500	0.15 J	0.41 U	0.15 J	0.41 U	0.2 J	0.15 J	15	0.16 J	1.27	1.08	0.12 U	1.29	64	0.12 U	1.94	41	0.74	1.94	5.7	0.99

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-83-9	GP-83-11.6	GP-84-10.1	GP-84-12.4	GP-85-11.2	GP-86-9	GP-86-12.8	GP-87-9	GP-87-10.3	GP-88-7	GP-88-9.7	GP-89-7	GP-89-9.8	GP-90-7.1	GP-90-9	GP-91-7.2	GP-91-9.2	GP-92-6.7	GP-92-9.3	GP-93-6.7
Cadmium	mg/kg	9.3	0.15 J	0.25 J	6.28	0.46	0.24 J	4.55	0.47	0.15 J	0.43	0.31	0.2 J	3.29	0.42	0.44	0.27	**16.3**	0.4	0.32	0.44	0.46
Silver	mg/kg	1500	0.14 U	0.14 U	4.33	10	0.15 U	2.73	1.05	0.14 U	0.13 U	0.12 U	0.12 U	6.29	0.12 U	0.13 U	0.13 U	6.11	0.73	0.12 U	0.17 U	0.16 U

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-93-9	GP-94-9.3	GP-95-7.1	GP-95-9.6	GP-96-7	GP-96-9.5	GP-182-5	GP-182-7	GP-183-7	GP-183-9	GP-184-7	GP-184-9	GP-185-7	GP-185-9	GP-186-7	GP-186-9	GP-187-7	GP-187-9	GP-188-9	GP-189-7
Cadmium	mg/kg	9.3	2.05	5.78	0.23 J	0.49	0.34	0.29 J	3.56	0.34 U	**65.8**	0.32 U	3.77	**296**	**23.9**	**403**	**279**	**69.9**	0.37 U	0.33 U	0.07 U	**64.2**
Silver	mg/kg	1500	0.98	1.56	0.14 U	0.13 U	0.13 U	0.15 U	1	0.57 U	18.5	0.53 U	6.74	55	25.2	49.8	25.9	27.2	0.62 U	0.55 U	0.17 U	22.5

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-189-9	GP-191-7	GP-191-11	GP-192-7	GP-192-9	GP-193-9	GP-194-7	GP-194-11	GP-195-7	GP-195-9	GP-196-7	GP-196-9	GP-197-7	GP-197-9	GP-198-7	GP-198-9	GP-199-7	GP-199-9
Cadmium	mg/kg	9.3	0.07 U	0.06 U	445	**12.8**	0.07 U	0.06 U	0.16 J	0.08 U	0.08 J	0.07 U	0.07 U	0.16 J	1.1	0.07 U	0.3 J	0.06 U	2.54	0.06 U
Silver	mg/kg	1500	0.17 U	0.14 U	147	1.05	0.18 U	0.16 U	3.03	0.19 U	2.17	0.17 U	0.18 U	0.17 U	0.26 J	0.18 U	0.17 U	0.16 U	1.79	0.16 U

TABLE AOC 13

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
Metals

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-213-2	GP-214-2	GP-215-0	GP-215-1	GP-215-4	GP-216-0	GP-216-2
Cadmium	mg/kg	9.3	8.35	1.68	**14.7**	6.59	3.46	4	**11.4**
Silver	mg/kg	1500	50.7	13.1	198	2.95	6.04	6.98	0.21

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GP-216-4	GP-217-0	GP-217-2	GP-217-4	GP-218-0	GP-218.2	GP-218-4
Cadmium	mg/kg	9.3	0.9	1.2	**132**	1.75	1.73	**17.1**	0.24
Silver	mg/kg	1500	0.24	3.46	241	0.74	4.37	34.8	0.4

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	GS-37 (1'-4')
Cadmium	mg/kg	9.3	0.604 U
Silver	mg/kg	1500	1.21 U

TABLE AOC 13

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
VOCs

Sample ID	Units	NYS Part 375-6.8(b) RUSCO for a Commercial Site	S-1	S-2	S-3
1,1,1-Trichloroethane	mg/kg	100	0.0061 U	0.0059 U	0.006 U
1,1,2,2-Tetrachloroethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
1,1,2-Trichloroethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
1,1,2-Trichlorotrifluoroethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
1,1-Dichloroethane	mg/kg	26	0.0061 U	0.0059 U	0.006 U
1,1-Dichloroethene	mg/kg	100	0.0061 U	0.0059 U	0.006 U
1,2,4-Trichlorobenzene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
1,2,4-Trimethylbenzene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
1,2-Dibromo-3-Chloropropane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
1,2-Dibromoethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
1,2-Dichlorobenzene	mg/kg	100	0.0061 U	0.0059 U	0.006 U
1,2-Dichloroethane	mg/kg	3.1	0.0061 U	0.0059 U	0.006 U
1,2-Dichloropropane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
1,3,5-Trimethylbenzene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
1,3-Dichlorobenzene	mg/kg	49	0.0061 U	0.0059 U	0.006 U
1,4-Dichlorobenzene	mg/kg	13	0.0061 U	0.0059 U	0.006 U
2-Butanone	mg/kg	100	0.0061 U	0.0059 U	0.006 U
2-Hexanone	mg/kg	NA	31 U	30 U	30 U
4-Methyl-2-Pentanone	mg/kg	NA	31 U	30 U	30 U
Acetone	mg/kg	100	31 U	30 U	30 U
Benzene	mg/kg	4.8	0.0061 U	0.0059 U	0.006 U
Bromodichloromethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Bromoform	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Bromomethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Carbon Disulfide	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Carbon Tetrachloride	mg/kg	2.4	0.0061 U	0.0059 U	0.006 U
Chlorobenzene	mg/kg	100	0.0061 U	0.0059 U	0.006 U
Chloroethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Chloroform	mg/kg	49	0.0061 U	0.0059 U	0.006 U
Chloromethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
cis-1,2-Dichloroethene	mg/kg	100	0.0061 U	0.0059 U	0.006 U
cis-1,3-Dichloropropene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Cyclohexane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Dibromochloromethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Dichlorodifluoromethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Ethyl Benzene	mg/kg	41	0.0061 U	0.0059 U	0.006 U
Isopropylbenzene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
m/p-Xylenes	mg/kg	NA	12 U	12 U	12 U
Methyl Acetate	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Methyl tert-butyl Ether	mg/kg	100	0.0061 U	0.0059 U	0.006 U
Methylcyclohexane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Methylene Chloride	mg/kg	100	4.2 JB	2.6 J	2.8 J
n-Butylbenzene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
n-propylbenzene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
o-Xylene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
sec-Butylbenzene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Styrene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
t-1,3-Dichloropropene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
tert-Butylbenzene	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Tetrachloroethene	mg/kg	19	0.0061 U	0.0059 U	0.006 U
Toluene	mg/kg	100	0.0061 U	0.0059 U	0.006 U
Total Xylenes	mg/kg	NA	18 U	18 U	18 U
trans-1,2-Dichloroethene	mg/kg	100	0.0061 U	0.0059 U	0.006 U
Trichloroethene	mg/kg	21	0.0061 U	0.0059 U	0.006 U
Trichlorofluoromethane	mg/kg	NA	0.0061 U	0.0059 U	0.006 U
Vinyl Chloride	mg/kg	0.9	0.0061 U	0.0059 U	0.006 U

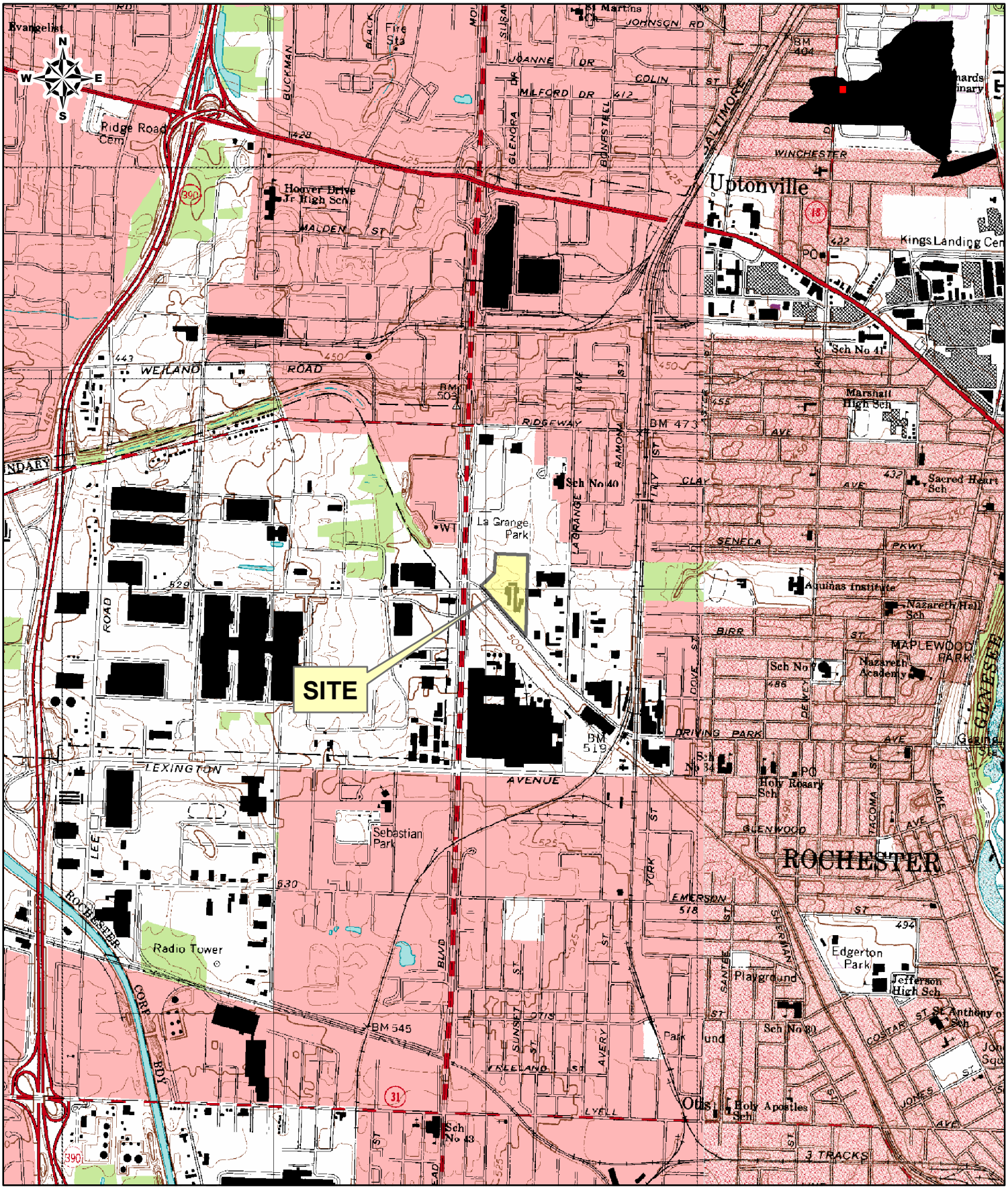
TABLE AOC 13

Former Photech Imaging Site, 1000 Driving Park Avenue, Rochester, New York
Design Phase Investigation Sample Results
SVOCs

Sample ID	Units	NYS Part 375-6.8(A) Unrestricted Soil Cleanup Objective	NYS Part 375-6.8(b) RUSCO for a Commercial Site	S-1	S-2	S-3
Acenaphthene	mg/kg	20	500	0.2 J	0.16 J	0.33 J
Acenaphthylene	mg/kg	100	500	0.01 U	0.0099 U	0.001 U
Anthracene	mg/kg	100	500	0.54	0.38	0.8
Benzo(a)anthracene	mg/kg	1	5.6	1.1	0.77	1.3
Benzo(a)pyrene	mg/kg	1	1	0.95	0.66	1
Benzo(b)fluoranthene	mg/kg	1	5.6	1.3	0.9	1.4
Benzo(g,h,i)perylene	mg/kg	100	500	0.56	0.65 J	0.54
Benzo(k)fluoranthene	mg/kg	0.8	56	0.4 J	0.26 J	0.49
Chrysene	mg/kg	1	56	1.0	0.71	1.1
Dibenz(a,h)anthracene	mg/kg	0.33	0.56	0.098 J	0.087 J	0.15 J
Fluoranthene	mg/kg	100	500	2.4	1.7	2.7
Fluorene	mg/kg	30	500	0.21 J	0.2 J	0.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	5.6	0.52	0.3 J	0.47
Naphthalene	mg/kg	12	500	55 J	0.097 J	0.14 J
Phenanthrene	mg/kg	100	500	1.9	1.5	2.7
Pyrene	mg/kg	100	500	1.9	1.3	2.1
Total PAH SVOCs	mg/kg	NA	NA	68.078	9.674	15.62

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Figures



PROJECT/DRAWING NUMBER

209288

FIGURE 1

DRAWING TITLE

SITE LOCATION WITH USGS 7.5 MINUTE TOPO MAP ROCHESTER WEST QUAD

1:24,000

ISSUED FOR: REVIEW

DATE: 9/1/2009

DESIGNED BY: RCN

DRAWN BY: RCN

REVIEWED BY: DEP

PROJECT/CLIENT

CITY OF ROCHESTER DEQ

SILVER RECOVERY VAULT AREA
INTERIM REMEDIAL MEASURE
WORK PLAN

FORMER PHOTECH
IMAGING FACILITY
1,000 DRIVING PARK AVENUE
ROCHESTER, NY

LABELLA Associates, P.C.

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Legend

- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit
- Proposed Remedial Excavation
- Swale
- Regulated Wetland
- Underground Tank or Vault
- Former Building
- Former Tunnel
- Parcel

Driving Park Avenue

AOC 4B
Former Chemical Storage Sheds

Former Building #15
Chemical Storage Shed

Former Chemcial Storage Shed

Former Building #13
Warehouse

AOC 2
Silver Recovery Wastewater System

Former Guard House
Former Building #11
Chemical Lab

Former Building #16
Process Building

AOC 1A
East of Chemical Building #11

Former Building #12
Subcoat Building

Former Tunnel

Former Building #9

Former Building #10

Former Tunnel

Former Building #17
Dryer Addition

Passenger Hallway

Former Building #7
Coating Alley

Former Tunnel

Former Building #1
Research and Development

Former Building #2
Emulsion Building

Former Building #3
Garage

Former Building #4
Maintenance Shop

Former Building #5
Boiler House

Former Building #6
Stationary Engineering

Former Carpenter Shed

AOC 13
South Drainage Swale

Swale

AOC 7
Building 2 and 7 Wastewater

Wetland

AOC 3A
Former Retention Pond/
Burn Pit

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1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

REMEDIAL AREA OF CONCERN MAP

N
W
S
E

0 70
1 inch = 70 feet

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FIGURE 2A

Legend

- Proposed Remedial Excavation
- Swale
- Regulated Wetland
- Parcel

Driving Park Avenue

AOC 4B
Former Chemical Storage Sheds

AOC 2
Silver Recovery Wastewater System

AOC 13
South Drainage Swale

Swale

Wetland

AOC 7
Building 2 and 7 Wastewater

AOC 1A
East of Chemical Building #11

AOC 3A
Former Retention Pond/ Burn Pit

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REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

REMEDIAL AREA OF CONCERN MAP AND REDEVELOPMENT CONCEPT PLAN

N
W E
S

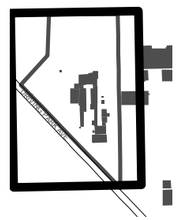
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1 inch = 90 feet

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FIGURE 2B

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Legend

Well Status

- Decommissioned
- Destroyed
- Missing
- In-Use
- Proposed Remedial Excavation
- Swale
- Regulated Wetland
- Underground Tank of Water Vault
- Former Building
- Former Tunnel
- Parcel

NOTES:

1. **Red** text denotes value exceeded the NYSDEC Technical and Operational Guidancec Series 1.1.1 Groundwater Standard.

2. ppb denotes parts per billion

R-302
RCRA Metals
Arsenic 10 U ppb
Barium 8.79 J ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 6 U ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb
SVOCs
No Exceedances
VOCs
No Exceedances

Well-01
RCRA Metals
Arsenic 10 U ppb
Barium 60.8 ppb
Cadmium 8.45 ppb
Chromium 5 U ppb
Lead 3.44 J ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 7.83 ppb
SVOCs
No Exceedances
VOCs
No Exceedances

GPMW-08
RCRA Metals
Arsenic 10 U ppb
Barium 239 ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 3.02 J ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb
SVOCs
No Exceedances
VOCs
No Exceedances

Well-11
RCRA Metals
Arsenic 10 U ppb
Barium 105 ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 5.46 J ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb
SVOCs
No Exceedances
VOCs
No Exceedances

Well-13
RCRA Metals
Arsenic 10 U ppb
Barium 88.9 ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 6 U ppb
Mercury 0.2 U ppb
Selenium 5.46 J ppb
Silver 5 U ppb
SVOCs
No Exceedances
VOCs
No Exceedances

IMW-15
RCRA Metals
Arsenic 4.56 J ppb
Barium 19.9 J ppb
Cadmium 2.12 J ppb
Chromium 1.74 J ppb
Lead 2.6 U ppb
Mercury 0.09 U ppb
Selenium 4.8 U ppb
Silver 1.5 U ppb

BR-15
RCRA Metals
Arsenic 10 J ppb
Barium 13.1 J ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 5.54 J ppb
Mercury 0.2 U ppb
Selenium 5.27 J ppb
Silver 5 U ppb

Well-06
RCRA Metals
Arsenic 10 U ppb
Barium 75.5 ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 6 U ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb
SVOCs
No Exceedances
VOCs
No Exceedances

IMW-14
RCRA Metals
Arsenic 4.24 J ppb
Barium 38.4 J ppb
Cadmium 1.53 J ppb
Chromium 5 U ppb
Lead 6 UN ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb

BR-14
RCRA Metals
Arsenic 10 J ppb
Barium 22.2 J ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 3.04 J ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb

IMW-16
Metals
Cadmium 3 U ppb
Silver 5 U ppb

BR-16
RCRA Metals
Arsenic 10 J ppb
Barium 261 J ppb
Cadmium 3 J ppb
Chromium 1.21 U ppb
Lead 17 ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb

Well-08
RCRA Metals
Arsenic 7.08 J ppb
Barium 57.6 ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 2.8 J ppb
Mercury 0.2 UN ppb
Selenium 10 U ppb
Silver 1.68 J ppb

Well-07
Metals
Cadmium 3 U ppb
Silver 1.66 J ppb

IMW-17
RCRA Metals
Arsenic 4.2 U ppb
Barium 62.9 ppb
Cadmium 0.5 U ppb
Chromium 1.1 U ppb
Lead 2.6 U ppb
Mercury 0.9 U ppb
Selenium 4.8 U ppb
Silver 1.5 U ppb
SVOCs
No Exceedances
VOCs
Trichloroethene 5.6 ppb

BR-17
RCRA Metals
Arsenic 10 U ppb
Barium 26.1 J ppb
Cadmium 0.65 J ppb
Chromium 1.25 J ppb
Lead 8.16 J ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb
SVOCs
No Exceedances
VOCs
No Exceedances

AOC 4B
Former Chemical Storage Sheds

AOC 1A
East of Chemical Building #11

AOC 13
South Drainage Swale

AOC 2
Silver Recovery Wastewater System

AOC 7
Building 2 and 7 Wastewater

AOC 3A
Former Retention Pond/
Burn Pit

Swale

Wetland

Well-03 Well-04 Well-05 Well-06 Well-07 Well-08 Well-09 Well-11 Well-12 Well-13 GPMW-08 R-302 Well-02 Well-01 IMW/BR-14 IMW/BR-15 IMW/BR-16 IMW/BR-17

Former Building #15 Chemical Storage Shed
Former Chemcial Storage Shed
Former Guard House
Former Building #11 Chemical Lab
Former Building #13 Warehouse
Former Building #16 Process Building
Former Building #12 Subcoat Building
Former Tunnel
Former Building #8 Filter Building
Former Building #9
Former Building #10
Former Building #7 Coating Alley
Former Building #17 Dryer Addition
Passenger Hallway
Former Building #1 Research and Development
Former Building #2 Emulsion Building
Former Building #3 Garage
Former Building #4 Maintenance Shop
Former Building #5 Boiler House
Former Carpenter Shed
Former Building #6 Stationary Engineering

Driving Park Avenue

N
S
E
W

0 60
1 inch = 60 feet

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REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

REMEDIAL AREA OF CONCERN MAP AND GROUNDWATER SAMPLE RESULTS FROM THE DESIGN PHASE INVESTIGATION

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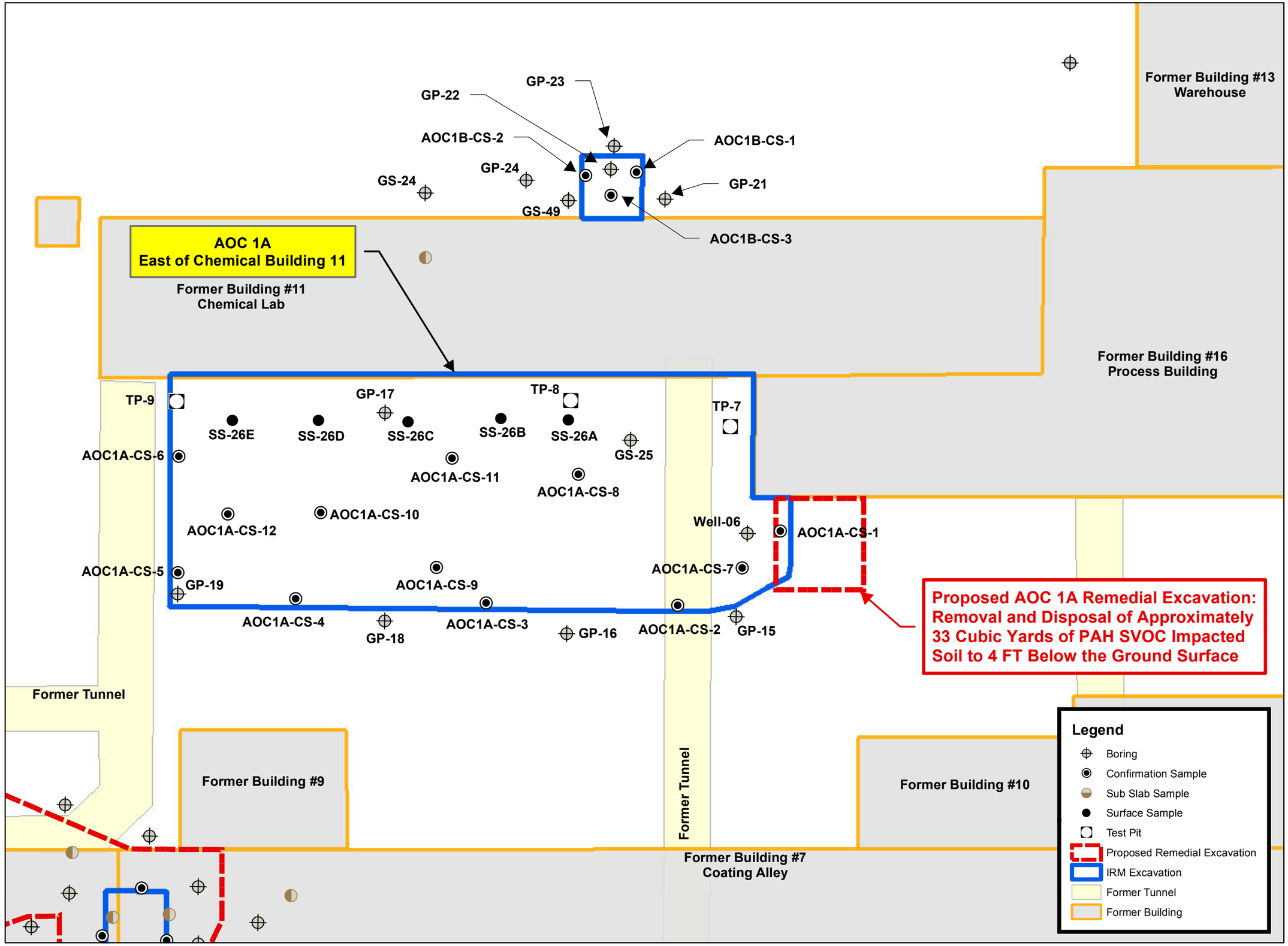
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FIGURE 3

Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure3_Well Map 11X17.mxd



Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure4_AOC 1 11x17.mxd

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REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

AREA OF CONCERN 1A:
PROPOSED REMEDIAL EXCAVATION

0 7.5 15

1 inch = 15 feet

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FIGURE 4

TANK #2
REMOVE AND DISPOSE OF ORIGINAL UNDERGROUND CONCRETE WATER SERVICE VAULT THAT IS FILLED WITH SOIL. VAULT ESTIMATED TO BE 20 FT BY 20 FT BY 8 FT DEEP.

DECOMMISSION ALL UNDERGROUND PIPES IN ACCORDANCE WITH WORK PLAN/SPECIFICATIONS

TANK #4
REMOVE AND DISPOSE OF 12,000 GALLON SILVER WASTEWATER CONCRETE VAULT UST. CONCRETE VAULT IS FILLED WITH WATER THAT IS A CHARACTERISITC HAZARDOUS WASTE FOR CADMIUM - D006.

TANK #3
REMOVE AND DISPOSE OF CONCRETE UNDERGROUND WATER SERVICE VAULT. VAULT FILLED WITH WATER. SIZE UNKNOWN.

TANK #1
REMOVE AND DISPOSE OF 5,000 GALLON METAL SILVER RECOVERY UST. SLUDGE AT BOTTOM OF TANK. TANK IS FILLED WITH WATER.

Area of Concern 2
Silver Recovery Wastewater System

TANK #2
TANK #4
TANK #3
TANK #1

2.14 GP-62
0.68 GP-63
0.46 GP-159
2.89 GP-64a
18.6 GP-72
ND GS-42
0.97 GP-08
1.16 GS-16
19.8 GP-71
0.62 GP-158
5.66 TP-03
2.04 TP-04
35 GP-06
1.55 GP-70
1.10 GP-157
0.38 GP-74
0.46 GP-73
5.37 GP-75
1.11 GP-12
0.14 GP-65
1.19 GP-69
0.30 XRF21 091610
ND TP-05
0.69 GS-15
720 Well-01
6320 GS-17
142 TP-02
0.88 GP-07
7.90
0.64 GP-66
TP-5
218 GP-04
0.39 GP-68
120 GP-76
3.81 GS-18
7.26 TP-01
1.24 GP-67
0.30 XRF20 091610
0.93 GP-156
0.99 GP-02
8.80 GP-160
GP-161
GP-167
GP-215
GP-213
GP-216
GP-217

7.5 PPM
100 PPM
1000 PPM

Former Buil

Note:

The NYSDEC Restricted Use Soil Cleanup Objective for the Protection of Groundwater for Cadmium is 7.5 ppm.

Cd Concentration in Soil (ppm)
Boring ID
(If Blank No Lab Data)
Boring ID

Legend

- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit

Underground Utilities

- electric
- gas
- silver recovery
- storm water
- sanitary
- water

Cadmium Concentrations in Soil

- 7.5 PPM
- 100 PPM
- 1000 PPM
- Underground Tank
- Former Building
- Former Tunnel

Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure5A_AOC 2 11x17.mxd

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REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

AREA OF CONCERN 2:
CADMIUM ISOPLETH CONTOURS AND LOCATION OF UNDERGROUND TANK AND VAULTS TARGETED FOR DECOMMISSIONING

W S N E

0 5 10
1 inch = 10 feet

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FIGURE 5A

ESTIMATED LIMITS OF EXCAVATION TO REMOVE UNDERGROUND STRUCTURES

PROPOSED AOC 2 REMEDIAL EXCAVATION: REMOVAL AND DISPOSAL OF APPROXIMATELY 700 CUBIC YARDS OF CADMIUM IMPACTED SOIL FROM THE GROUND SURFACE TO TOP OF BEDROCK LOCATED AT APPROXIMATELY 11 FT BGS.

Area of Concern 2
Silver Recovery Wastewater System

TANK #1
TANK #2
TANK #3
TANK #4

2.14 GP-62
0.38 GP-74
0.46 GP-73
1.11 GP-12
5.37 GP-75
0.68 GP-63
0.46 GP-159
2.89 GP-64a
18.6 GP-72
ND GS-42
0.97 GP-08
19.8 GP-71
0.62 GP-158
5.66 TP-03
2.04 TP-04
1.16 GS-16
35 GP-06
1.55 GP-70
1.10 GP-157
GP-77
0.14 GP-65
1.19 GP-69
0.29 XRF10 091710
0.30 XRF21 091610
142 TP-02
ND TP-05
0.68 GS-15
720 Well-01
6320 GS-17
0.88 GP-07
7.90
0.64 GP-66
TP-5
3.81 GS-18
218 GP-04
0.39 GP-68
120 GP-76
7.26 TP-01
1.24 GP-67
0.30 XRF20 091610
0.93 GP-156
0.99 GP-02
8.30 GP-160
GP-161
GP-167
GP-186

7.5 PPM
100 PPM
1000 PPM

Former Buil

Note:

The NYSDEC Restricted Use Soil Cleanup Objective for the Protection of Groundwater for Cadmium is 7.5 ppm.

Cd Concentration in Soil (ppm)
Boring ID
(If Blank No Lab Data)
Boring ID

Legend

- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit

Cadmium Concentrations in Soil

- 7.5 PPM
- 100 PPM
- 1000 PPM
- Estimated Tank Excavation
- Proposed Remedial Excavation
- Underground Tank
- Former Building
- Former Tunnel

Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure5B_ AOC 2 11x17.mxd

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AREA OF CONCERN 2:
PROPOSED LIMIT OF REMEDIAL EXACAVATION

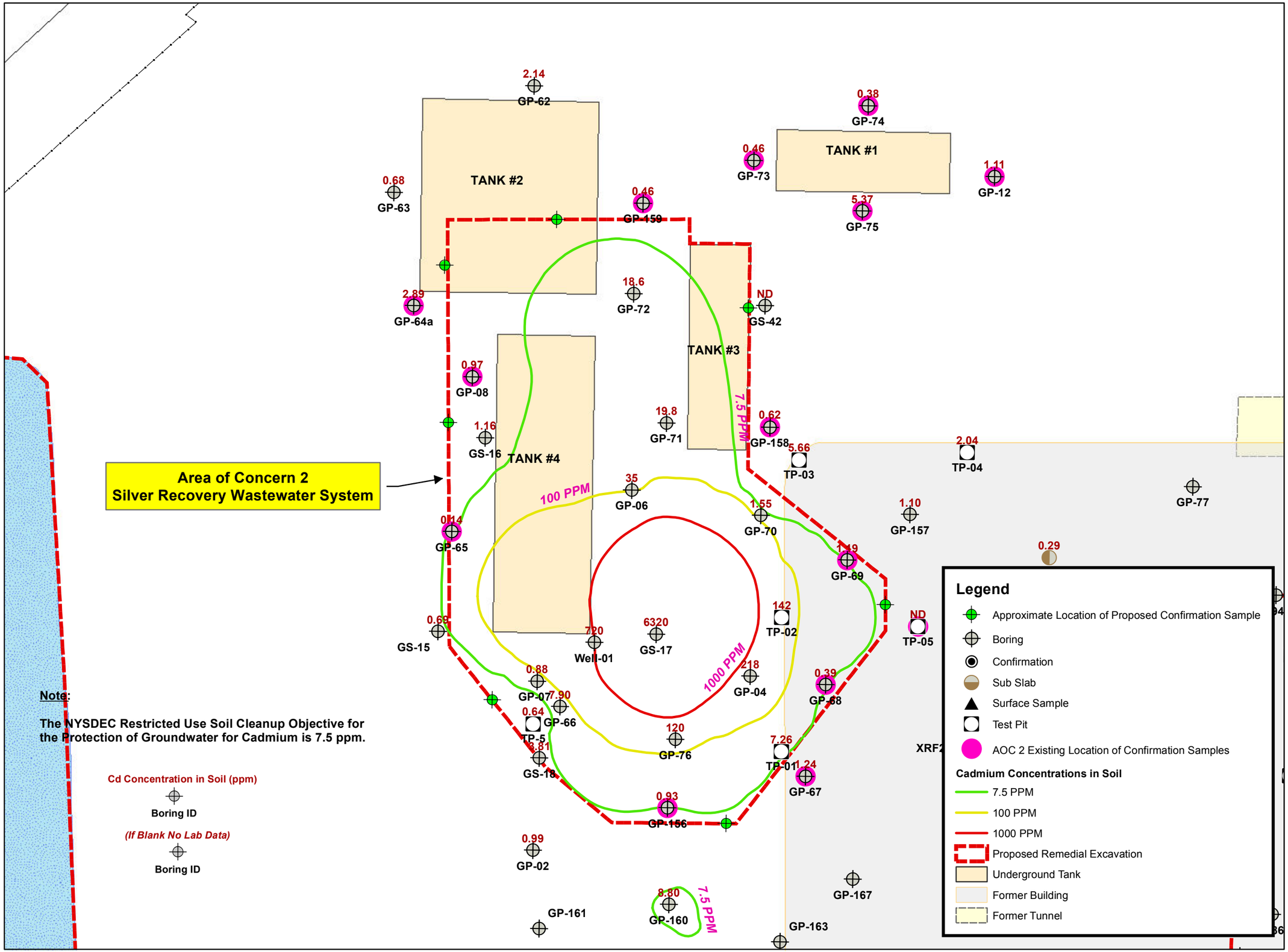
W S N E

0 5 10
1 inch = 10 feet

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FIGURE 5B



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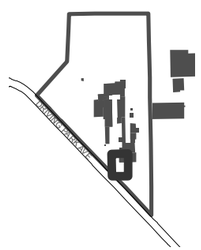
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WORK PLAN NO. 6

AREA OF CONCERN 2:
PROPOSED LIMIT OF REMEDIAL EXCAVATION AND CONCEPTUAL CONFIRMATION SAMPLING PLAN

W
S
N
E
0 5 10
1 inch = 10 feet

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FIGURE 5C

Area of Concern 2
Silver Recovery Wastewater System

PROPOSED AOC 2 REMEDIAL EXCAVATION: REMOVAL AND DISPOSAL OF APPROXIMATELY 700 CUBIC OF CADMIU, IMPACTED SOIL FROM THE SURFACE TO TOP OF BEDROCK AT APPROXIMATELY 11 FT BGS.

GPMW-08
RCRA Metals
Arsenic 10 U ppb
Barium 239 ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 3.02 J ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb
SVOCs
No Exceedances
VOCs
No Exceedances

APPLY A 1,300 POUND SLURRY OF IN-SITU METAL IMMOBILIZATION COMPOUND DARAMEND®-M TO BOTTOM OF RIPPED ROCK EXCAVATION.

Well-11
RCRA Metals
Arsenic 10 U ppb
Barium 105 ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 5.46 J ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb
SVOCs
No Exceedances
VOCs
No Exceedances

PROPOSED AOC 2 RIPPED ROCK AREA: REMOVAL AND DISPOSAL OF APPROXIMATELY 120 CUBIC YARDS OF THE TOP 3 FT OF BEDROCK

Well-01
RCRA Metals
Arsenic 10 U ppb
Barium 60.8 ppb
Cadmium 8.45 ppb
Chromium 5 U ppb
Lead 3.44 J ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 7.83 ppb
SVOCs
No Exceedances
VOCs
No Exceedances

Well-13
RCRA Metals
Arsenic 10 U ppb
Barium 88.9 ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 6 U ppb
Mercury 0.2 U ppb
Selenium 5.46 J ppb
Silver 5 U ppb
SVOCs
No Exceedances
VOCs
No Exceedances

IMW-14
RCRA Metals
Arsenic 4.24 J ppb
Barium 38.4 J ppb
Cadmium 1.53 J ppb
Chromium 5 U ppb
Lead 6 UN ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb

BR-14
RCRA Metals
Arsenic 10 J ppb
Barium 22.2 J ppb
Cadmium 3 U ppb
Chromium 5 U ppb
Lead 3.04 J ppb
Mercury 0.2 U ppb
Selenium 10 U ppb
Silver 5 U ppb

TANK #1
TANK #2
TANK #3
TANK #4
GPMW-08
Well-11
Well-13
Well-01
IMW/BR-14
7.5 PPM
100 PPM
1000 PPM
7.5 PPM
Former Bu

Legend
- Proposed Extraction Point
- Decommissioned
- Destroyed
- Missing
- In-Use

Cadmium Concentrations in Soil
- 7.5 PPM
- 100 PPM
- 1000 PPM
- Proposed Ripped Rock Area
- Proposed Remedial Excavation
- Underground Tank
- Former Building
- Former Tunnel

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REMEDIAL ACTION WORK PLAN
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AREA OF CONCERN 2:
PROPOSED LIMIT OF REMEDIAL RIPPED ROCK EXCAVATION AND AREA OF DARAMEND®-M APPLICATION

N
S
E
W

0 5 10
1 inch = 10 feet

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FIGURE 5D

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Former Building #10

Former Building #17
Dryer Addition

Passenger Hallway

Former Building #7
Coating Alley

AOC 3A
Former Retention Pond and Burn Pit

Former Carpenter Shed

GP-124 GP-125 GP-126 GP-127 GP-128

GS-34 GS-33

GP-201 ND GP-155 GP-177 GP-178 GP-179 GP-152 ND

GP-176

GP-117 GP-116 GP-175 ND

GP-174 4.31 GP-139 GP-144 GP-145

GS-04

T3

GP-118 GP-181 GP-121 GS-07 ND GP-135 GP-140 4.71 GS-02 GP-149 ND GP-150 ND

GS-50

GP-122

GS-01

GP-119

T1 T2

GP-172 50 PPM GP-200 44 GP-138 GP-143 GP-146 0.11

GP-180 0.93 GP-171 ND

Well-08

IMW/BR-17

GP-120

100 PPM

XRF15 101010 GP-123 GP-134 123 GP-136 GP-141 GP-148 ND GS-05

Well-07

GS-03

GP-173 GP-207

GP-169

GP-170

GP-212 ND GP-202 GP-208 1.72

GP-137 GP-142 0.14 GP-147 ND

GS-06

GP-204

9.3 PPM

GP-205

GP-211 ND GP-210 0.76 GP-203 ND GP-206

GP-209 4.26

GS-47 GS-39 GS-46

PROPOSED AOC 3A REMEDIAL EXCAVATION FROM 0 TO 3 FT BGS: REMOVAL AND DISPOSAL OF APPROXIMATELY 1,450 CUBIC YARDS OF CADMIUM IMPACTED SOIL

Legend

- Well
- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit

AOC 3A Cadmium Concentrations in Soil at 1 FT BGS

- 9.3 PPM
- 50 PPM
- 100 PPM
- Proposed Remedial Excavation
- 1975 Aerial Photo Disturbance Area
- Former Building
- Parcel

NOTE:

NYSDEC Restricted Use Soil Cleanup Objective at a Commercial Site for Cadmium is 9.3 mg/kg

Cd Concentrations (ppm)
Boring ID

(If Blank No Lab Data)
Boring ID

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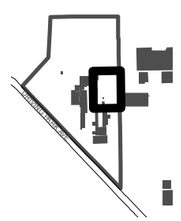
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WORK PLAN NO. 6

AREA OF CONCERN 3A:
PROPOSED REMEDIAL EXCAVATION AND CADMIUM CONCENTRATIONS AT 1 FT BELOW THE GROUND SURFACE

W S N E

0 20
1 inch = 20 feet

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FIGURE 6A

Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure6A AOC 3A Cadmium 11x17.mxd

Former Building #10

Former Building #17
Dryer Addition

Passenger Hallway

Former Building #7
Coating Alley

AOC 3A
Former Retention Pond and Burn Pit

PROPOSED AOC 3A REMEDIAL EXCAVATION FROM 3 TO 5 FT BGS: REMOVAL AND DISPOSAL OF APPROXIMATELY 325 CUBIC YARDS OF CADMIUM AND SILVER IMPACTED SOIL

Former Carpenter Shed

9.3 PPM

GP-124 GP-125 GP-126 GP-127 GP-128

GS-34 GS-33

GP-201 GP-155 ND GP-177 ND GP-178 ND GP-179 ND GP-152

GP-176 4.95

GP-117 ND GP-116 GP-175 ND

GP-174 ND GP-139 ND 5.72 GP-144 GP-145 ND

GS-04

GP-118 GP-181 0.22 GP-121 0.3 T3 GS-07 ND GP-135 ND GP-140 GS-02 GP-149 GP-150

GS-50 ND GP-119 GP-122

T1 T2 GP-172 ND GP-171 ND GP-138 ND GP-143 GP-146 1.29

GP-180 GP-200 Well-08

GP-120 IMW/BR-17

XRF15 101010 GP-123 GP-134 GP-136 ND GP-141 10.9 Well-07 GS-03 GP-148 GS-05

GP-173 ND GP-169 ND GP-207

GP-170 3.24

GP-212 0.783 GP-202 1.35 GP-137 9.92 GP-142 GP-147 GP-208

GS-06

GP-204 GP-205

GP-211 0.719 GP-210 1.12 GP-203 GP-209 12.5 GP-206

GS-47 GS-39 GS-46

Legend

- Well
- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit
- AOC 3A Cadmium Concentrations in Soil at 3 FT
- 1975 Aerial Photo Disturbance Area
- 1961 Disturbance Area
- Proposed Remedial Excavation From 0 to 3 FT BGS
- Proposed Remedial Excavation From 3 to 5 FT BGS
- Former Building
- Parcel

NOTE:

NYSDEC Restricted Use Soil Cleanup Objective at a Commercial Site for Cadmium is 9.3 mg/kg

Boring ID — Cd Concentrations (ppm)

Boring ID — (If Blank No Lab Data)

Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure6B AOC 3A Cadmium 11x17.mxd

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WORK PLAN NO. 6

AREA OF CONCERN 3A:
PROPOSED REMEDIAL EXCAVATIONS AND CADMIUM CONCENTRATIONS AT 3 FT BELOW THE GROUND SURFACE

W S N E

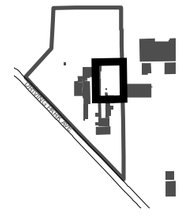
0 20

1 inch = 20 feet

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FIGURE 6B

Former Building #10

Former Building #17
Dryer Addition

Passenger Hallway

Former Building #7
Coating Alley

AOC 3A
Former Retention Pond and Burn Pit

POSED AOC 3A REMEDIAL EXCAVATION FROM 5 TO 7 FT BGS: AL AND DISPOSAL OF APPROXIMATELY CUBIC YARDS OF SILVER AND CADMIUM IMPACTED SOIL

PROPOSED AOC 3A REMEDIAL EXCAVATION FROM 3 TO 5 FT BGS: REMOVAL AND DISPOSAL OF APPROXIMATELY 325 CUBIC YARDS OF CADMIUM IMPACTED SOIL

PROPOSED AOC 3A REMEDIAL EXCAVATION FROM 0 TO 3 FT BGS: REMOVAL AND DISPOSAL OF APPROXIMATELY 1,450 CUBIC YARDS OF CADMIUM IMPACTED SOIL

Former Carpenter Shed

GP-124 GP-125 GP-126 GP-127 GP-128

GS-34 ND GS-33

GP-201 ND GP-177 GP-178 GP-155 GP-179 GP-152 ND

GP-176 GP-174 GP-139 ND GP-144 ND GP-145

GP-117 GP-116 GP-175

GS-04

GP-118 GP-181 GP-121 T3 GS-07 GS-50 GP-119 GP-122 0.78 T1 T2 GP-172 ND GP-171 GP-180 GP-120 XRF15 101010 GP-123 ND GP-134 ND GP-173

GP-135 GP-140 GS-01 GP-138 GP-143 GS-02 GP-149 ND GP-150 ND GP-146 ND

Well-08 0.19 GP-200 ND IMW/BR-17 GP-136 GP-141 ND Well-07 GS-03 GP-148 ND GS-05 ND GP-207

GP-169 ND GP-170

9.3 PPM 8.08

GP-212 ND GP-202 ND GP-137 GP-142 ND GP-147 ND GP-208 ND

GS-06 GP-204 ND GP-205 ND

GP-211 ND GP-210 ND GP-203 ND GP-209 ND GP-206 ND

GS-47 GS-39 GS-46

NOTE:

NYSDEC Restricted Use Soil Cleanup Objective at a Commercial Site for Cadmium is 9.3 mg/kg

Boring ID — Cd Concentrations (ppm)

Boring ID — (If Blank No Lab Data)

Legend

- Well
- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit
- AOCA Existing Location of Confirmation Sample
- 1975 Aerial Photo Disturbance Area
- 1961 Disturbance Area
- Proposed Remedial Excavation From 0 to 3 FT BGS
- Proposed Remedial Excavation From 3 to 5 FT BGS
- Former Building
- Parcel

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AREA OF CONCERN 3A:
CADMIUM CONCENTRATIONS AT 5 FT BELOW THE GROUND SURFACE AND CONCEPTUAL CONFIRMATION SAMPLING PLAN

W S N E

0 20

1 inch = 20 feet

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FIGURE 6C

Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure6C AOC 3A Cadmium 11x17.mxd

Note:

NYSDEC Restricted Use Soil Cleanup Objecive at a Commercial Site for Arsenic is 16 mg/kg

PROPOSED AOC 4B REMEDIAL EXCAVATION: REMOVAL AND DISPOSAL OF APPROXIMATELY 11 CUBIC YARDS OF ARSENIC IMPACTED SOIL FROM 0 TO 3 FT BELOW THE GROUND SURFACE

AOC 4B
Former Chemical Storage Sheds

GP-25
GP-47
GP-49
GP-50
SS-08
GP-51
GP-52
Former Building #15
Chemical Storage Shed
GP-32
SS-10C
SS-10A
GP-42
SS-09A
SS-09C
GP-130
GS-10
Former Chemcial Storage Shed
SS-10D
GS-09
GP-131
GP-132
Well-04
SS-10B
SS-09D
SS-09B
Former Building #13
Warehouse
Former Building #12
Subcoat Building
GS-43

Legend

- Proposed Remedial Excavation
- Well
- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit
- Tanks/Exterior Pits
- Parcel

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AREAS OF CONCERN 4B:
PROPOSED REMEDIAL EXCAVATION

N
S
E
W

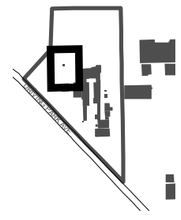
0 20

1 inch = 20 feet

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FIGURE 7

Y:\Rocheter, City\209288 PHOTECH\Dawings\RAWP July 2011\Figure7 AOC 4B 11x17.mxd

Area of Concern 7
Buildings 2 and 7 Waste Water

Former Tunnel

Former Building #1

Former Building #2

Former Building #3

Former Building #4

Former Building #7

Former Building #8

Legend

- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit

Cadmium Concentrations in Soil

- 9.3 PPM
- 100 PPM
- 1000 PPM
- Sump
- IRM Excavation
- Former Building
- Former Subgrade Tunnel

GP-77 0.59
GP-78 0.49
TP-07 10.1
XRF10 091710 289
XRF5 091710 0.346
GP-194 0.16
TP-08 ND
TP-09 116
XRF6 091710 0.17
B2 IRM/CSWSW-1 2.78
XRF2 091510 11900
XRF10 091510 ND
GP-193 ND
GP-79 3.55
XRF6 091510 157
GP-80 59.6
GP-192 12.8
GP-82 4.2
GP-191 445
GP-81 6.79
GP-56 47.5
XRF19 091310 168
GP-83 0.25
100 PPM
1000 PPM
IMW/BR-15
B2 IRM/CSSSW-1 0.22
B2 IRM/CSNSW-1 0.45
XRF15 091410 125
GP-189 64.2
GP-190 ND
B7 IRM/CSWSW-1 0.470
GP-84 6.28
XRF8 091110 ND
TP-11 0.06
XRF8 091410 311
GP-188 ND
GP-87 0.43
GP-88 0.31
B7 IRM/CSSSW-1 40
XRF22 091310 0.729
B7 IRM/CSNSW-1 114
XRF12 091110 139
IMW/BR-16
GP-85 0.24
GP-57 0.11
B7 IRM/CSESW-1 38.7
GP-86 4.55
B2 IRM/CSESW-1 4317
XRF6 091410 1040
GP-89 3.29
GP-90 0.44
GP-96 0.34
9.3 PPM
GP-186 279
GP-187 ND
XRF46 091410 0.267
GP-55 0.26
GP-54 0.09
GP-199 2.54
GP-95 0.49
XRF21 091410 121
GP-185 403
GP-198 0.3
GP-183 95.8
TP-19 247
TP-16 ND
GP-91 16.3
GP-195 0.08
GP-184 296
GP-197 1.1
GP-94 1.56
GP-182 3.56
GP-92 0.44
GP-196 0.16
TP-18 13.3
XRF13 091710 0.480
XRF14 091710
GP-93 2.05
XRF20 091010
XRF44 091410 1.870

Note:

The NYSDEC Part 375-6.8(b) Restricted Use Soil Cleanup Objective for Cadmium at a Commercial Site is 9.3 mg/kg,

Cd Concentration (mg/kg)

Exploration ID

(If Blank No Lab Data)

Exploration ID

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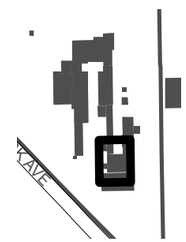
REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

AREA OF CONCERN 7:
AREA OF CADMIUM IMPACTS
TO SOIL AND WASTEWATER
DISCHARGE LOCATIONS (SUMPS)

W
S N
m

0 10
1 inch = 10 feet

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Drawn By: MFP



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FIGURE 8A

Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure8A_AOC 7 11x17.mxd

Area of Concern 7
Buildings 2 and 7 Waste Water

Former Tunnel

Former Building #1

Former Building #2

Former Building #3

Former Building #4

Former Building #7

0.59 GP-77

10.1 TP-07

0.49 GP-78

289 XRF10 091710

0.346 XRF5 091710

0.16 GP-194

ND TP-08

2.78 B2 IRM/CSWSW-1

116 TP-09

11900 XRF2 091510

0.17 XRF6 091710

0.22 B2 IRM/CSSSW-1

0.45 B2 IRM/CSNSW-1

IMW/BR-15

1000 PPM

0.06 TP-11

311 XRF8 091410

4317 B2 IRM/CSESW-1

1040 XRF6 091410

0.34 GP-96

279 GP-186

2.54 GP-199

0.49 GP-95

0.3 GP-198

95.8 GP-183

247 TP-19

ND TP-16

1.1 GP-197

1.56 GP-94

3.56 GP-182

13.3 TP-18

9.3 PPM

0.480 XRF13 091710

XRF14 091710

2.05 GP-93

ND GP-193

ND XRF10 091510

3.55 GP-79

59.6 GP-80

157 XRF6 091510

12.8 GP-192

445 GP-191

6.79 GP-81

47.5 GP-56

125 XRF15 091410

100 PPM

64.2 GP-189

ND GP-188

0.31 GP-88

3.29 GP-89

0.44 GP-90

ND GP-187

0.267 XRF46 091410

121 XRF21 091410

403 GP-185

16.3 GP-91

0.08 GP-195

236 GP-184

0.44 GP-92

0.16 GP-196

4.2 GP-82

400 PPM

168 XRF19 091310

0.25 GP-83

ND GP-190

0.43 GP-87

0.470 B7 IRM/CSWSW-1

0.729 40 XRF22 091310 B7 IRM/CSSSW-1

39 XRF12 091110

IMW/BR-16

114 B7 IRM/CSNSW-1

38.7 B7 IRM/CSESW-1

6.28 GP-84

0.24 GP-85

4.55 GP-86

0.09 GP-54

0.26 GP-55

ND XRF8 091110

0.11 GP-57

0.126 XRF20 091010

1.870 XRF44 091410

PROPOSED LOCATION TO SEPARATE REMEDIAL EXCAVATION

PROPOSED AOC 7 REMEDIAL EXCAVATION: REMOVAL AND DISPOSAL OF APPROXIMATELY 370 CUBIC YARDS OF CADMIUM IMPACTED SOIL LOCATED IN THE LAST 2 FT OF OVERBURDEN SOILS DIRECTLY ABOVE BEDORCK. AN ESTIMATED 7 FT THICK LAYER OR APPROXIMATELY 870 CUBIC YARDS OF CLEAN OVERBURDEN SOIL WILL REQUIRE REMOVAL TO ACCESS THE CADMIUM IMPACTED SOIL.

Note:

The NYSDEC Part 375-6.8(b) Restricted Use Soil Cleanup Objective for Cadmium at a Commercial Site is 9.3 mg/kg,

Cd Concentration (mg/kg)

Exploration ID

(If Blank No Lab Data)

Exploration ID

Legend

- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit

Cadmium Concentrations in Soil

- 9.3 PPM
- 100 PPM
- 1000 PPM
- Proposed Remedial Excavation
- Sump
- IRM Excavation
- Former Building
- Former Tunnel

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REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

AREA OF CONCERN 7:
AREA OF CADMIUM IMPACTS
AND PROPOSED REMEDIAL
EXCAVATION

W S N

0 10

1 inch = 10 feet

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FIGURE 8B

Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure8B_ AOC 7 11x17.mxd

Former Tunnel

Area of Concern 7
Buildings 2 and 7 Waste Water

PROPOSED AOC 7 RIPPED ROCK AREA: REMOVAL AND DISPOSAL OF APPROXIMATELY 70 CUBIC YARDS OF THE TOP 3 FT OF BEDROCK

IMW-15
RCRA Metals

Arsenic	4.56 J ppb
Barium	19.9 J ppb
Cadmium	2.12 J ppb
Chromium	1.74 J ppb
Lead	2.6 U ppb
Mercury	0.09 U ppb
Selenium	4.8 U ppb
Silver	1.5 U ppb

BR-15
RCRA Metals

Arsenic	10 J ppb
Barium	13.1 J ppb
Cadmium	3 U ppb
Chromium	5 U ppb
Lead	5.54 J ppb
Mercury	0.2 U ppb
Selenium	5.27 J ppb
Silver	5 U ppb

9.3 PPM
1000 PPM
100 PPM
IMW/BR-15
100 PPM
9.3 PPM
1000 PPM
9.3 PPM

Former Building #8
Former Building #7
Former Building #1
Former Building #2
Former Building #3
Former Building #4

IMW/BR-16

APPLY A 750 POUND SLURRY OF IN-SITU METAL IMMOBILIZATION COMPOUND DARAMEND®-M TO BOTTOM OF RIPPED ROCK EXCAVATION.

APPLY A 350 POUND SLURRY OF IN-SITU METAL IMMOBILIZATION COMPOUND DARAMEND®-M TO BOTTOM OF RIPPED ROCK EXCAVATION.

PROPOSED AOC 7 REMEDIAL EXCAVATION: REMOVAL AND DISPOSAL OF APPROXIMATELY 370 CUBIC YARDS OF CADMIUM IMPACTED SOIL LOCATED IN THE LAST 2 FT OF OVERBURDEN SOILS DIRECTLY ABOVE BEDORCK. AN ESTIMATED 7 FT THICK LAYER OR APPROXIMATELY 870 CUBIC YARDS OF CLEAN OVERBURDEN SOIL WILL REQUIRE REMOVAL TO ACCESS THE CADMIUM IMPACTED SOIL.

IMW-16
Metals

Cadmium	3 U ppb
Silver	5 U ppb

BR-16
RCRA Metals

Arsenic	10 J ppb
Barium	261 J ppb
Cadmium	3 J ppb
Chromium	1.21 U ppb
Lead	17 ppb
Mercury	0.2 U ppb
Selenium	10 U ppb
Silver	5 U ppb

PROPOSED AOC 7 RIPPED ROCK AREA: REMOVAL AND DISPOSAL OF APPROXIMATELY 30 CUBIC YARDS OF THE TOP 3 FT OF BEDROCK

Note:

The NYSDEC Part 375-6.8(b) Restricted Use Soil Cleanup Objective for Cadmium at a Commercial Site is 9.3 mg/kg,

Legend

- Decommissioned
- Destroyed
- Missing
- In-Use

Cadmium Concentrations in Soil

- 9.3 PPM
- 100 PPM
- 1000 PPM
- Proposed Ripped Rock Area
- Proposed Remedial Excavation
- Sump
- Former Building
- Former Tunnel

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REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

AREA OF CONCERN 7:
PROPOSED LIMIT OF REMEDIAL RIPPED ROCK EXCAVATION AND AREA OF DARAMEND®-M APPLICATION

W S N
m

0 10
1 inch = 10 feet

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FIGURE 8C

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Area of Concern 7
Buildings 2 and 7 Waste Water

Former Tunnel

PROPOSED LOCATION TO SEPARATE REMEDIAL EXCAVATION

Former Building #1
Former Building #2
Former Building #3
Former Building #7
Former Building #8
Former Building #9

GP-77 0.59
GP-78 0.49
TP-07 10.1
GP-193 ND
GP-192 12.8
GP-82 4.2
GP-83 0.25
XRF10 091710 289
XRF5 091710 0.346
GP-194 0.16
XRF10 091510 ND
GP-79 3.55
GP-80 59.6
GP-191 445
GP-81 6.79
XRF19 091310 168
TP-08 ND
B2 IRM/CSWSW-1 2.78
XRF6 091510 157
TP-09 116
XRF2 091510 11900
XRF6 091710 0.17
GP-56 47.5
IMW/BR-15
B2 IRM/CSSSW-1 0.22
B2 IRM/CSNSW-1 0.45
XRF15 091410 125
GP-189 64.2
GP-190 ND
B7 IRM/CSWSW-1 0.470
GP-84 6.28
XRF8 091110 ND
XRF22 091310 0.729
B7 IRM/CSSSW-1 40
IMW/BR-16
XRF12 091110 139
GP-57 0.11
TP-11 0.06
XRF8 091410 311
GP-87 0.43
GP-188 ND
GP-88 0.31
B7 IRM/CSNSW-1 114
GP-85 0.24
B7 IRM/CSESW-1 38.7
B2 IRM/CSESW-1 4317
GP-89 3.29
GP-86 4.55
XRF6 091410 1040
GP-96 0.34
GP-90 0.44
GP-54 0.09
GP-186 279
GP-187 ND
GP-55 0.26
XRF46 091410 0.267
GP-199 2.54
GP-95 0.49
XRF21 091410 121
GP-185 403
GP-198 0.3
GP-183 95.8
TP-19 247
GP-195 0.08
GP-91 16.3
TP-16 ND
GP-184 2.36
GP-197 1.1
GP-94 1.56
GP-182 3.56
GP-92 0.44
GP-196 0.16
TP-18 13.3
XRF13 091710 0.480
XRF14 091710
GP-93 2.05
XRF44 091410 1.870

9.3 PPM
100 PPM
1000 PPM
400 PPM

Note:

The NYSDEC Part 375-6.8(b) Restricted Use Soil Cleanup Objective for Cadmium at a Commercial Site is 9.3 mg/kg,

Cd Concentration (mg/kg)

Exploration ID

(If Blank No Lab Data)

Exploration ID

Legend

- Approximate Location of Proposed Confirmation Sample
- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit
- Existing Location of Confirmation Sample

Cadmium Concentrations in Soil

- 9.3 PPM
- 100 PPM
- 1000 PPM
- Proposed Remedial Excavation
- Former Building
- Former Tunnel

Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure8D_ AOC 7 11x17.mxd

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REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

AREA OF CONCERN 7:
PROPOSED REMEDIAL EXCAVATION
CONCEPTUAL CONFIRMATION
SAMPLING PLAN

W S N m

0 10
1 inch = 10 feet

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FIGURE 8D

DRIVING PARK AVENUE

Area of Concern 2
Silver Recovery Wastewater System

Area of Concern 13
South Drainage Swale

PROPOSED AOC 13 REMEDIAL EXCAVATION:
REMOVAL AND DISPOSAL OF APPROXIMATELY
270 CUBIC YARDS OF CADMIUM IMPACTED SOIL
TO 4 FT BELOW THE TOP OF THE SWALE.

Former Building #1

GP-63 GP-159 GP-73 GP-12 GP-75 GP-72 GP-64a GS-42 GP-08 GS-16 GP-71 GP-158 TP-03 TP-04 GP-77 GP-06 GP-70 GP-157 GP-65 Well-11 Well-13 GP-69 XRF10 091710 XRF21 091610 XRF5 091710 GS-15 GS-17 TP-02 TP-05 Well-01 XRF6 091710 GP-07 IMW/BR-14 GP-68 GP-66 GP-04 TP-5 GP-76 XRF20 091610 TP-01 GS-18 GP-67 GP-156 GP-02 GP-167 GP-160 GP-161 GP-163 GP-199 GP-165 GP-168 GP-166 GP-198 GP-183 TP-16 GP-165 GP-164 XRF22 091610 GP-197 GP-94 XRF23 091610 TP-13 XRF13 091710 XRF14 091710 GS-19 GP-215 GP-213 GP-216 GP-217 GP-214 GP-218 GS-37 GP-219 S-20

Legend

- Boring
- Confirmation
- Sub Slab
- Surface Sample
- Test Pit
- Proposed Remedial Excavation
- Former Building
- Tanks/Exterior Pits
- Former Subgrade Tunnel
- Swale

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REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

AREA OF CONCERN 13:
PROPOSED REMEDIAL
EXCAVATION

N W S E

0 10 20

1 inch = 20 feet

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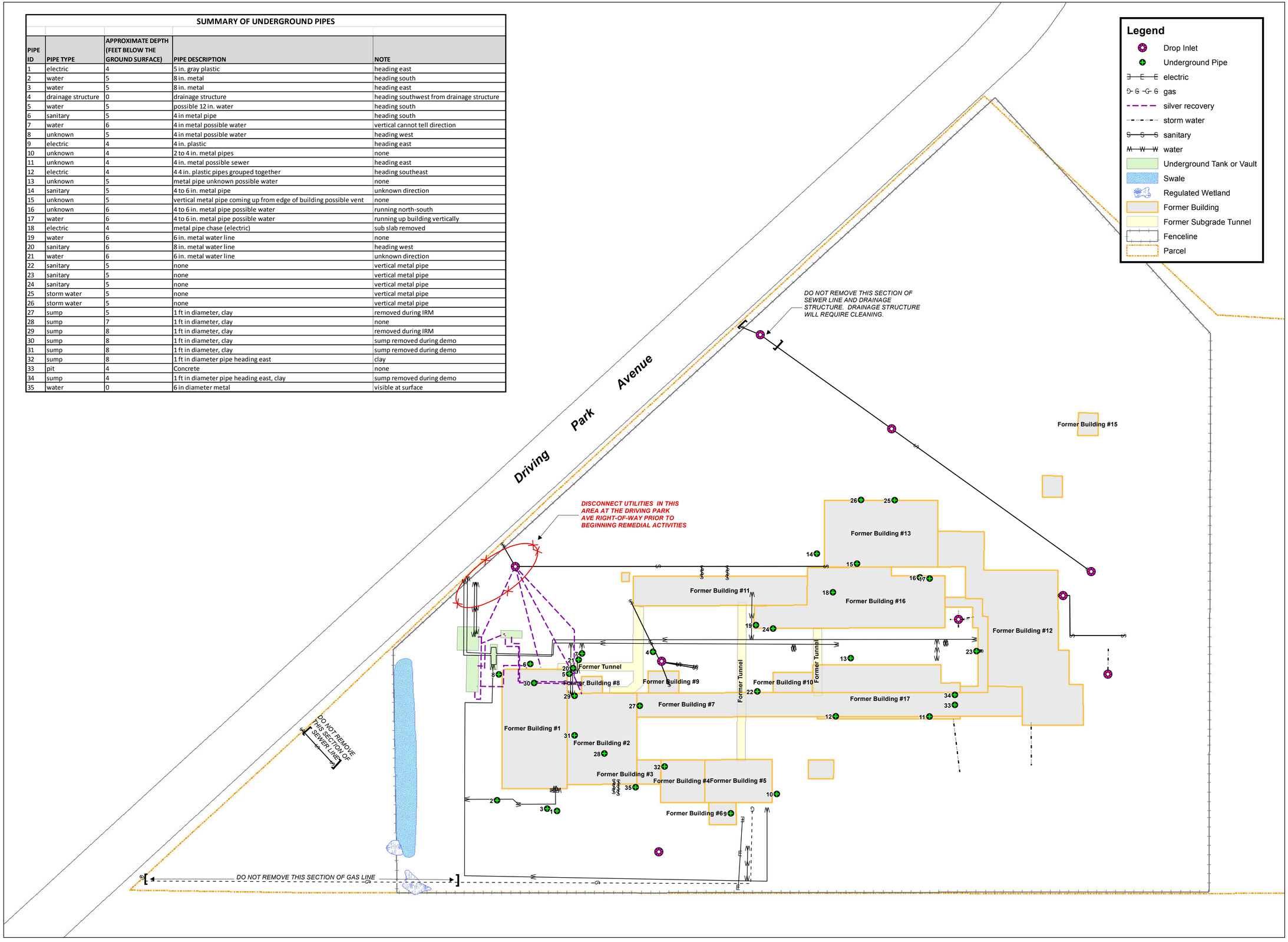
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FIGURE 9

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SUMMARY OF UNDERGROUND PIPES

PIPE ID	PIPE TYPE	APPROXIMATE DEPTH (FEET BELOW THE GROUND SURFACE)	PIPE DESCRIPTION	NOTE
1	electric	4	5 in. gray plastic	heading east
2	water	5	8 in. metal	heading south
3	water	5	8 in. metal	heading east
4	drainage structure	0	drainage structure	heading southwest from drainage structure
5	water	5	possible 12 in. water	heading south
6	sanitary	5	4 in metal pipe	heading south
7	water	6	4 in metal possible water	vertical cannot tell direction
8	unknown	5	4 in metal possible water	heading west
9	electric	4	4 in. plastic	heading east
10	unknown	4	2 to 4 in. metal pipes	none
11	unknown	4	4 in. metal possible sewer	heading east
12	electric	4	4 4 in. plastic pipes grouped together	heading southeast
13	unknown	5	metal pipe unknown possible water	none
14	sanitary	5	4 to 6 in. metal pipe	unknown direction
15	unknown	5	vertical metal pipe coming up from edge of building possible vent	none
16	unknown	6	4 to 6 in. metal pipe possible water	running north-south
17	water	6	4 to 6 in. metal pipe possible water	running up building vertically
18	electric	4	metal pipe chase (electric)	sub slab removed
19	water	6	6 in. metal water line	none
20	sanitary	6	8 in. metal water line	heading west
21	water	6	6 in. metal water line	unknown direction
22	sanitary	5	none	vertical metal pipe
23	sanitary	5	none	vertical metal pipe
24	sanitary	5	none	vertical metal pipe
25	storm water	5	none	vertical metal pipe
26	storm water	5	none	vertical metal pipe
27	sump	5	1 ft in diameter, clay	removed during IRM
28	sump	7	1 ft in diameter, clay	none
29	sump	8	1 ft in diameter, clay	removed during IRM
30	sump	8	1 ft in diameter, clay	sump removed during demo
31	sump	8	1 ft in diameter, clay	sump removed during demo
32	sump	8	1 ft in diameter pipe heading east	clay
33	pit	4	Concrete	none
34	sump	4	1 ft in diameter pipe heading east, clay	sump removed during demo
35	water	0	6 in diameter metal	visible at surface



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REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

UNDERGROUND PIPE DECOMMISSIONING PLAN

0 40

1 inch = 40 feet

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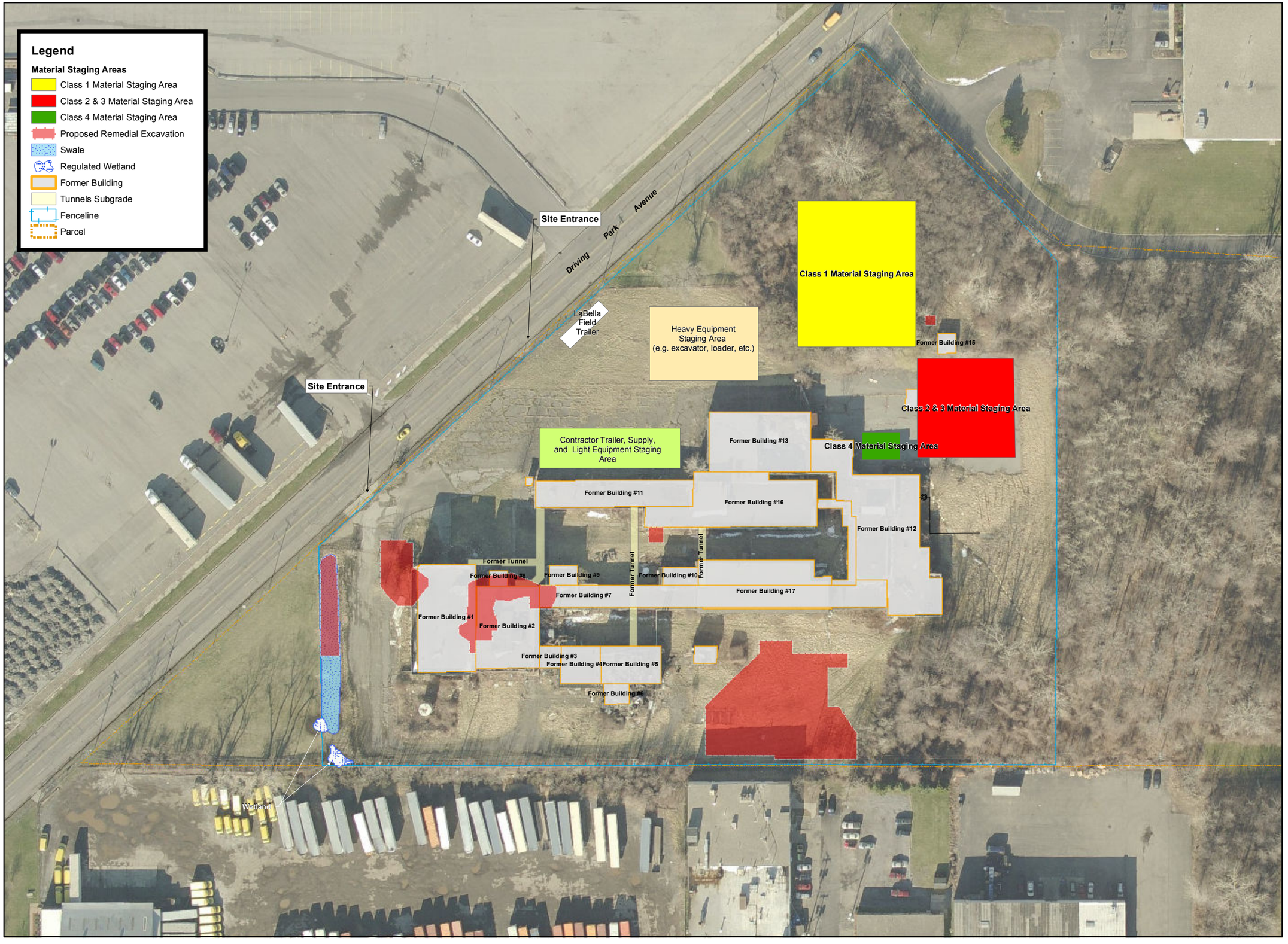
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FIGURE 10

Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP- July 2011\Figure10_Pipe Removal D size.mxd



Y:\Rochester, City\209288 PHOTECH\Drawings\RAWP July 2011\Figure11_Staging Areas 11X17.mxd

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REMEDIAL ACTION WORK PLAN
WORK PLAN NO. 6

MATERIAL STAGING AREAS

N
W
E
S

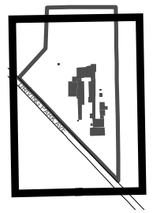
0 45 90

1 inch = 90 feet

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FIGURE 11

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Appendix 1

AOC 2 Waste Characterization Laboratory Reports

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LaBella Associates P.C.	Date Collected:	07/17/11
Project:	Former Photech Imaging Site	Date Received:	07/20/11
Client Sample ID:	SLC SILVERRECOVERYTANK~~IONIC~~WATER MFP	SDG No.:	C3070
Lab Sample ID:	C3070-01	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	10	U	1	4.2	10	ug/L	07/20/11	07/20/11	SW6010B
7440-39-3	Barium	27.4	J	1	4	50	ug/L	07/20/11	07/20/11	SW6010B
7440-43-9	Cadmium	661		1	0.5	3	ug/L	07/20/11	07/20/11	SW6010B
7440-47-3	Chromium	4.21	J	1	1.1	5	ug/L	07/20/11	07/20/11	SW6010B
7439-92-1	Lead	4.26	J	1	2.6	6	ug/L	07/20/11	07/20/11	SW6010B
7439-97-6	Mercury	0.131	J	1	0.091	0.2	ug/L	07/20/11	07/21/11	SW7470A
7782-49-2	Selenium	10	U	1	4.8	10	ug/L	07/20/11	07/20/11	SW6010B
7440-22-4	Silver	2.08	J	1	1.5	5	ug/L	07/20/11	07/20/11	SW6010B

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	METALS-RCRA				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
E = Value Exceeds Calibration Range
OR = Over Range

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LaBella Associates P.C.	Date Collected:	07/14/11
Project:	Former Photech Imaging Site	Date Received:	07/20/11
Client Sample ID:	1STGENERATIONWATERSERVICEUNIT	SDG No.:	C3070
Lab Sample ID:	C3070-02	Matrix:	SOIL
Level (low/med):	low	% Solid:	74.8

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	3.68		1	0.302	0.916	mg/Kg	07/20/11	07/20/11	SW6010B
7440-39-3	Barium	16.6		1	0.366	4.58	mg/Kg	07/20/11	07/20/11	SW6010B
7440-43-9	Cadmium	0.221	J	1	0.055	0.275	mg/Kg	07/20/11	07/20/11	SW6010B
7440-47-3	Chromium	3.27		1	0.119	0.458	mg/Kg	07/20/11	07/20/11	SW6010B
7439-92-1	Lead	8.37		1	0.11	0.549	mg/Kg	07/20/11	07/20/11	SW6010B
7439-97-6	Mercury	0.016		1	0.003	0.013	mg/Kg	07/20/11	07/20/11	SW7471A
7782-49-2	Selenium	0.447	J	1	0.375	0.916	mg/Kg	07/20/11	07/20/11	SW6010B
7440-22-4	Silver	0.244	J	1	0.137	0.458	mg/Kg	07/20/11	07/20/11	SW6010B

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	
Comments:	METALS RCRA				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
E = Value Exceeds Calibration Range
OR = Over Range

1A - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VAULT
2nd generation
watersevite vault

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1806 Mod. Ref No.: SDG No.: SH1806

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1806-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2438.D

Level: (TRACE/LOW/MED) LOW Date Received: 09/18/2009

% Moisture: not dec. Date Analyzed: 09/19/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
67-64-1	Acetone	5.0	U
75-15-0	Carbon disulfide	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
108-05-4	Vinyl acetate	5.0	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
71-43-2	Benzene	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	5.0	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-Hexanone	5.0	U
124-48-1	Dibromochloromethane	5.0	U
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
1330-20-7	m,p-Xylene	5.0	U
95-47-6	o-Xylene	5.0	U

1B - FORM I VOA-2

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VAULT
2nd Generation water
Service Vault MFA

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1806 Mod. Ref No.: SDG No.: SH1806

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1806-02A

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: V2L2438.D

Level: (TRACE/LOW/MED) LOW Date Received: 09/18/2009

% Moisture: not dec. Date Analyzed: 09/19/2009

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 5.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	Xylene (Total)	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropylbenzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
103-65-1	n-Propylbenzene	5.0	U
108-67-8	1,3,5-Trimethylbenzene	5.0	U
98-06-6	tert-Butylbenzene	5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	U
135-98-8	sec-Butylbenzene	5.0	U
99-87-6	4-Isopropyltoluene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
104-51-8	n-Butylbenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
91-20-3	Naphthalene	5.0	U
110-75-8	2-Chloroethyl vinyl ether	5.0	U

1D - FORM I SV-1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VAULT
2nd Generation Water
Service Vault MFP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1806 Mod. Ref No.: SDG No.: SH1806

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1806-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1F9851.D

Level: (LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received: 09/18/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 09/18/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 09/23/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	Bis(2-chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2´-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
111-91-1	Bis(2-chloroethoxy)methane	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U

1E - FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VAULT
2nd generation water
Service vault MFP

Lab Name: MITKEM LABORATORIES Contract:

Lab Code: MITKEM Case No.: H1806 Mod. Ref No.: SDG No.: SH1806

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: H1806-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1F9851.D

Level: (LOW/MED) LOW Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received: 09/18/2009

Concentrated Extract Volume: 1000 (uL) Date Extracted: 09/18/2009

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Date Analyzed: 09/23/2009

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-ethylhexyl)phthalate	3.9	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

U.S. EPA - CLP

1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

VAULT 2nd generation water service vault (AFP)

Lab Name: Mitkem Laboratories Contract: 209288

Lab Code: MITKEM Case No.: SAS No.: SDG No.: SH1806

Matrix (soil/water): WATER Lab Sample ID: H1806-02

Level (low/med): MED Date Received: 09/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	3.1	U		P
7440-39-3	Barium	29.2	B		P
7440-43-9	Cadmium	114			P
7440-47-3	Chromium	0.69	B		P
7439-92-1	Lead	2.1	U		P
7439-97-6	Mercury	0.056	U		CV
7782-49-2	Selenium	10.0	U		P
7440-22-4	Silver	2.4	U		P

Comments:

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☒ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Dennis Penler
CaBella Assoc. 300 State Street
Rochester, NY 14614

Project Mgr.: Shirley Ng
Telephone #: 585-290-6245

Invoice To: ← Same

P.O. No.: _____ RQN: _____

Project No.: 209288
Site Name: Pho-Tech
Location: Rochester State: NY
Sampler(s): E. Duncan

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Ice 10=_____ 11=_____

List preservative code below: 2 9 4

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: TCL VOCs	SVOCs	8 RCRA metals					
H18806-01	3,000 Gal. ~~Ag~~ UST	9/17/09	1050	G	WW	2	2		1	X	X	X					
H18806-02	Vault	9/17/09	1330	G	WW	2	2		1	X	X	X					

QA/QC Reporting Notes:
(check as needed)

- ☐ Provide MA DEP MCP CAM Report
- ☐ Provide CT DPH RCP Report

QA/QC Reporting Level
- ☒ Standard ☐ No QC
- ☐ Other NYSDEC ASP Cat B

State specific reporting standards: _____

EDD Format _____
☒ E-mail to DPenler@CaBellaPC.com

Condition upon receipt: ☐ Iced ☐ Ambient ☐ °C 4

Relinquished by:	Received by:	Date:	Time:
	UPS	9/17/09	1630
UPS		9/18/09	9:50

0007

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report Cover Page

LaBella Associates, P.C.

For Lab Project # 10-2851
Issued July 19, 2010
This report contains a total of 4 pages

The reported results relate only to the samples as they have been received by the laboratory.

Any noncompliant QC parameters having impact on the data are flagged or documented on the final report.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of frequently used data flags and their meaning:

"ND" = analyzed for but not detected.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Duplicate results outside QC limits. May indicate a non-homogenous matrix.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 Office: (585) 647-2530 Fax: (585) 647-3311

LAB REPORT FOR TCLP RCRA METALS ANALYSIS

Client: LaBella Associates, P.C.

Client Job Site: Photech

Client Job No.: 209288

Field Location: ~~3K~~ 5K Ag Silver Recovery Tank (MPR) Sludge

Field ID No.: N/A

Lab Project No.: 10-2851
Lab Sample No.: 9422

Sample Type: TCLP Extract

Date Sampled: 07/13/2010
Date Received: 07/14/2010

Parameter	Date Analyzed	Analytical Method	Result (mg/L)	Regulatory Limit (mg/L)
Arsenic	07/16/2010	SW846 6010	<0.100	5.0
Barium	07/16/2010	SW846 6010	1.60	100
Cadmium	07/16/2010	SW846 6010	0.109	1.0
Chromium	07/16/2010	SW846 6010	<0.050	5.0
Lead	07/16/2010	SW846 6010	<0.100	5.0
Mercury	07/16/2010	SW846 7470	<0.0020	0.2
Selenium	07/16/2010	SW846 6010	<0.100	1.0
Silver	07/16/2010	SW846 6010	<0.050	5.0

ELAP ID No.:10958

Comments: The laboratory control spike and spike duplicate was outside QC limits for Ba and Cd.

Approved By: Val M Miller for:
Bruce Hoogesteger, Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

File ID:102851.xls

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 Office: (585) 647-2530 Fax: (585) 647-3311

LAB REPORT FOR RCRA METALS ANALYSIS IN SOLIDS

Client: LaBella Associates, P.C.

Client Job Site: Photech

Client Job No.: 209288

Field Location: ~~3K~~ SK Ag Silver Recovery Tank (MFR) Sludge

Field ID No.: N/A

Lab Project No.: 10-2851
Lab Sample No.: 9422

Sample Type: Sludge

Date Sampled: 07/13/2010
Date Received: 07/14/2010

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Arsenic	07/16/2010	SW846 6010	1.57 D
Barium	07/16/2010	SW846 6010	12.1 D
Cadmium	07/19/2010	SW846 6010	213000
Chromium	07/16/2010	SW846 6010	28.2 D
Lead	07/16/2010	SW846 6010	12.7 D,M
Mercury	07/16/2010	SW846 7471	0.0613
Selenium	07/16/2010	SW846 6010	<0.552
Silver	07/16/2010	SW846 6010	2840 D

ELAP ID No.:10958

Comments:

Approved By: _____
Bruce Hoogesteger, Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

File ID:102851.xls

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM ENVIRONMENTAL SERVICES, INC.

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:	
COMPANY:	LaBella Associates P.C.	COMPANY:	Same
ADDRESS:	300 State St Suite 200	ADDRESS:	
CITY:	Rochester STATE: NY ZIP: 14614	CITY: STATE: ZIP:	
PHONE:	FAX:	PHONE:	FAX:
ATTN:	M Pelychaty	ATTN:	
COMMENTS:			

LAB PROJECT #: 10-2851 CLIENT PROJECT #: 209288

TURNAROUND TIME: (WORKING DAYS) STD OTHER

[X] 1 [ ] 2 [ ] 3 [ ] 5 [ ]

Quotation # → 2 day per lab. JD to call client.

PROJECT NAME/SITE NAME: Photech

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER OF CONTAINERS	TCLP RCRA Metals	RCRA metals								REMARKS	PARADIGM LAB SAMPLE NUMBER
1	7/13/2010	1730		X	3K Ag Silver Recovery Tank	Sludge	1	X	X								EAH 7/14 Ok per M. Pelychaty in email to JD 7/14. EAH 7/14	9422
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter		NELAC Compliance	
Container Type:		Y [X]	N [ ]
Comments:			
Preservation:	N/A	Y [ ]	N [ ]
Comments:			
Holding Time:		Y [X]	N [ ]
Comments:			
Temperature:	22°C - N/A	Y [ ]	N [ ]
Comments:	b/c for metals only		

Sampled By: Michael F. Pelychaty Date/Time: 7/13/2010

Relinquished By: [signature] Date/Time: 7/14/2010

Received By: [signature] Date/Time: 7/14/10 8:30AM

Received @ Lab By: Elizabeth A. Honch Date/Time: 7/14/10 1125

Total Cost:

P.I.F.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LaBella Associates P.C.	Date Collected:	05/31/11
Project:	Former Photech Imaging Site	Date Received:	06/02/11
Client Sample ID:	CONCRETEVAULT-053111 Silver Wastewater Vault MFR	SDG No.:	C2464
Lab Sample ID:	C2464-03	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	10	U	1	4.2	10	ug/L	06/03/11	06/06/11	SW6010B
7440-39-3	Barium	19.7	J	1	4	50	ug/L	06/03/11	06/06/11	SW6010B
7440-43-9	Cadmium	5020		1	0.5	3	ug/L	06/03/11	06/06/11	SW6010B
7440-47-3	Chromium	5	U	1	1.1	5	ug/L	06/03/11	06/06/11	SW6010B
7439-92-1	Lead	2.66	J	1	2.6	6	ug/L	06/03/11	06/06/11	SW6010B
7439-97-6	Mercury	0.2	UN	1	0.09	0.2	ug/L	06/05/11	06/06/11	SW7470A
7782-49-2	Selenium	10	U	1	4.8	10	ug/L	06/03/11	06/06/11	SW6010B
7440-22-4	Silver	5	U	1	1.5	5	ug/L	06/03/11	06/06/11	SW6010B

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	METALS-RCRA				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
E = Value Exceeds Calibration Range
OR = Over Range

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

Chemtech Project Number: C2464
COC Number:

CLIENT INFORMATION

Report to be sent to
COMPANY: LaBella Associates, P.C.
ADDRESS: 300 State Street, Suite 201
CITY: Rochester STATE: NY ZIP: 14614
ATTENTION: Mike Pelychaty, Dennis Porter
PHONE: 585.454.6110 FAX: 585.454.3066

PROJECT INFORMATION

PROJECT NAME: Former Photech Imaging Site
PROJECT #: 209288 LOCATION:
PROJECT MANAGER: Dennis Porter
E-MAIL: dporter@labellapc.com, mpelychaty@labellapc.com
PHONE: 585.295.6245 FAX:

BILLING INFORMATION

BILL TO: Dennis Porter PO#
ADDRESS: SAME
CITY: STATE: ZIP:
ATTENTION:
PHONE:

DATA TURNAROUND INFORMATION

FAX:_____ DAYS*
HARD COPY:_____ DAYS*
EDD_____ DAYS*
* TO BE APPROVED BY CHEMTECH
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ RESEULTS ONLY
- ☐ RESULTS * QC
- ☐ New Jersey REDUCED
- → New Jersey CLP
- ☐ USEPA CLP
- ☒ New York State ASP "B"
- ☐ New York State ASP "A"
- ☐ Other_____
- ☒ EDD FORMAT_____

ANALYSIS

1 RCRAmetals 2 PAH SVOC 3 TCL VOC 4 5 6 7 8 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# of Bottles	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
								B,E	E	A,E							<-- Specify Preservatives A-HCl B-HNO3 C-H2SO4 D-NaOH E-ICE F-OTHER
1.	MW-8	water			5-31-11	1120	1	X									
2.	IMW-14	water			5-31-11	1430	3		X	X							
3.	Concrete Vault-053111	water			5-31-11	1515	1	X									
4.	IMW-14	water			6-1-11	1215	1	X									
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE PROSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER	DATE/TIME	RECEIVED BY
1. [signature]	6/1/11 1200	1. Shipped Via UPS
RELINQUISHED BY	DATE/TIME	RECEIVED BY
2.		2.
RELINQUISHED BY	DATE/TIME	RECEIVED FOR LAB BY
3. UPS	6-2-11 1010	3. [signature]

Conditions of bottles or coilers at receipt: → COMPLIANT → NON COMPLIANT → COOLER TEMP 5°C
MeOH extraction requires an additional 4oz. Jar for percent solid
Comments:

Page 1 of 1

CLIENT: → Hand Delivered → Overnight
CHEMTECH: → Picked Up →

Shipment Complete ☑ YES → NO

10/18/2004

WHITE - CHEMTECH COPYFOR RETURN TO CLIENT **YELLOW** - CHEMTECH COPY **PINK** - SAMPLER COPY #

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 2

DARAMEND®-M Technical Specifications

DARAMEND-M® BIOREMEDIATION TECHNOLOGIES

DARAMEND-M® is a specially formulated version of Adventus' controlled-release, integrated carbon and zero valent iron (ZVI) technology for in situ chemical reduction. Similar to EHC-M® (http://www.adventusgroup.com/products/ehc_m.shtml), new DARAMEND-M encourages the precipitation and adsorption of arsenic and other dissolved metals (such as chromium, lead and mercury) to limit their mobility.

This new product from Adventus is capable of reducing the amount of metals that can leach from metal-impacted soil, in particular the amount of leachable metal in samples analyzed using the TCLP; Toxicity Characteristic Leaching Procedure (http://www.ehso.com/cssepa/TCLP.htm). Many regulatory jurisdictions have TCLP limits for a variety of metals whereby if a metal exceeds a certain TCLP value, it must be disposed of at a facility that is designed to handle that type of soil. This will often be much more expensive than disposal of soils that do not exceed the TCLP values. Pre-treatment of soil using DARAMEND-M may reduce the leachable metal concentrations, thus allowing for much more cost effective disposal. There may be other circumstances whereby soils can be treated and left in-place should they not exceed the TCLP values, in which case the economic benefit of applying the treatment will be even greater.

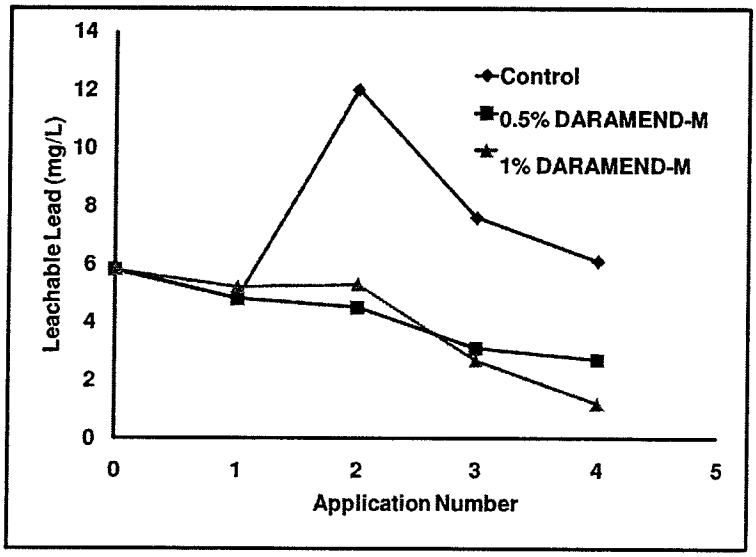


Figure 1. Influence of DARAMEND-M Application on Leachable Lead from Soil.

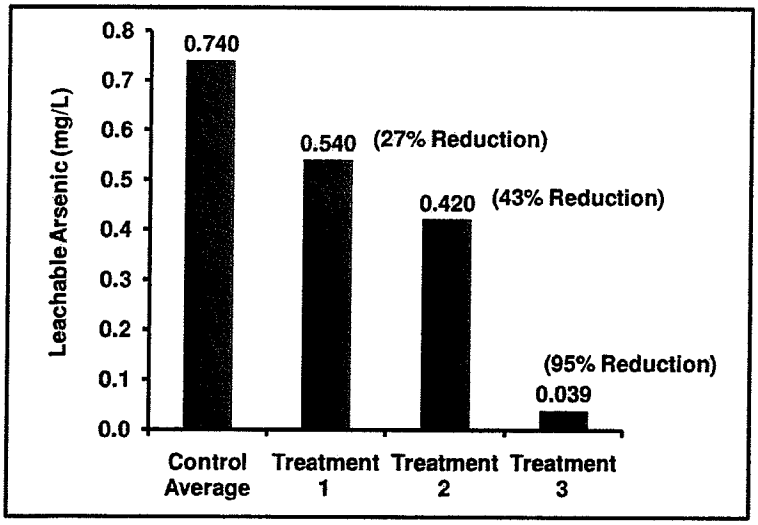


Figure 2. Influence of DARAMEND-M Treatment Methods on Leachable Arsenic from soil.

The technology has been demonstrated to be effective. Figure 1 above illustrates how the amount of lead that is leachable decreases with each additional application of DARAMEND-M. In this case application of the technology was able to reduce the amount of leachable lead to below the TCLP standard. Other results of laboratory treatability testing performed to develop the DARAMEND-M product, are shown in Figure 2. In these tests, the most effective treatment method reduced the amount of leachable arsenic by 95%, using an application rate of 3% weight of DARAMEND-M by dry weight of soil.

ADVENTUS

EHC™ Installation Procedures

Direct Application into Open Excavations

Introduction

EHC™ is composed of food grade organic carbon and zero-valent iron for reduction of persistent organic and/or inorganic contaminants from the subsurface environment. EHC has been employed for source area treatment, plume treatment and plume management using permeable reactive barriers (PRBs). EHC could either be injected into the subsurface as a slurry or applied directly into open excavations or trenches as a dry powder. Solid EHC substrate could also be directly mixed into the soil using deep soil mixing equipment. The choice of installation method will depend on your site-specific conditions, including treatment depth and geology. This document provides guidelines for direct application into open excavations.

Application into an Open Excavation

The most common application for direct placement of EHC is the addition of EHC to saturated soil and/or standing groundwater at the base of an excavation following a source area removal (**Figure 1**). The EHC could either be mixed into the backfill material prior to placement or applied in lifts and then mixed in place. It is advisable to mix the EHC with sufficient backfill to cover the thickness of the excavation that is expected to encounter groundwater, taking into account seasonal variability in the groundwater table. The EHC powder could also be physically mixed into saturated soil at the base of an excavation using for example a backhoe. Depending on the remaining impacts and the treatment goals, an application rate of 0.5 to 5% of EHC by soil mass is generally recommended for backfill applications.

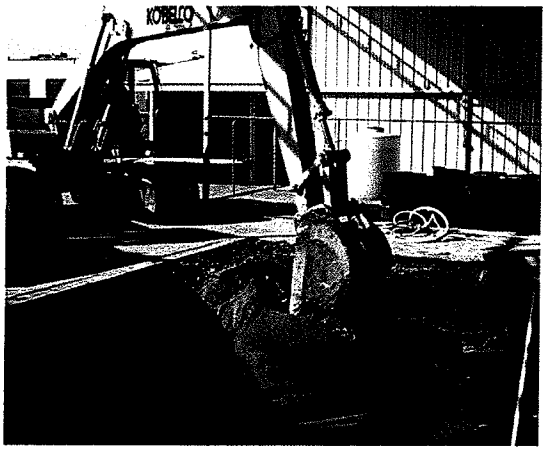
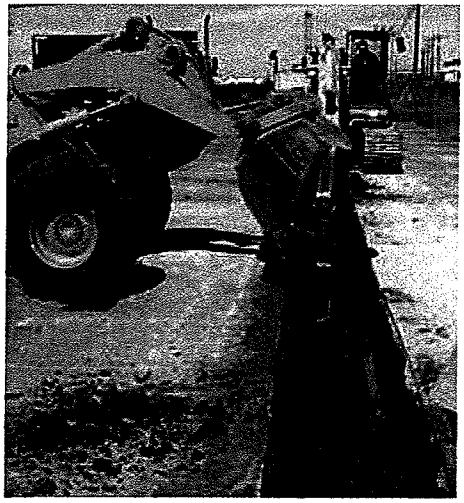


Figure 1: Backfill with 5% EHC by weight at an open excavation following source area removal.



EHC could also been added to a trench excavation to form a PRB for plume management (**Figure 2**). The trench is installed across the plume and backfilled with a mixture of EHC and sand up to the groundwater table to form a reactive zone. The groundwater is treated as it passes though the reactive barrier. In general a higher application rate of 5 to 10% of EHC by soil mass is recommended to sustain continuous removal over time. The remainder of the trench is backfilled with clean fill material (*e.g.* pea gravel or sand).

Figure 2: Placement of a mixture of EHC and sand into a trench excavation to form a PRB for plume control.

Mixing of EHC with backfill material

If wind is low, the dry powder can be mixed with the backfill at ground surface using construction equipment. Alternatively, the powder can be mixed into the backfill in the excavation using construction equipment and safe construction methods. If winds are high, it may be necessary to prepare a high-percent solids slurry of EHC and mix the slurry into the backfill or it may help to spray with water during application.



Figure 3: Dry mixing of EHC (provided in Supersacks) and sand.

Direct Soil Mixing

The EHC may also be placed directly on the bottom of an excavation either in dry powder form if winds are low, or in slurry form if winds are high enough to blow away a portion of the dry powder. In such a case, it may be advisable to mix the powder or slurry into the native soil at the bottom of the excavation using construction equipment and safe construction methods. This will be particularly useful if contaminants are expected to be present in the remaining soil. For deeper impacts, deep soil mixing equipment such as a Lang tool could be used (**Figure 4**).

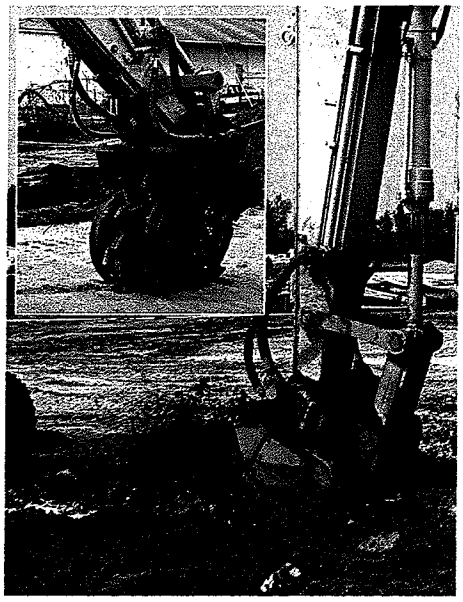


Figure 4: Deep soil mixing using a Lang tool.

Preparation of EHC slurry

If winds are high, the EHC may have to be mixed into a slurry to avoid loss of product. The solids content of the slurry may vary between 20% and 40% solids as calculated as the mass of EHC divided by the mass of water plus EHC. EHC is delivered as a dry powder in 50-lb bags or 2,000 lb Supersacks. **Table 1** indicates the volume of water required to attain a given percent solids level for a 50-lb bag of EHC. The solids content being used may need to be modified depending on how well the slurry mixes with the backfill.

Adventus recommends preparing the EHC slurries on site in a mixing tank with a paddle-mixer at the bottom (grout mixers). The slurry is then transferred to a feed tank connected to a pump allowing for easy transfer of the slurry; the slurry could then be pumped straight into the excavation. The EHC slurry has also been prepared in a variety of other ways; everything from

in-line automated mixing systems and recirculation of slurry using high-flow trash pumps to manual mixing using a hand-held drill with a mixing attachment. However, particularly for larger projects, Adventus recommends having a mechanical mixing system available on site.



Figure 5: Mixing of EHC slurry using recirculation.

Table 1: Volume of water required to attain different slurry solids contents per 50-lb bag of EHC.

Percent Solids Content	Mass of EHC (lbs)	Volume of Water (US gallons)
20%	50 lbs	24
30%	50 lbs	14
40%	50 lbs	9

Health and Safety

EHC is completely non-hazardous and safe to handle. The EHC MSDS is posted on our web site at www.adventusgroup.com/library/msds.shtml. When working with EHC, it is recommended to use standard personal protective equipment, including safety glasses, steel toe boots, nitrile gloves and hard hat. Dust mask may be required when in close contact with EHC under certain conditions. Please note that this document does not provide guidance on safe construction methods.

For information, please contact us at:

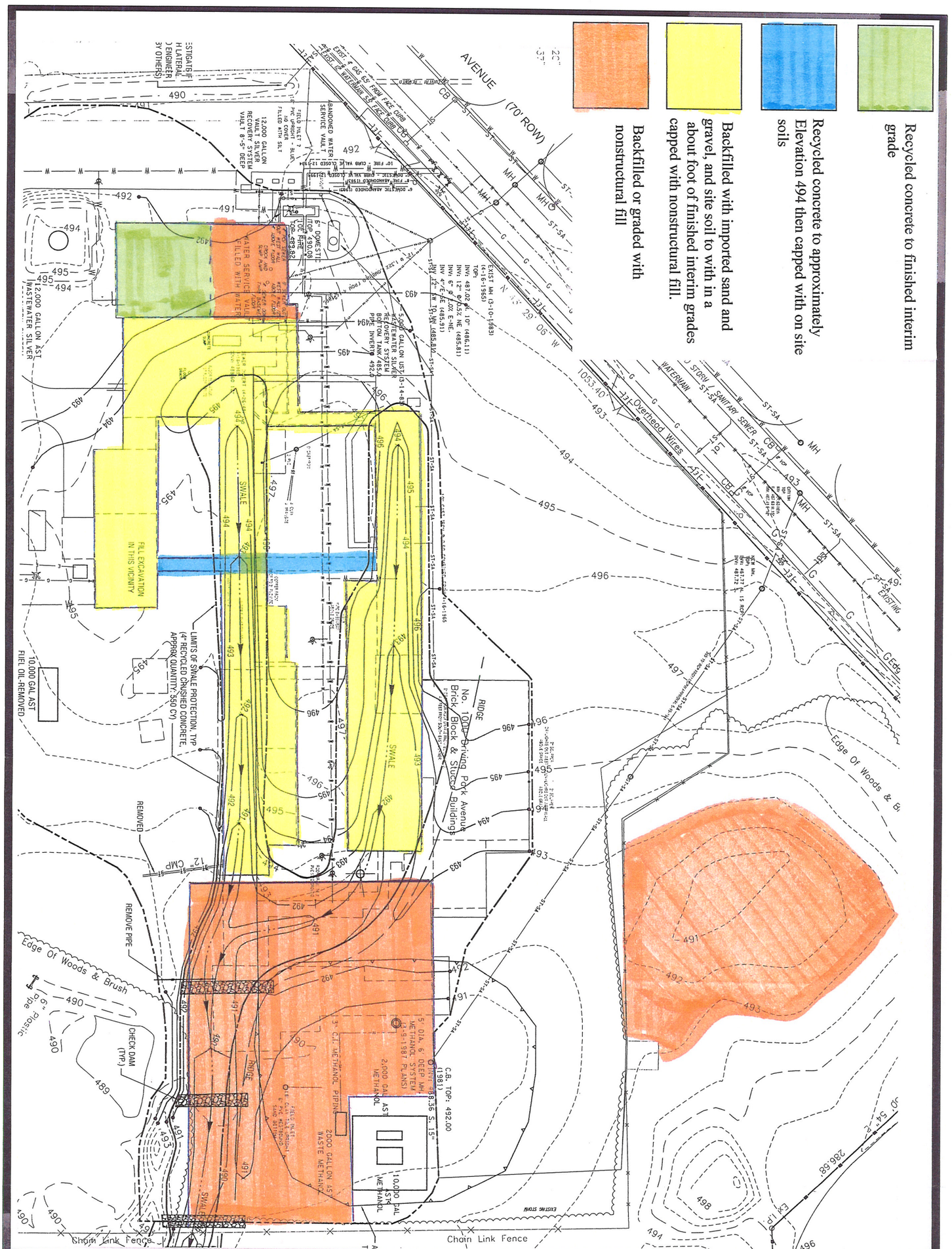
Adventus Americas Inc.
2871 W. Forest Road - Suite 2
Freeport, IL 61032 USA
Ph. 815/235-3503
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Adventus Americas (Canada)
21345 Fewster Drive
Mississauga, Ontario, Canada
Ph: 905/273-5374
Fx: 905/273-4367

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 3

Foundation Design Backfill Figure



Foundation Design, P.C.

335 Colfax Street
Rochester, New York 14606
Phone (585) 458-0824
FAX (585) 458-3323

Photech – Phase I Environmental

1000 Driving Park, Rochester, New York

Fill Placement Plan

Adapted from: LaBella Associates, P.C.

Revised Grading Plan

CHECKED BY: JDN

DRAWN BY: JAG

Scale Not to Scale

DATE: 11-05-10

JOB NO.: 3446.0

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 4

MCPW Short Term Sewer Use Permit Application

Department of **Environmental Services**
Monroe County, New York

Maggie Brooks
County Executive

John E. Graham, P.E.
Director

Re: Specialty Short Term Discharge Permit

Enclosed is an application for a Short Term Discharge Permit. Be advised this Permit is a legal document. Please provide all requested information accurately. An officer of the company must sign the permit or appoint a duly authorized representative. The letter of appointment must be included with the permit package.

Pure Waters, under Section 57 of the Worker's Compensation Law and Section 220 – Subdivision 8 of the Disability Benefits Law, is required to have on file proof that your company has workers compensation and disability benefits for your employees. A form from your insurance carrier stating such coverage will thus be required before your permit can be processed.

A check for the permit fee of $125.00 should be made payable to the Director of Finance, County of Monroe. All copies of the application, the form from your insurance carrier, and the check should be mailed to the following address:

Monroe County Pure Waters - IWC
444 East Henrietta Road, Bldg., 15
Rochester, New York 14620-4630

Should you have any questions regarding the permit application, please feel free to call the Industrial Waste Section at 753-7600, Option #4.

Sincerely,

Harry M. Reiter
Pretreatment Coordinator

APPLICATION PROCEDURE

1) The applicant must submit a letter requesting permission to discharge and a completed permit application. The letter must contain the information listed in item #2 below.

2) The following information is required before considering a request for discharge:
   a) Contractor or environmental representative name
   b) Contact person name, phone #, pager #, fax #
   c) Site name, address
   d) Description of site work and history of site. Site history should include current and past businesses and activities or products produced.
   e) Former/current contents of underground storage tanks and/or material spilled and/or history of site contaminants.
   f) Quantity of wastewater to be discharged
   g) Method of treatment (if applicable)
   h) Method to control solids discharge (if applicable)
   i) Expected date of discharge
   j) Project duration

3) Pure Waters, under Section 57 of the Worker's Compensation Law and Section 220 - Subdivision 8 of the Disability Benefits Law, is required to have on file proof that your company has worker's compensation and disability benefits for your employees. A form from your insurance carrier stating such coverage will thus be required before your permit can be processed.

4) A check, for the initial permit fee of $125.00, should be made payable to the Director of Finance, County of Monroe. The request to discharge letter, the application, the insurance form and the check should be mailed to:

Monroe County Pure Waters - IWC
444 E. Henrietta Road, Bldg. 15
Rochester, New York 14620

As an alternative - the request to discharge letter, the completed application and the insurance form may be faxed to (585) 324-1213. The check may be given to the inspector at time of field inspection.

5) Monroe County will schedule an inspection of the site upon receipt of the above listed material.

6) Please call the Industrial Waste Control Section at 753-7600, Option #4, for additional information.

PETROLEUM IMPACTED WATER
RULES AND REGULATIONS

1) A Specialty Short Term Discharge Permit is required for discharges to the Monroe County Sewer System or Wastewater Treatment Plant respectively. The permit fee is $125.00 (payable to the Director of Finance, County of Monroe).

2) The following conditions shall apply to this permit:

a) Required analytical testing of wastewater shall be submitted to this office for review prior to discharge.

b) The Monroe County limit for the summation of all purgeable halocarbons, aromatics, and polynuclear aromatic hydrocarbons is 2.13 mg/l. Detection levels must be at or less than 10 ug/l. Any detection level above 10 ug/l will be treated as a measured concentration.

c) Required testing includes, but is not limited to:

(1) Gasoline impacted water - method 602 or equivalent 40 CFR 136 method; and

Methyl Tertiary Butyl Ether (MTBE) - monitoring only. Limit not applicable at this time.

(2) Diesel or Fuel Oil impacted water - method 610 or equivalent 40 CFR 136 method.

d) The applicant must identify a suitable sanitary sewer discharge point. Monroe County will confirm the discharge point in the City of Rochester and the Towns of Gates, Chili and Ogden. Should the applicant be working in a location NOT described above, it will be the applicant's responsibility to contact the applicable Town and/or Village for similar service. The Towns/Villages of Webster, Scottsville, Honeoye Falls, and Spencerport are NOT part of the Monroe County Sewer System.

e) A maximum of 10 gpm discharge rate is permitted. Approval must be received from the appropriate agency (noted above) to exceed this rate.

f) Monroe County will conduct a field inspection of the site and issue a permit pending the completion and/or submission of all required information.

SPECIALTY SHORT TERM DISCHARGE PERMIT

County of Monroe Pure Waters District No. _____ ST- Permit No:_____

Expires: _____

Fee: $125.00

Firm Name _____
Address _____
_____

Type of Business or Service _____

I. The above-named applicant is permitted to discharge wastes into the Pure Waters Sewer system or Tributary thereto as applied for by an application dated_____ and verified by the applicant except the Director of Pure Waters requires the following terms and conditions to govern the permitted discharge:
A._____
B._____
C._____

II. The applicant further agrees to:
1. Accept and abide by all provisions of the Sewer Use Law of Monroe County and of all pertinent rules or regulations now in force or shall be adopted in the future.
2. Notify the Director of Pure Waters in writing of any revision to the plant sewer system or any change in industrial wastes discharge to the public sewers as listed in the application. The latter encompasses either (1) an increase or decrease in average daily volume or strength of wastes listed in the application or (2) new wastes that were not listed in the application.
3. Furnish the Director of Pure Waters upon request any additional information related to the installation or use of sewer or drain for which this permit is sought.
4. Operate and maintain any waste pretreatment facilities, as may be required as a condition of the acceptance into the public sewer of the industrial wastes involved, in an efficient manner at all times, and at no expense to the County.
5. Cooperate with the Director of Pure Waters or his representatives in their inspecting, sampling, and study of wastes, or the facilities provided for pretreatment.
6. Notify the Director of Pure Waters immediately of any accident, negligence, breakdown of pretreatment equipment, or other occurrence that occasions discharge to the public sewers of any wastes or process waters not covered by this permit.

Applicant's Name (please print) _____

Applicant's Signature _____ Date _____

Applicant's Title _____ Phone _____

Emergency Contact _____ Phone _____

Permit Approved by_____ Date _____
Director of Pure Waters

444 East Henrietta Road, Rochester, New York 14620 585-753-7600 option 4, fax 585-324-1213
http://www.monroecounty.gov/
printed on recycled paper

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 5

Quality Assurance Project Plan (QAPP)

LABELLA Associates, P.C.

Engineering
Architecture
Environmental

Quality Assurance Project Plan

Location:

Former Photech Imaging Site
1000 Driving Park Avenue
Rochester, New York

Prepared For:

City of Rochester
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, New York 14614

LaBella Project No. 209288

July 2011

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1. INTRODUCTION

LaBella's Quality Assurance Project Plan (QAPP) Program is an integral part of its approach to environmental investigations. By maintaining a rigorous quality control program, our firm is able to provide accurate and reliable data.

This QAPP contains procedures that provide for collected data to be properly evaluated, and which document that quality control procedures have been followed in the collection of samples. The quality control program represents the methodology and measurement procedures used in collecting quality field data. This methodology includes the proper use of equipment, documentation of sample collection, and sample handling practices.

Procedures used in the firm's QAPP program are compatible with federal, state, and local regulations, as well as, appropriate professional and technical standards.

This QAPP program has been organized into the following areas:

- Quality Control Objectives and Checks
- Field Equipment, Handling, and Calibration
- Sampling Techniques
- Sample Handling and Packaging

It should be noted that the Remedial Action Work Plan (RAWP) may have project specific details that will differ from the procedures in this QAPP. In such cases, the RAWP should be followed (subsequent to regulatory approval). This QAPP is provided as an Appendix to the RAWP as a reference document and may not be strictly adhered to during implementation of the remedial work.

2. QUALITY CONTROL OBJECTIVES

The United States Environmental Protection Agency (EPA) has identified five general levels of analytical data quality as being potentially applicable to site investigations conducted under CERCLA. These levels are summarized below:

- **Level I** - Field screening. This level is characterized by the use of portable instruments, which can provide real-time data to assist in the optimization of sampling point locations and for health and safety support. Data can be generated regarding the presence or absence of certain contaminants (especially volatiles) at sampling locations.
- **Level II** - Field analysis. This level is characterized by the use of portable analytical instruments, which can be used on site or in mobile laboratories stationed near a site (close-support labs). Depending upon the types of contaminants, sample matrix, and personnel skills, qualitative and quantitative data can be obtained.
- **Level III** - Laboratory analysis using methods other than the Contract Laboratory Program (CLP) Routine Analytical Services (RAS). This level is used primarily in support of engineering studies using standard EPA-approved procedures. Some procedures may be equivalent to CLP RAS, without the CLP requirements for documentation.

- **Level IV** - CLP Routine Analytical Services. This level is characterized by rigorous QC protocols and documentation and provides qualitative and quantitative analytical data. Some regions have obtained similar support via their own regional laboratories, university laboratories, or other commercial laboratories.
- **Level V** - Non-standard methods. Analyses, which may require method modification and/or development. CLP Special Analytical Services (SAS) are considered Level V.

Unless stated otherwise, all data will be generated in accordance with Level IV. When CLP methodology is not available, federal and state approved methods will be utilized. Level III will be utilized, as necessary, for non-CLP RAS work which may include ignitability, corrosivity, reactivity, EP toxicity, and other state approved parameters for characterization. Level I will be used throughout the RI for health and safety monitoring activities.

All measurements will be made to provide that analytical results are representative of the media and conditions measured. Unless otherwise specified, all data will be calculated and reported in units consistent with other organizations reporting similar data to allow comparability of data bases among organizations. Data will be reported in ug/L and mg/L for aqueous samples, and ug/kg and mg/kg (dry weight) for soils, or otherwise as applicable.

The characteristics of major importance for the assessment of generated data are accuracy, precision, completeness, representativeness, and comparability. Application of these characteristics to specific projects is addressed later in this document. The characteristics are defined below.

2.1. Accuracy

Accuracy is the degree of agreement of a measurement or average of measurements with an accepted reference or "true" value and is a measure of bias in the system.

2.2. Precision

Precision is the degree of mutual agreement among individual measurements of a given parameter.

2.3. Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under correct normal conditions.

2.4. Representativeness

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition

Careful choice and use of appropriate methods in the field will ensure that samples are representative. This is relatively easy with water or air samples since these components are homogeneously dispersed. In soil and sediment, contaminants are unlikely to be evenly distributed, and thus it is important for the sampler and analyst to exercise good judgment when removing a sample.

2.5. Comparability

Comparability expresses the confidence with which one data set can be compared to another. The data sets may be inter- or intra- laboratory.

3. MEASUREMENT OF DATA QUALITY

3.1. Accuracy

Accuracy of a particular analysis is measured by assessing its performance with "known" samples. These "knowns" take the form of EPA standard reference materials, or laboratory prepared solutions of target analytes spiked into a pure water or sample matrix. In the case of GC or GC/MS analyses, solutions of surrogate compounds, which can be spiked into every sample and are designed to mimic the behavior of target analytes without interfering with their determination, are used.

In each case the recovery of the analyte is measured as a percentage, correcting for analytes known to be present in the original sample if necessary, as in the case of a matrix spike analysis. For EPA supplied known solutions, this recovery is compared to the published data that accompany the solution.

For the firm's prepared solutions, the recovery is compared to EPA-developed data or the firm's historical data as available. For surrogate compounds, recoveries are compared to EPA CLP acceptable recovery tables.

If recoveries do not meet required criteria, then the analytical data for the batch (or, in the case of surrogate compounds, for the individual sample) are considered potentially inaccurate. The analyst or his supervisor must initiate an investigation of the cause of the problem and take corrective action. This can include recalibration of the instrument, reanalysis of the QC sample, reanalysis of the samples in the batch, or flagging the data as suspect if the problems cannot be resolved. For highly contaminated samples, recovery of the matrix spike may depend on sample homogeneity. As a rule, analyses are not corrected for recovery of matrix spike or surrogate compounds.

3.2. Precision

Precision of a particular analysis is measured by assessing its performance with duplicate or replicate samples. Duplicate samples are pairs of samples taken in the field and transported to the laboratory as distinct samples. Their identity as duplicates is sometimes not known to ASC and usually not known to bench analysts, so their usefulness for monitoring analytical precision at bench level is limited. For most purposes, precision is determined by the analysis of replicate pairs (i.e., two samples prepared at the laboratory from one original sample). Often in replicate analysis the sample chosen for replication does not contain target analytes so that quantitation of precision is impossible. For EPA CLP analyses, replicate pairs of spiked samples, known as matrix spike/matrix spike duplicate samples, are used for precision studies. This has the advantage that two real positive values for a target analyte can be compared.

Precision is calculated in terms of Relative Percent Difference (RPD).

- Where X_1 and X_2 represent the individual values found for the target analyte in the two replicate analyses or in the matrix spike/matrix spike duplicate analyses.
- RPDs must be compared to the method RPD for the analysis. The analyst or his supervisor must investigate the cause of RPDs outside stated acceptance limits. This may include a visual inspection of the sample for non homogeneity, analysis of check samples, etc. Follow-up action may include sample reanalysis or flagging of the data as suspect if problems cannot be resolved.
- During the data review and validation process (see Section 9), field duplicate RPDs are assessed as a measure of the total variability of both field sampling and laboratory analysis.

3.3. Completeness

Completeness for each parameter is calculated as follows:

- The firm's target value for completeness for all parameters is 100%. A completeness value of 95% will be considered acceptable. Incomplete results will be reported to the site managers. In planning the field sample collection, the site manager will plan to collect field duplicates from identified critical areas. This procedure should assure 100% completeness for these areas.

3.4. Representativeness

The characteristic of representativeness is not quantifiable. Subjective factors to be taken into account are as follows:

- The degree of homogeneity of a site;
- The degree of homogeneity of a sample taken from one point in a site; and
- The available information on which a sampling plan is based.

To maximize representativeness of results, sampling techniques and sample locations will be carefully chosen so that they provide laboratory samples representative of the site and the specific area. Within the laboratory, precautions are taken to extract from the sample bottle an aliquot representative of the whole sample. This includes premixing the sample and discarding pebbles from soil samples.

4. QUALITY CONTROL (QC) TARGETS

Target values for detection limit, percent spike recovery and percent "true" value of known check standards, and RPD of duplicates/replicates are included in the QAPP, Analytical Procedures. Note that tabulated values are not always attainable. Instances may arise where high sample concentrations, non homogeneity of samples, or matrix interferences preclude achievement of target detection limits or other quality control criteria. In such instances, the firm will report reasons for deviations from these detection limits or noncompliance with quality control criteria.

5. FIELD SCREENING MEASUREMENT PROCEDURES

As part of the field screening procedures at the site a combination of a photo-ionization detector (PID) equipped with at 10.6 eV lamp and an X-Ray Fluorescence (XRF) meter will be used to measure/field screen contaminants of concern at the site.

5.1 XRF Field Screening

X-Ray Fluorescence (XRF) is the property of a material to emit x-rays, with a characteristic energy, upon being irradiated by x-rays from a known radioisotope source. The emitted x-rays are detected by the particular XRF instrument as they impact a detector, which converts the energy of the emitted x-ray into electric current. The strength of the current is proportional to the energy of the x-ray. An onboard microprocessor counts how often an energy is detected, assigns the energy to a particular element and reports the calculated concentration for the element. The following XRF instrument will be used by the field representative:

- Olympus Innov-X Delta Standard Handheld XRF

XRF Mode of Operation
The XRF instruments are typically used for taking in situ measurements of soil. Prior to taking the in situ measurement, the measurement location WILL cleared of any significant vegetation (if present), such as large clumps of grass, and is scuffed or otherwise leveled to provide a flat surface on which to place the instrument window. A piece of thin plastic is then placed on the measurement location. This protects the instrument window, preventing it from becoming damaged or contaminated by the media being tested. After the window is pressed to the plastic, the window is opened for a nominal 30 to 60 seconds. The method manual provides instructions for taking this decay into account to determine the length of time the window must remain open. Because of the shallow penetration of the X-rays in typical soils, the measured concentrations are representative of the concentrations present at the very surface of the material being measured. All XRF readings will be recorded in the units memory and later downloaded onto a computer.

XRF instruments will be used to assess real-time site conditions to support a previous investigation results. The XRF will be used to screen large numbers of soil samples to minimize excavation limits and be used for decision making purposes. Threshold values are included in the RAWP and were developed on XRF field measurements and corresponding laboratory data. XRF results are not intended to replace actual analytical results from samples submitted for laboratory analysis, but used as a decision making tool to preliminary assess areas of metals impacts versus non impacted areas.

Calibration
The XRF will be calibrated according to the manufacturer's specifications.

5.2 PID Field Screening

The following is a procedure acceptable to field personnel for determination soils contaminated by volatile organic compounds (VOCs). A PID is a portable, nonspecific, vapor/gas detector employing the principle of photoionization to detect a variety of VOC compounds, both organic and inorganic, in air. For the purpose of the QAPP, a PID will be used to screen for petroleum related VOCs using a 10.6 eV

lamp. Based on previous investigation conducted at the site, chlorinated VOCs do not appear to represent a concern that would require the use of a PID equipped with an 11.6 eV or flame ionization detector.

PID Mode of Operation
The PID is a useful general survey instrument at hazardous waste sites. A PID is capable of detecting and measuring real-time concentrations of many organic and inorganic vapors in air. For field measuring purposes, a soil sample is placed in a sealed jar or polyethylene bag and the volatile hydrocarbons are allowed to come to equilibrium with the jar headspace. The headspace hydrocarbon concentration is then measured with a calibrated PID instrument.

All readings are to be recorded in the site logbook. Readings should be recorded, following background readings, as "units above background," not ppm. As with any field instrument, accurate results depend on the operator being completely familiar with the operator's manual. The instructions in the operating manual should be followed explicitly in order to obtain accurate results. The operator shall take care to prevent the PID from being exposed to excessive moisture, dirt, or contamination, monitor the work activity as specified in the site Health and Safety Plan. The PID survey should be conducted at a slow to moderate rate of speed and the intake assembly (the probe) slowly swept from side to side. There is a three to five second delay in read-out depending upon the instruments sensitivity to the contaminant.

Calibration
The PID will be calibrated according to the manufacturer's specifications.

6. CONFIRMATION SOIL SAMPLING

The objective of the post-excavation confirmation sampling and analysis plan is to confirm that residual concentrations of contaminants of concern are "not to exceed" the New York State Department of Environmental Conservation (NYSDEC) Soil Cleanup Objectives (SCOs). The implementation of this protocol after excavation has been completed is to assure that the end state of the site and after the remedial work has been completed and accurate representation of the degree of remedial work is documented at the site.

The number and locations of confirmation samples will be conducted in accordance with the NYSDEC DER-10 document.

6.1 Soil Sampling Methodology

Soil samples may be recovered using a variety of methods and equipment, depending on the portion of the soil profile required (surface versus subsurface), and the type of sample required (disturbed versus undisturbed) and the soil type. Soil is collected directly, using a hand-held device such as hand scoop, post hole digger, or indirectly using a power activated device such as, back hoes, excavators, etc.

Chemical preservation of solids is generally not recommended. Cooling is usually the best approach, supplemented by the appropriate holding time. Wide-mouth glass containers with Teflon-lined caps are will be utilized for soil samples. The sample volume collected is a function of the analytical requirements and will be specified in the work plan. Transfer soil from the sample collection device to an appropriate sample container using a stainless steel or plastic scoop or equivalent. If composite samples are collected, place the soil sample in a stainless steel, plastic or other appropriate composition (e.g.: Teflon) bucket,

and mix thoroughly to obtain a homogeneous sample representative of the entire sampling interval. Then aliquot the soil sample into labeled containers.

Samples for volatile organic analysis must be collected directly from the bucket, before mixing the sample, to minimize loss due to volatilization of contaminants. All sampling devices should be decontaminated, and then wrapped in aluminum foil. The sampler should remain in this wrapping until it is needed. Each sampler should be used for only one sample. Dedicated samplers for soil samples may be impractical due to the large number of soil samples which may be required and the cost of the sampler.

6.2 Sample Collection

Collection of confirmation soil samples can be accomplished with tools such as spades, shovels, and scoops. Surface soil can be removed to the required depth with a garden spade, then use a stainless steel or plastic scoop to collect the sample. Accurate, representative samples can be collected with this procedure depending on the care and precision demonstrated by field personnel. A stainless steel or plastic scoop or lab spoon will suffice in most applications. Care should be exercised to avoid the use of devices plated with chrome or other materials. Plating is particularly common with garden trowels.

Follow these procedures to collect soil samples with a scoop or trowel:

1. Using a precleaned stainless steel scoop to loosen the desired volume of soil from the sampling area.
2. Transfer the discrete grab sample into an appropriate samples container.
3. For composite sample, homogenize grab samples in a stainless steel or glass mixing container using the appropriate tool (stainless steel spoon, trowel, or pestle).
4. Secure the cap tightly. Chemical preservation of solids is generally not recommended.
5. Label and tag sample containers, and record appropriate data on soil sample data sheets (depth, location, color, and other observations).
6. Place glass sample containers in sealable plastic bags, if required, and place containers into an iced shipping container. Samples should be cooled to 4°C as soon as possible.
7. Complete chain of custody forms and ship as soon as possible to minimize sample holding time. Scheduled arrival time at the analytical laboratory should give as much of a holding time as possible for scheduling of sample analysis.
8. Follow required decontamination and disposal procedures as described below.

7. MANAGEMENT OF DERIVED WASTE

Purpose:

The purposes of these guidelines are to ensure the proper holding, storage, transportation, and disposal of materials that may contain hazardous wastes. Investigation-derived waste (IDW) included the following:

- Discarded soil samples and used sample containers;
- Decontamination waters and associated solids;
- Soiled disposable personal protective equipment (PPE);
- Used disposable sampling equipment;
- Used plastic sheeting and aluminum foil;
- Other equipment or materials that either contain or have been in contact with potentially-impacted environmental media including drilling equipment, support vehicles, clothing, etc.

- Because these materials may contain regulated chemical constituents, they must be managed as a solid waste. This management may be terminated if characterization analytical results indicate the absence of these constituents.

Procedure:

1. Contain all investigation-derived wastes in Department of Transportation (DOT)-approved 55-gallon drums, roll-off boxes, or other containers suitable for the wastes.
2. Contain wastes from separate borings or wells in separate containers (i.e. do not combine wastes from several impacted areas in a single container, unless it is a container used specifically for transfer purposes, or unless specific permission to do so has been provided by the LaBella Project Manager. Unused samples from surface sample locations within a given area may be combined.
3. To the extent practicable, separate solids from sampling equipment, decontamination waters, and similar liquids. Place solids within separate containers.
4. Transfer all waste containers to a staging area. Access to this area will be controlled. Waste containers must be transferred to the staging area as soon as practicable after the generating activity is complete.
5. Pending transfer, all containers will be covered and secured when not immediately attended,
6. Label all containers with regard to contents, origin, and date of generation. Use indelible ink for all labeling.
7. Collect samples for waste characterization purposes, use boring/well sample analytical data for characterization.
8. For wastes determined to be hazardous in character, be aware on accumulation time limitations. Coordinate the disposal of these wastes with the Owner and NYSDEC.
9. Dispose of investigation-derived wastes as follows;
    - An inventory of all drums, their contents, and disposal inventory must be maintained throughout the project. This log will be included in the RI Report.
    - At the end of each day, all drums will be moved and stored in a secure location. Additionally, drums of liquid waste will be stored inside a secure unoccupied building at the Site.

8. DECONTAMINATION

Sampling methods and equipment have been chosen to minimize decontamination requirements and to prevent the possibility of cross-contamination. Decontamination of equipment will be performed between discrete sampling locations. Equipment used to collect samples between composite sample locations will not require decontamination between collection of samples. All sampling equipment will be decontaminated prior to sampling and at the end of each work day.

Sampling equipment and other non-disposable equipment will be decontaminated between each sampling event. The sampler will be cleaned prior to each use, by one of the following procedures:

- Initially cleaned of all foreign matter;
- Sanitized with a steam cleaner;

OR

- Initially cleaned of all foreign matter;

- Scrubbed with brushes in trisodium phosphate or alconox solution;
- Rinsed with deionized water;
- Triple rinsed with deionized water; and
- Allowed to air dry.

9. SAMPLE CONTAINERS

The volumes and containers required for the sampling activities are included in pre-washed sample containers will be ordered directly from a firm, which prepares the containers in accordance with EPA bottle washing procedures.

Table 1
Water Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Maximum Holding Time
Volatile Organics	40-ml glass vial with Teflon-backed septum	Two (2); fill completely, no air space	Cool to 4° C (ice in cooler), Hydrochloric acid to pH <2	7 days
Semivolatile Organics	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Pesticides	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
PCBs	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Metals	500-ml polyethylene	One (1); fill completely	Cool to 4° C (Nitric acid to pH <2	6 months

* Holding time is based on verified time of sample receipt at laboratory.

Note: All sample bottles will be prepared in accordance with USEPA bottle washing procedures. These procedures are incorporated in LaBella Associates Quality Control Procedures Manual, January, 1992

TABLE 2
Soil Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Maximum Holding Time
Volatile Organics, Semivolatile Organics, PCBs, and Pesticides	8-oz, glass jar with Teflon-lined cap	Two (2), fill as completely as possible	Cool to 4° C (ice in cooler)	7 days
RCRA Characterization	8-oz. glass jar with Teflon-lined cap	One (1); fill completely	Cool to 4° C (ice in cooler)	Must be extracted within 10 days; analyzed with 30 days

* Holding time is based on the times from verified time of sample receipt at the laboratory.

Note: All sample bottles will be prepared in accordance with USEPA bottle washing procedures. These procedures are incorporated in LaBella Associates Quality Control Procedures Manual, January, 1992.

10. SAMPLE CUSTODY

This section describes standard operating procedures for sample identification and chain-of-custody to be utilized for all Phase II field activities. The purpose of these procedures is to ensure that the quality of the samples is maintained during their collection, transportation, and storage through analysis. All chain-of-custody requirements comply with standard operating procedures indicated in EPA sample handling protocol.

Sample identification documents must be carefully prepared so that sample identification and chain-of-custody can be maintained and sample disposition controlled. Sample identification documents include:

- Field notebooks,
- Sample label,
- Custody seals, and
- Chain-of-custody records.

11. CHAIN-OF-CUSTODY

The primary objective of the chain-of-custody procedures is to provide an accurate written or computerized record that can be used to trace the possession and handling of a sample from collection to completion of all required analyses. A sample is in custody if it is:

- In someone's physical possession;
- In someone's view;
- Locked up; or
- Kept in a secured area that is restricted to authorized personnel.

11.1. Field Custody Procedures

- As few persons as possible should handle samples.
- Sample bottles will be obtained precleaned from a source such as I-Chem. Coolers or boxes containing cleaned bottles should be sealed with a custody tape seal during transport to the field or while in storage prior to use.
- The sample collector is personally responsible for the care and custody of samples collected until they are transferred to another person or dispatched properly under chain-of-custody rules.
- The sample collector will record sample data in the notebook.
- The site manager will determine whether proper custody procedures were followed during the fieldwork and decide if additional samples are required.

11.2. Sample Tags

Sample tags attached to or affixed around the sample container must be used to properly identify all samples collected in the field. The sample tags are to be placed on the bottles so as not to obscure any QC lot numbers on the bottles; sample information must be printed in a legible manner using waterproof ink. Field identification must be sufficient to enable cross-reference with the logbook. For chain-of-custody purposes, all QC samples are subject to exactly the same custodial procedures and documentation as "real" samples.

11.3. Transfer of Custody and Shipment

- The coolers in which the samples are packed must be accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving them must sign, date, and note the time on the chain-of-custody record. This record documents sample custody transfer
- Shipping containers must be sealed with custody seals for shipment to the laboratory. The method of shipment, name of courier, and other pertinent information are entered in the "Remarks" section of the chain-of-custody record and traffic reports.
- All shipments must be accompanied by the chain-of-custody record identifying their contents. The original record accompanies the shipment. The other copies are distributed appropriately to the site manage.
- If sent by mail, the package is registered with return receipt requested. If sent by common carrier, a bill of lading is used. Freight bills, Postal Service receipts, and bill of lading are retained as part of the permanent documentation.

11.4. Chain-of-Custody Record

The chain-of-custody record must be fully completed in duplicate, using black carbon paper where possible, by the field technician who has been designated by the project manager as responsible for sample shipment to the appropriate laboratory for analysis. In addition, if samples are known to require rapid turnaround in the laboratory because of project time constraints or analytical concerns (e.g., extraction time or sample retention period limitations, etc.), the person completing the chain-of-custody record should note these constraints in the "Remarks" section of the record.

11.5. Laboratory Custody Procedures

A designated sample custodian accepts custody of the shipped samples and verifies that the sample

identification number matches that on the chain-of-custody record and traffic reports, if required. Pertinent information as to shipment, pickup, and courier is entered in the "Remarks" section.

11.6. Custody Seals

Custody seals are preprinted adhesive-backed seals with security slots designed to break if the seals are disturbed. Sample shipping containers (coolers, cardboard boxes, etc., as appropriate) are sealed in as many places as necessary to ensure security. Seals must be signed and dated before use. On receipt at the laboratory, the custodian must check (and certify, by completing the package receipt log and LABMIS entries) that seals on boxes and bottles are intact. Strapping tape should be placed over the seals to ensure that seals are not accidentally broken during shipment.

12. DOCUMENTATION

12.1. Sample Identification

All containers of samples collected from the project will be identified using the following format on a label or tag fixed to the sample container (labels are to be covered with Mylar tape):

XX-YY-O/D

- XX This set of initials indicates the specific Phase II sampling project
- YY These initials identify the sample location. Actual sample locations will be recorded in the task log.
- O/D An "O" designates an original sample; "D" identifies it as a duplicate.

Each sample will be labeled, chemically preserved, if required and sealed immediately after collection. To minimize handling of sample containers, labels will be filled out prior to sample collection. The sample label will be filled out using waterproof ink and will be firmly affixed to the sample containers and protected with Mylar tape. The sample label will give the following information:

- Name of sampler,
- Date and time of collection,
- Sample number,
- Analysis required,
- pH, and
- Preservation.

12.2. Daily Logs

Daily logs and data forms are necessary to provide sufficient data and observations to enable participants to reconstruct event that occurred during the project and to refresh the memory of the field personnel if called upon to give testimony during legal proceedings. All daily logs will be kept in a bound waterproof notebook containing numbered pages. All entries will be made in waterproof ink, dated, and signed. No pages will be removed for any reason. Corrections will be made according to the procedures given at the end of this section. The daily logs will include a site log and task log.

The site log is the responsibility of the site manager and will include a complete summary of the day's activity at the site.

The **Task Log** will include:

- Name of person making entry (signature).
- Names of team members on-site.
- Levels of personnel protection:
  - Level of protection originally used;
  - Changes in protection, if required; and
  - Reasons for changes.
- Time spent collecting samples.
- Documentation on samples taken, including:
  - Sampling location and depth station numbers;
  - Sampling date and time, sampling personnel;
  - Type of sample (grab, composite, etc.); and
  - Sample matrix.
- On-site measurement data.
- Field observations and remarks.
- Weather conditions, wind direction, etc.
- Unusual circumstances or difficulties.
- Initials of person recording the information.

13. CORRECTIONS TO DOCUMENTATION

13.1. Notebook

As with any data logbooks, no pages will be removed for any reason. If corrections are necessary, these must be made by drawing a single line through the original entry (so that the original entry can still be read) and writing the corrected entry alongside. The correction must be initialed and dated. Most corrected errors will require a footnote explaining the correction.

13.2. Sampling Forms

As previously stated, all sample identification tags, chain-of-custody records, and other forms must be written in waterproof ink. None of these documents are to be destroyed or thrown away, even if they are illegible or contain inaccuracies that require a replacement document.

If an error is made on a document assigned to one individual, that individual may make corrections simply by crossing a line through the error and entering the corrected information. The incorrect information should not be obliterated. Any subsequent error discovered on a document should be corrected by the person who made the entry. All corrections must be initialed and dated.

13.3. Photographs

Photographs will be taken as directed by the site manager. Documentation of a photograph is crucial to its validity as a representation of an existing situation. The following information will be noted in the task log concerning photographs:

- Date, time, location photograph was taken;
- Photographer (signature);
- Weather conditions;
- Description of photograph taken;

- Reasons why photograph was taken;
- Sequential number of the photograph and the film roll number; and
- Camera lens system used.

After the photographs have been developed, the information recorded in the field notebook should be transferred to the back of the photographs

14. SAMPLE HANDLING, PACKAGING, AND SHIPPING

The transportation and handling of samples must be accomplished in a manner that not only protects the integrity of the sample, but also prevents any detrimental effects due to the possible hazardous nature of samples. Regulations for packaging, marking, labeling, and shipping hazardous materials are promulgated by the United States Department of Transportation (DOT) in the Code of Federal Regulation, 49 CFR 171 through 177. All samples will be delivered to the laboratory with 24 to 48 hours from the day of collection.

All chain-of-custody requirements must comply with standard operating procedures in the EPA sample handling protocol. All sample control and chain-of-custody procedures applicable to the Consultant are presented in the Field Personnel Chain-of-Custody Documentation and Quality Control Procedures Manual, January 1992.

14.1. Sample Packaging

Samples must be packaged carefully to avoid breakage or contamination and must be shipped to the laboratory at proper temperatures. The following sample packaging requirements will be followed:

- Sample bottle lids must never be mixed. All sample lids must stay with the original containers.
- The sample volume level can be marked by placing the top of the label at the appropriate sample height, or with a grease pencil. This procedure will help the laboratory to determine if any leakage occurred during shipment. The label should not cover any bottle preparation QC lot numbers.
- All sample bottles are placed in a plastic bag to minimize the potential for vermiculite contamination.
- Shipping coolers must be partially filled with packing materials and ice when required, to prevent the bottles from moving during shipment.
- The sample bottles must be placed in the cooler in such a way as to ensure that they do not touch one another.
- The environmental samples are to be cooled. The use of "blue ice" or some other artificial icing material is preferred. If necessary, ice may be used, provided that it is placed in plastic bags. Ice is not to be used as a substitute for packing materials.
- Any remaining space in the cooler should be filled with inert packing material. Under no circumstances should material such as sawdust, sand, etc., be used.
- A duplicate custody record and traffic reports, if required must be placed in a plastic bag and taped to the bottom of the cooler lid. Custody seals are affixed to the sample cooler.

14.2. Shipping Containers

Shipping containers are to be custody-sealed for shipment as appropriate. The container custody seal will consist of filament tape wrapped around the package at least twice and custody seals affixed in such a way that access to the container can be gained only by cutting the filament tape and breaking a seal.

Field personnel will make arrangements for transportation of samples to the lab. When custody is relinquished to a shipper, field personnel will telephone the lab custodian to inform him of the expected time of arrival of the sample shipment and to advise him of any time constraints on sample analysis. The lab must be notified as early in the week as possible, and in no case later than 3 p.m. (EST) on Thursday, regarding samples intended for Saturday delivery.

14.3. Marking and Labeling

- Use abbreviations only where specified.
- The words "This End Up" or "This Side Up" must be clearly printed on the top of the outer package. Upward pointing arrows should be placed on the sides of the package. The words "Laboratory Samples" should also be printed on the top of the package.
- After a sample container has been sealed, two chain-of-custody seals are placed on the container, one on the front and one on the back. The seals are protected from accidental damage by placing strapping tape over then.
- If samples are designated as medium or high hazard, they must be sealed in metal paint cans, placed in the cooler with vermiculite and labeled and placarded in accordance with DOT regulations.
- In addition, the coolers must also be labeled and placarded in accordance with DOT regulations if shipping medium and high hazard samples.

15. CALIBRATION PROCEDURES AND FREQUENCY

All instruments and equipment used during sampling and analysis will be operated, calibrated, and maintained according to the manufacturer's guidelines and recommendations as well as criteria set forth in the applicable analytical methodology references. Operation, calibration, and maintenance will be performed by personnel properly trained in these procedures. Documentation of all routine and special maintenance and calibration information will be maintained in an appropriate logbook or reference file, and will be available on request. Table 7-1 lists the major instruments to be used for sampling and analysis. Brief descriptions of calibration procedures for major field and laboratory instruments follow.

16. FIELD INSTRUMENTATION

16.1. MiniRae Photoionization Detector (PID)

Standard operating procedures for the PID require that routine maintenance and calibration be performed every six months. Field calibration will be performed on a daily basis. The packages used for calibration are non-toxic analyzed gas mixtures available in pressurized containers.

16.2. Dust Monitor

Standard operating procedures for the Dust Track dust monitor require that routine maintenance and calibration be performed every six months. Field calibration will be performed on a daily basis during the remedial program. Calibration will be documented in the Field Book.

16.3 XRF Meter

Standard operating procedures for the XRF meter will require that routine maintenance and calibration be performed daily or as otherwise required. Field calibration will be performed on a daily basis during the remedial program. Calibration will be documented in the Field Book.

17. INTERNAL QUALITY CONTROL CHECKS

QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of field equipment. Field-based QC will comprise at least 10% of each data set generated and will consist of standards, replicates, spikes, and blanks. Field duplicates and field blanks will be analyzed by the laboratory as samples and will not necessarily be identified to the laboratory as duplicates or blanks. For each matrix, field duplicates will be provided at a rate of one per 10 samples collected or one per shipment, whichever is greater. Field blanks which consist of trip, routine field, and rinsate blanks will be provided at a rate of one per 20 samples collected for each parameter group, or one per shipment, whichever is greater.

Calculations will be performed for recoveries and standard deviations along with review of retention times, response factors, chromatograms, calibration, tuning, and all other QC information generated. All QC data, including split samples, will be documented in the site logbook. QC records will be retained and results reported with sample data.

17.1. Blank Samples

Blank samples are analyzed in order to assess possible contamination from the field and/or laboratory so that corrective measures may be taken, if necessary. Field samples are discussed in the following subsection:

17.2. Field Blanks

Various types of blanks are used to check the cleanliness of field handling methods. The following types of blanks may be used: the trip blank, the routine field blank, and the field equipment blank. They are analyzed in the laboratory as samples, and their purpose is to assess the sampling and transport procedures as possible sources of sample contamination. Field staff may add blanks if field circumstances are such that they consider normal procedures are not sufficient to prevent or control sample contamination, or at the direction of the project manager. Rigorous documentation of all blanks in the site logbooks is mandatory.

- **Routine Field Blanks** or bottle blanks are blank samples prepared in the field to access ambient field conditions. They will be prepared by filling empty sample containers with deionized water and any necessary preservatives. They will be handled like a sample and shipped to the laboratory for analysis.
- **Trip Blanks** are similar to routine field blanks with the exception that they are **not** exposed to field conditions. Their analytical results give the overall level of contamination from

everything except ambient field conditions. For the RI/FS, one trip blank will be collected with every batch of water samples for volatile organic analysis. Each trip blank will be prepared by filling a 40-ml vial with deionized water prior to the sampling trip, transported to the site, handled like a sample, and returned to the laboratory for analysis without being opened in the field.

- **Field Equipment Blanks** are blank samples (sometimes called transfer blanks or rinsate blanks) designed to demonstrate that sampling equipment has been properly prepared and cleaned before field use, and that cleaning procedures between samples are sufficient to minimize cross contamination. If a sampling team is familiar with a particular site, they may be able to predict which areas or samples are likely to have the highest concentration of contaminants. Unless other constraints apply, these samples should be taken last to avoid excessive contamination of sampling equipment.

17.3. Field Duplicates

Field duplicate samples consist of a set of two samples collected independently at a sampling location during a single sampling event. In some instances the field duplicate can be a blind duplicate, i.e., indistinguishable from other analytical samples so that personnel performing the analyses are not able to determine which samples are field duplicates. Field duplicates are designed to assess the consistency of the overall sampling and analytical system.

17.4. Quality Control Check Samples

Inorganic and organic control check samples are available from EPA free of charge and are used as a means of evaluating analytical techniques of the analyst. Control check samples are subjected to the entire sample procedure, including extraction, digestion, etc., as appropriate for the analytical method utilized.

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 6

Health and Safety Plan (HASP)

LABELLA Associates, P.C.

Engineering
Architecture
Environmental

Site Health and Safety Plan

Location:

Former Photech Imaging Site
1000 Driving Park Avenue
Rochester, New York

Prepared For:

City of Rochester
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, New York 14614

LaBella Project No. 209288

July 2010

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SITE HEALTH AND SAFETY PLAN i
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Table 1

SITE HEALTH AND SAFETY PLAN

Project Title:	Former Photech: NYSDEC Environmental Restoration Program
Project Number:	209288
Project Location (Site):	1000 Driving Park Ave, Rochester, New York
Environmental Director:	Gregory Senecal, CHMM
Project Manager:	Dennis Porter, CHMM
Plan Review Date:	_____
Plan Approval Date:	_____
Plan Approved By:	_____ Mr. Richard Rote, CIH
Site Safety Supervisor:	Michael Pelychaty
Site Contact:	To Be Determined
Safety Director:	Rick Rote, CIH
Proposed Date(s) of Field Activities:	To Be Determined
Site Conditions:	Generally flat, encompassing approximately 12 acres
Site Environmental Information Provided By:	Prior Environmental Reports including Site Investigation/Remedial Alternatives Analysis (SI/RA) and Record of Decision (ROD)
Air Monitoring Provided By:	LaBella Associates, P.C.
Site Control Provided By:	LeChase Construction Services

EMERGENCY CONTACTS

	Name	Phone Number
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Rochester General Hospital	585-922-4000
Poison Control Center:	Finger Lakes Poison Control	585-273-4621
Police (local, state):	Monroe County Sheriff	911
Fire Department:	Rochester Fire Department	911
Site Contact:	Tim Magill	Cell: (585) 967-2093
Agency Contact:	NYSDEC – Todd Caffoe, P.E. Cit of Rochester – Joseph Biondolillo Finger Lakes Poison Control	585-226-5350 585-428-6649 1-800-222-1222
Environmental Director:	Greg Senecal, CHMM	Direct: 585-295-6243 Cell: 585-752-6480 Home: 585-323-2142
Project Manager:	Dennis Porter, CHMM	Direct: 585-295-6243 Cell: 585-451-4854
Site Safety Supervisor:	Michael Pelyhcaty	Direct: 585-295-6253 Cell: (585) 451-6225
Safety Director	Rick Rote, CIH	Direct: 585-295-6241

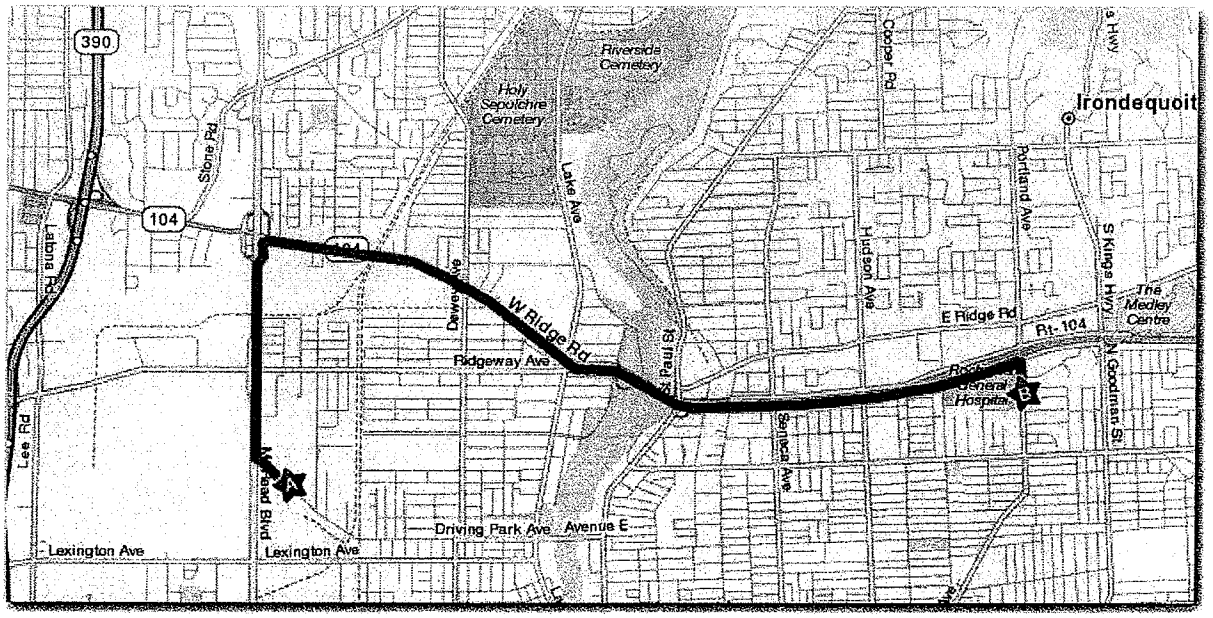
MAP AND DIRECTIONS TO THE MEDICAL FACILITY - ROCHESTER GENERAL HOSPITAL

Total Time: 10 minutes
Total Distance: 5.50 miles

Start: 1000 Driving Park, Rochester, New York

START	1. Start out going **NORTHWEST** on **DRIVING PARK AVE** toward **MT READ BLVD**.	go 0.2 mi
	2. Turn **RIGHT** onto **MT READ BLVD**.	go 0.2 mi
	3. Turn **SLIGHT LEFT** onto **ramp**.	go 0.2 mi
104	4. Merge onto **NY-104 E**.	go 3.4 mi
RAMP	5. Take the ramp toward **CARTER ST / PORTLAND AVE**.	go 0.1 mi
	6. Stay **STRAIGHT** to go onto **RT-104**.	go 0.4 mi
	7. Turn **RIGHT** onto **PORTLAND AVE / CR-114**.	go 0.2 mi
END	8. **1425 PORTLAND AVE** is on the **RIGHT**.	go 0.0 mi

End: 1425 Portland Ave, Rochester, NY 14621-3001



1.0 Introduction

The purpose of this Health and Safety Plan (HASP) it to provide guidelines for responding to potential health and safety issues that may be encountered during the Remedial Measures (RM) at the site located at 1000 Driving Park Avenue in the City of Rochester, Monroe County, New York. This HASP only reflects the policies of LaBella Associates P.C. The requirements of this HASP are applicable to all approved LaBella personnel at the work site. This document's project specifications and the Community Air Monitoring Plan (CAMP) are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP were developed in general accordance with 29 CFR 1910 and 29 CFR 1926 and do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or and other regulatory body.

2.0 Responsibilities

This HASP presents guidelines to minimize the risk of injury to project personnel, and to provide rapid response in the event of injury. The HASP is applicable only to activities of approved LaBella personnel and their authorized visitors. The Project Manager shall implement the provisions of this HASP for the duration of the project. It is the responsibility of LaBella employees to follow the requirements of this HASP, and all applicable company safety procedures.

3.0 Activities Covered

The activities covered under this HASP are limited to the following:

- ❑ Management of environmental investigation and remediation activities
- ❑ Environmental Monitoring
- ❑ Collection of samples
- ❑ Management of excavated soil and fill
- ❑ The removal of subgrade structures
- ❑ Excavation Backfill

4.0 Work Area Access and Site Control

The contractor(s) will have primary responsibility for work area access and site control. However, a minimum requirement for work area designation and control will consist of:

- Drilling (Geoprobe/Rotary) – Orange cones to establish at least a 10-foot by 10-foot work area. Alternatively the contractor may elect to establish an exclusion zone that encompasses the entire vicinity of the proposed investigation activity;
- Test Pitting – Orange cones and orange temporary fencing to establish at least 10-feet of distance between test pit and fencing. Alternatively the contractor may elect to establish an exclusion zone that encompasses the entire vicinity of the proposed investigation activity;
- Soil Excavation & Backfill – Construction Fence will be utilized to prevent unauthorized entry within the area targeted for soil excavation and soil stockpiling;
- Subgrade Structure Removal – No confined space entry will be allowed. Construction Fence will be utilized to prevent unauthorized entry within the area where the structures are being removed and staged.

5.0 Potential Health and Safety Hazards

This section lists some potential health and safety hazards that project personnel may encounter at the project site and some actions to be implemented by approved personnel to control and reduce the associated risk to health and safety. This is not intended to be a complete listing of any and all potential health and safety hazards. New or different hazards may be encountered as site environmental and site work conditions change. The suggested actions to be taken under this plan are not to be substituted for good judgment on the part of project personnel. At all times, the Site Safety Officer has responsibility for site safety and his or her instructions must be followed.

5.1 Hazards Due to Heavy Machinery

Potential Hazard:
Heavy machinery including trucks, excavators, backhoes, etc will be in operation at the site. The presence of such equipment presents the danger of being struck or crushed. Use caution when working near heavy machinery.

Protective Action:
Make sure that operators are aware of your activities, and heed operator's instructions and warnings. Wear bright colored clothing and walk safe distances from heavy equipment. A hard hat, safety glasses and steel toe shoes are required.

5.2 Excavation Hazards

Potential Hazard:
Excavations and trenches can collapse, causing injury or death. Edges of excavations can be unstable and collapse. Toxic and asphyxiant gases can accumulate in confined spaces and trenches. Excavations that require working within the excavation will require air monitoring in the breathing zone (refer to Section 9.0).

Excavations left open create a fall hazard which can cause injury or death.

Protective Action:
Personnel must receive approval from the Project Manager to enter an excavation for any reason. Subsequently, approved personnel are to receive authorization for entry from the Site Safety Officer. Approved personnel are not to enter excavations over 4 feet in depth unless excavations are adequately sloped. Additional personal protective equipment may be required based on the air monitoring.

Personnel should exercise caution near all excavations at the site as it is expected that excavation sidewalls will be unstable. All excavations will be backfilled by the end of each day. Additionally, no test pit will be left unattended during the day.

Fencing and/or barriers accompanied by "no trespassing" signs should be placed around all excavations when left open for any period of time when work is not being conducted.

5.3 Cuts, Punctures and Other Injuries

Potential Hazard:
In any excavation or construction, work site there is the potential for the presence of sharp or jagged edges on rock, metal materials, and other sharp objects. Serious cuts and punctures can result in loss of blood and infection.

Protective Action:
The Project Manager is responsible for making First Aid supplies available at the work site to treat minor injuries. The Site Safety Officer is responsible for arranging the transportation of authorized on-site personnel to medical facilities when First Aid treatment in not sufficient. Do not move seriously injured workers. All injuries requiring treatment are to be reported to the Project Manager. Serious injuries are to be reported immediately to the Site Safety Officer.

5.4 Injury Due to Exposure of Chemical Hazards

Potential Hazards:
Volatile and Semi-volatile organic compounds and metal are known to be present at the site. Levels of metals at the site range from low to moderate up to hazardous waste levels (for toxicity). It is possible that petroleum or chlorinated solvents or other chemicals may be encountered at the project work site. Inhalation of high concentrations of organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis. Metal compounds adhered to dust particulates could also present an inhalation hazard.

Protective Action:
The presence of organic vapors may be detected by their odor and by monitoring instrumentation. Approved employees will not work in environments where hazardous concentrations of organic vapors are present. Air monitoring (refer to Section 9.0 and to the Modified CAMP in Appendix 7) of the work area will be performed at least every 60 minutes or more often using a Photoionization Detector (PID). Personnel are to leave the work area whenever PID measurements of ambient air exceed 25 ppm consistently for a 5 minute period. In the event that sustained total volatile organic compound (VOC) readings of 25 ppm is encountered personnel should upgrade personal protective equipment to Level C (refer to Section 8.0) and an Exclusion Zone should be established around the work area to limit and monitor access to this area (refer to Section 6.0).

Dust particulates may be detected by monitoring instrumentation. Approved employees will not work in environments where hazardous concentrations of volatile organic vapors or particulates are present.

5.5 Injuries Due to Extreme Hot or Cold Weather Conditions

Potential Hazards:
Extreme hot weather conditions can cause heat exhaustion, heat stress and heat stroke or extreme cold weather conditions can cause hypothermia.

Protective Action:
Precaution measures should be taken such as dress appropriately for the weather conditions and drink plenty of fluid. If personnel should suffer from any of the above conditions, proper techniques should be taken to cool down or heat up the body and taken to the nearest hospital if needed.

5.6 Potential Exposure to Asbestos

Potential Hazards:
During ground intrusive activities (e.g., test pitting or drilling) soil containing asbestos may be encountered. Asbestos is friable when dry and can be inhaled when exposed to air.

Protective Action:
The presence of asbestos can be identified through visual observation of a white magnesium silicate material. If encountered, work should be halted and a sample of the suspected asbestos should be collected and placed in a plastic sealable bag. This sample should be sent to the asbestos laboratory at LaBella Associates for analysis.

6.0 Work Zones

In the event that conditions warrant establishing various work zones (i.e., based on hazards - Section 5.4), the following work zones should be established:

Exclusion Zone (EZ):
The EZ will be established in the immediate vicinity and adjacent downwind direction of site activities that elevate breathing zone VOC concentrations to unacceptable levels based on field screening. These site activities include contaminated soil excavation and soil sampling activities. If access to the site is required to accommodate non-project related personnel then an EZ will be established by constructing a barrier around the work area (yellow caution tape and/or construction fencing). The EZ barrier shall encompass the work area and any equipment staging/soil staging areas necessary to perform the associated work. The contractor(s) will be responsible for establishing the EZ and limiting access to approved personnel. Depending on the condition for establishing the EZ, access to the EZ may require adequate PPE (e.g., Level C).

Contaminant Reduction Zone (CRZ):
The CRZ will be the area where personnel entering the EZ will don proper PPE prior to entering the EZ and the area where PPE may be removed. The CRZ will also be the area where decontamination of equipment and personnel will be conducted as necessary.

7.0 Decontamination Procedures

Upon leaving the work area, approved personnel shall decontaminate footwear as needed. Under normal work conditions, detailed personal decontamination procedures will not be necessary. Work clothing may become contaminated in the event of an unexpected splash or spill or contact with a contaminated substance. Minor splashes on clothing and footwear can be rinsed with clean water. Heavily contaminated clothing should be removed if it cannot be rinsed with water. Personnel assigned to this project should be prepared with a change of clothing whenever on site.

Personnel will use the contractor's disposal container for disposal of PPE.

8.0 Personal Protective Equipment

Generally, site conditions at this work site require level of protection of Level D or modified Level D. However, air monitoring will be conducted to determine if up-grading to Level C PPE is required (refer to Section 9.0). Descriptions of the typical safety equipment associated with Level D and Level C are provided below:

Level D:
Hard hat, safety glasses, rubber nitrile sampling gloves, steel toe construction grade boots, etc.

Level C:
Level D PPE and full or ½-face respirator and tyvek suit (if necessary). [*Note: Organic vapor cartridges are to be changed after each 8-hours of use or more frequently.*]

9.0 Air Monitoring

According to 29 CFR 1910.120(h), air monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection required for personnel working on-site. Air monitoring will consist at a minimum of the procedures described in the "Site Specific CAMP". Please refer to the Site Specific CAMP for further details on air monitoring at the site.

The Air Monitor will utilize a photoionization Detector (PID) to screen the ambient air in the work areas for total Volatile Organic Compounds (VOCs) and a DustTrak tm Model 8520 aerosol monitor or equivalent for measuring particulates. Work area ambient air will generally be monitored in the work area and downwind of the work area. Air monitoring of the work areas and downwind of the work areas will be performed at least every 60 minutes or more often using a PID, and the DustTrak meter.

If sustained PID readings of greater than 25 ppm are recorded in the breathing zone, then either personnel are to leave the work area until satisfactory readings are obtained or approved personnel may re-enter the work areas wearing at a minimum a ½ face respirator with organic vapor cartridges for an 8-hour duration (i.e., upgrade to Level C PPE). Organic vapor cartridges are to be changed after each 8-hours of use or more frequently, if necessary. If PID readings are sustained, in the work area, at levels above 25 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered or additional PPE will be required (i.e., Level B).

If dust concentrations exceed the upwind concentration by 150 $\mu g/m^3$ (0.15 mg/m^3) consistently for a 10 minute period within the work area or at the downwind location, then LaBella personnel may not re-enter the work area until dust concentrations in the work area decrease below 150 $\mu g/m^3$ (0.15 mg/m^3), which may be accomplished by the construction manager implementing dust control or suppression measures.

10.0 Emergency Action Plan

In the event of an emergency, employees are to turn off and shut down all powered equipment and leave the work areas immediately. Employees are to walk or drive out of the site as quickly as possible and wait at the assigned 'safe area'. Follow the instructions of the Site Safety Officer.

Employees are not authorized or trained to provide rescue and medical efforts. Rescue and medical efforts will be provided by local authorities.

11.0 Medical Surveillance

Medical surveillance will be provided to all employees who are injured due to overexposure from an emergency incident involving hazardous substances at this site.

12.0 Employee Training

Personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the site.

Individuals involved with the remedial investigation must be 40-hour OSHA HAZWOPER trained with current 8-hour refresher certification.

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Table 1
Exposure Limits and Recognition Qualities

Compound	PEL-TWA (ppm)(b)(d)	TLV-TWA (ppm)(c)(d)	STEL	LEL (%)(e)	UEL (%)(f)	IDLH (ppm)(g)(d)	Odor	Odor Threshold (ppm)	Ionization Potential
Acetone	750	500	NA	2.15	13.2	20,000	Sweet	4.58	9.69
Anthracene	0.2	0.2	NA	NA	NA	NA	Faint aromatic	NA	NA
Benzene	1	0.5	5	1.3	7.9	3000	Pleasant	8.65	9.24
Benzo (a) pyrene (coal tar pitch volatiles)	0.2	0.1	NA	NA	NA	700	NA	NA	NA
Benzo (a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (k) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	10.88
Carbon Disulfide	20	1	NA	1.3	50	500	Odorless or strong garlic type	0.096	10.07
Chlorobenzene	75	10	NA	1.3	9.6	2,400	Faint almond	0.741	9.07
Chloroform	50	2	NA	NA	NA	1,000	ethereal odor	11.7	11.42
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethylene	200	200	NA	9.7	12.8	400	Acrid	NA	9.65
1,2-Dichlorobenzene	50	25	NA	2.2	9.2		Pleasant		9.07
Ethylbenzene	100	100	NA	1	6.7	2,000	Ether	2.3	8.76
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	500	50	NA	12	23	5,000	Chloroform-like	10.2	11.35
Naphthalene	10, Skin	10	NA	0.9	5.9	250	Moth Balls	0.3	8.12
n-propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethane	NA	NA	NA	NA	NA	NA	Sweet	NA	NA
Toluene	100	100	NA	0.9	9.5	2,000	Sweet	2.1	8.82
Trichloroethylene	100	50	NA	8	12.5	1,000	Chloroform	1.36	9.45
1,2,4-Trimethylbenzene	NA	25	NA	0.9	6.4	NA	Distinct	2.4	NA
1,3,5-Trimethylbenzene	NA	25	NA	NA	NA	NA	Distinct	2.4	NA
Vinyl Chloride	1	1	NA	NA	NA	NA	NA	NA	NA
Xylenes (o,m,p)	100	100	NA	1	7	1,000	Sweet	1.1	8.56
Metals									
Arsenic	0.01	0.2	NA	NA	NA	100, Ca	Almond	NA	NA
Cadmium	0.2	0.5	NA	NA	NA	NA	NA	NA	NA
Chromium	1	0.5	NA	NA	NA	NA	NA	NA	NA
Lead	0.05	0.15	NA	NA	NA	700	NA	NA	NA
Mercury	0.05	0.05	NA	NA	NA	28	Odorless	NA	NA
Selenium	0.2	0.02	NA	NA	NA	Unknown	NA	NA	NA
Other									
Asbestos	0.1 (f/cc)	NA	1.0 (f/cc)	NA	NA	NA	NA	NA	NA

(a) Skin = Skin Absorption
(b) OSHA-PEL Permissible Exposure Limit (flame weighted average, 8-hour): NIOSH Guide, June 1990
(c) ACGIH – 8 hour time weighted average from Threshold Limit Values and Biological Exposure Indices for 2003
(d) Metal compounds in mg/m3
(e) Lower Exposure Limit (%)
(f) Upper Exposure Limit (%)
(g) Immediately Dangerous to Life or Health Level: NIOSH Guide, June 1990

Notes:
1. All values are given in parts per million (PPM) unless otherwise indicated
2. Ca = Possible Human Carcinogen, no IDLH information

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300 State Street
Rochester, New York 14614

Appendix 7

Community Air Monitoring Plan (CAMP)

LABELLA Associates, P.C.

Engineering
Architecture
Environmental

Site-Specific Community Air Monitoring Plan

Location:

Former Photech Imaging Site
1000 Driving Park Avenue
Rochester, New York

Prepared For:

City of Rochester
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, New York 14614

LaBella Project No. 209288

July 2011

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1.0 INTRODUCTION

This Site Specific Community Air Monitoring Plan (CAMP) has been prepared by LaBella Associates, P.C. (LaBella) on behalf of the City of Rochester. This CAMP addresses potential Volatile Organic Compound (VOC) vapor and particulate emissions that may occur during implementation of the Remedial Measures at the former Photech Imaging Site located at 1000 Driving Park Avenue, Rochester, New York which encompasses approximately 12.5 acres located in a commercial/industrial zoned area in the northwest quadrant of the City of Rochester, Monroe County, New York herein after referred to as the "Site."

2.0 PURPOSE

Various levels of VOCs, semi-VOCs, and metals (collectively refered to as "constituents of concern" (COCs)) have been detected in the soil and groundwater at the Site or are suspected to be contained in the soil and/or groundwater at the Site. The presence of these COCs through disturbance of soil and groundwater at the Site can potentially result in nuisance odors or fugitive emissions to the neighborhood in the immediate vicinity of the Site as well as to the various occupants of the Site. However, it should be noted that this CAMP is in-place as a precautionary measure.

This CAMP is specific to activities being conducted as part of the Remedial Action Work Plan (RAWP) and all ground intrusive activities at the Site. The CAMP describes the air monitoring activities to be completed in order to provide a measure of protection for any downwind receptors including Site occupants and occupants of neighboring properties. This CAMP is not intended to provide action levels for respiratory protection of workers involved with the building demolition.

This CAMP is based on the air monitoring specified in the New York State Department of Health (NYSDOH) Generic CAMP (included as Appendix 1A of the DER-10 NYSDEC Technical Guidance for Site Investigation and Remediation. However, this CAMP also includes more stringent (i.e., lower level) criteria for VOC monitoring as an added level of protection for Site occupants.

3.0 METHODOLOGY

This CAMP has been designed for building demolition and all ground instrusive activities at the Site. The CAMP is arranged in the following sections:

- Section 3.1: Site Background Monitoring – This section identifies the background monitoring (VOC and fugitive dust) to be completed at the beginning of each day and periodically throughout the day when building demolition activities are being conducted. The background monitoring is used for comparing readings from the other monitoring locations.

- Section 3.2: Downwind Perimeter Monitoring – This section identifies the downwind perimeter work area monitoring (VOC and fugitive dust) to be completed continuously during the building demolition activities. Action levels are identified in this section.

- Section 3.3: Nearest Potential Receptor Monitoring – This section identifies additional VOC monitoring that will be completed during building demolition activities to provide an added measure of protection at this Site that would not normally be required by NYSDEC or NYSDOH (i.e., this is above and beyond the NYSDOH Generic CAMP). Action levels are identified in this section.

It should be noted that based on the type of work, the various monitoring locations will be moved throughout the day to comply with the appropriate testing location.

In addition to the above, this CAMP also contains a Vapor Emission to Sensitive Receptors Response Plan (Section 4.0). This includes actions to be taken in the event that sustained exceedances of the specified action levels occur.

3.1 Site Background Monitoring

At the beginning of each day of field work during the building demolition activities, a wind sock or flag will be used to monitor wind direction in the work areas. Based upon daily wind conditions, a background monitoring location will be established. [*Note: In the event that the wind direction changes, the background monitoring location will be moved to an appropriate upwind location.*] The background monitoring location will be at least 25 feet from the work area in an upwind location. Subsequent to establishing the initial background measurements (VOC and particulate, see below), background measurements will be collected every 60 minutes throughout the duration of the building demolition activities for that day. The specific background monitoring is defined below:

Background VOC Monitoring:

A photo-ionization Detector (PID) capable of data logging will be used to screen the ambient air or VOCs in the background location (i.e., upwind). The PID will be calibrated daily (in accordance with the manufacturer's specifications) prior to collecting the background readings. The background readings will be collected by a 15-minute running average which will be used for comparison to the downwind perimeter monitoring (refer to Section 3.2) and the nearest potential receptor monitoring (refer to Section 3.3). After the initial reading, periodic background readings will be collected every 60-minutes.

Background Fugitive Dust Monitoring:

A DustTrak™ Model 8520 aerosol monitor or equivalent will be used for measuring particulates. The meter must be capable of measuring matter less than 10 micrometers in size (PM-10). The dust monitor will be calibrated daily (in accordance with the manufacturer's specifications) prior to collecting the background readings. The background dust monitoring will consist of collecting measurements integrated over a 15 minute period and will be used for comparison to the downwind perimeter monitoring (refer to Section 3.2). After the initial reading, periodic background readings will be collected every 60-minutes.

3.2 Downwind Perimeter Monitoring

Subsequent to collecting the initial Background Monitoring measurements, continuous monitoring of the downwind perimeter of the work area (i.e., exclusion zone) will be conducted throughout the duration of the building demolition activities that day. The downwind perimeter will vary depending on the work; however, in general this will be approximately 30 feet from the location of the work being completed. For example, in the event a Geoprobe boring is being completed, the downwind perimeter monitoring would be conducted approximately 30-ft. from the boring location.

Downwind Perimeter VOC Monitoring:

A MiniRae Lite PID or equivalent will be used to continuously monitor for VOCs at the downwind perimeter location. The PID will be calibrated daily (in accordance with the manufacturer's specifications) at the beginning of each day. An audible alarm will be set on the PID to sound in the event that total organic vapors exceed 5 parts per million (ppm) above the background readings. For example, if the background reading is 2 ppm, then the alarm will be set for 7 ppm.

Actions for Elevated VOC Readings

1. In the event that the action level of 5 ppm above background is exceeded, then work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions (refer to Section 3.0 for engineering controls), and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200-feet downwind of the work area or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less – but in no case less than 20 feet, is below 5 ppm over background (background based on the 15-minute average).

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown and the Vapor Emission to Sensitive Receptors Response Plan initiated, refer to Section 3.0.

All of the 15-minute readings will be recorded and will be available to NYSDEC and NYSDOH for viewing upon request. Instantaneous readings, if any, that are used for decision purposes will also be recorded.

Downwind Perimeter Fugitive Dust Monitoring:

A DustTrak™ Model 8520 aerosol monitor or equivalent will be used for measuring particulates. The dust meter must be capable of measuring matter less than 10 micrometers in size (PM-10) and be equipped with an audible alarm. The dust meter will be calibrated daily (in accordance with the manufacturer's specifications) prior to collecting readings. The dust monitoring will be conducted continuously and the measurements integrated over a 15 minute period. The results will be compared to the background monitoring (refer to Section 3.1). An audible alarm will be set on the dust meter to sound in the event that particulate levels exceed 100 micrograms per cubic meter ($\mu g/m^3$) greater than background for the 15-minute period. For example, if the background reading is 100 $\mu g/m^3$, then the alarm will be set for 200 $\mu g/m^3$.

Actions for Elevated Particulate Readings

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind) for the 15-minute period or if airborne dust is observed leaving the work area, then Fugitive Dust Control Techniques must be employed (see below). Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, work must be stopped and the Fugitive Dust Control Techniques identified below will be reevaluated. In this event the NYSDEC Project Manager will be contacted immediately. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 $\mu g /m^3$ of the upwind level and in preventing visible dust migration.

All of the 15-minute readings will be recorded and will be available to NYSDEC and NYSDOH for viewing upon request.

Fugitive Dust Control Techniques

One or more of the following dust control measures will be implemented in the event that the above action levels are exceeded:

- Apply water on exposed soils.
- Wetting equipment and test pit faces.
- Reducing test pit sizes.
- Immediately placing any investigation derived waste in drums and/or covering with plastic sheeting.

3.3 Nearest Potential Receptor Monitoring

A MiniRae Lite PID or equivalent will be used to continuously monitor for VOCs between the nearest potential receptor and the work area. Specifically, the MiniRae Lite PID or equivalent will be located half the distance between the perimeter of the work area (exclusion zone) and the nearest potential receptor, hereinafter referred to as the "Nearest Potential Receptor Monitoring Location". It should be noted that this location is not dependent on wind direction. The MiniRae Lite PID or equivalent will be calibrated daily (in accordance with the manufacturer's specifications) prior to collecting readings. The MiniRae Lite PID or equivalent will be operated in continuous mode and evaluate 15-minute running averages to account for any drift. An audible alarm will be set on the MiniRae Lite PID or equivalent to sound in the event that total organic vapors exceed 1 ppm above the background readings. For example, if the background reading is 2 ppm, then the alarm will be set for 3 ppm.

Actions for Elevated VOC Readings

1. In the event that the action level of 1 ppm above background is exceeded, then work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 1 ppm over background at the Nearest Potential Receptor Monitoring Location work activities can resume with continued monitoring (assuming the downwind perimeter location is also below it's action level, refer to Section 3.2).

2. If total organic vapor levels at the Nearest Potential Receptor Monitoring Location persist at levels in excess of 1 ppm over background but less than 3 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions (refer to Section 4.0 for engineering controls), and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level at the Nearest Potential Receptor Monitoring Location is below 10 ppm over background (background based on the 15-minute average).

3. If the organic vapor level is above 3 ppm at the Nearest Potential Receptor Monitoring Location, activities must be shutdown and the Vapor Emission to Sensitive Receptors Response Plan initiated, refer to Section 4.0.

All of the 15-minute readings will be recorded and will be available to NYSDEC and NYSDOH for viewing upon request. Instantaneous readings, if any, that are used for decision purposes will also be recorded.

4.0 Vapor Emission to Sensitive Receptors Response Plan

Engineering controls to abate VOC emissions source will immediately be put into effect if the action levels for VOC monitoring identified in Sections 3.2 and 3.3 are exceeded. These engineering controls may include:

- Vapor suppression utilizing foam vapor suppressants, polyethylene sheeting, or water.

- Backfilling of excavations (test pits).
- Covering emission sources with stockpiled materials.

If the measures taken to abate the emission source are ineffective and the total organic vapor readings continue to be above the specified action levels for more than 15 minutes (5 ppm at the downwind perimeter monitoring location or 1 ppm at the Nearest Potential Receptor Monitoring Location), then the following actions shall be placed into effect.

- Occupants of the residential and commercial buildings will be advised to stay inside their respective structure and to close all windows.
- All personnel listed in the Emergency Contacts section of the HASP for this project will be contacted.
- The Site Safety Supervisor will immediately contact the local authorities (fire department) and advise them of the circumstances.
- Continuous air monitoring will be conducted at the Downwind Perimeter Location, the Nearest Potential Receptor Monitoring Location and within the work zone and 1 minute average measurements will be recorded every 15 minutes. Air monitoring may be halted or modified by the Site Safety Supervisor when two successive measurements are below the specified action levels.

If readings remain elevated above the specified action levels for a period of 60 minutes (5 ppm at the downwind perimeter monitoring location or 1 ppm at the Nearest Potential Receptor Monitoring Location) the Site Safety Officer will request that local authorities evacuate the occupants of the buildings.

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Rochester, New York 14614

Appendix 8

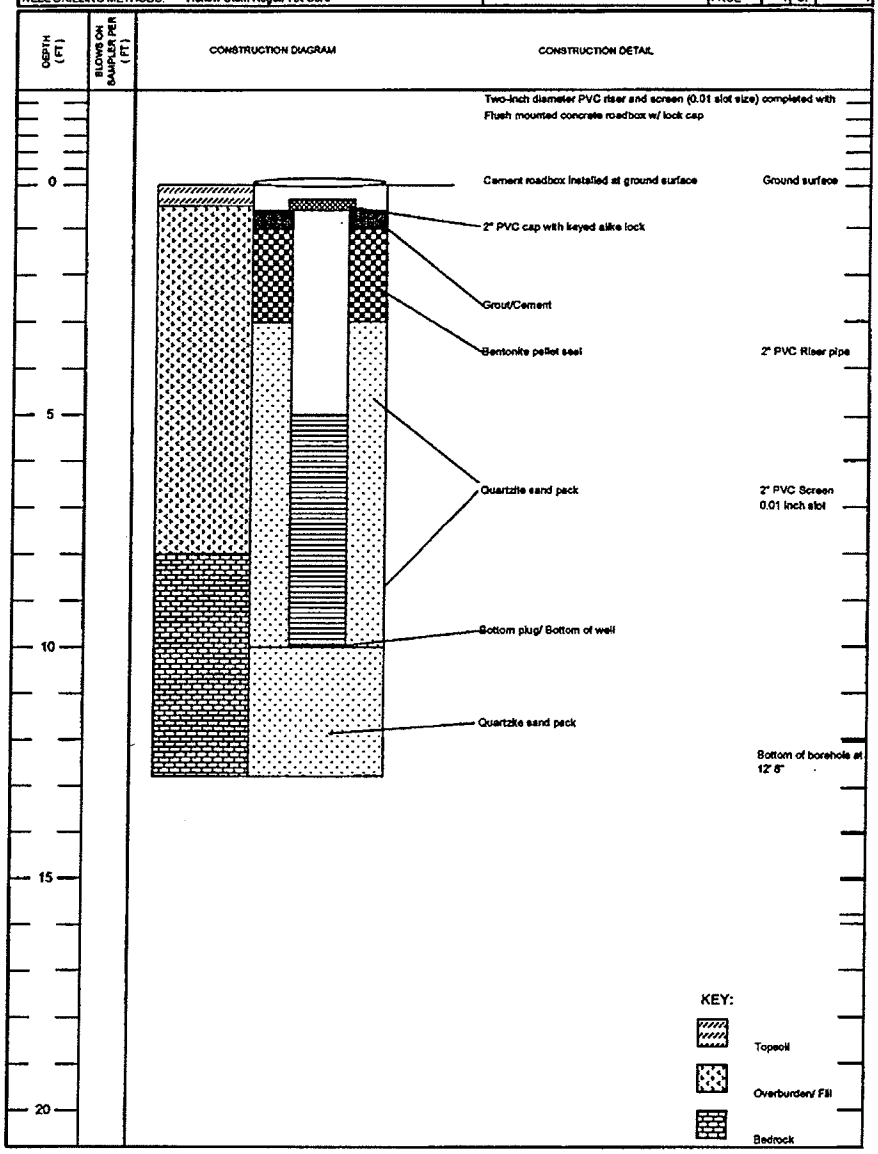
Groundwater Monitoring Well Logs

WELL CONSTRUCTION LOG

PROJECT NAME:	Photech SI/RA
DATE:	1/7/00
DATE COMPLETED:	1/7/00
LOCATION:	Northeast corner of former retention pond
WELL DRILLING METHOD:	Hollow Stem Auger/ HX Core

WELL NUMBER: **PHO-W-07**

PAGE 1 OF 1



NOT TO SCALE

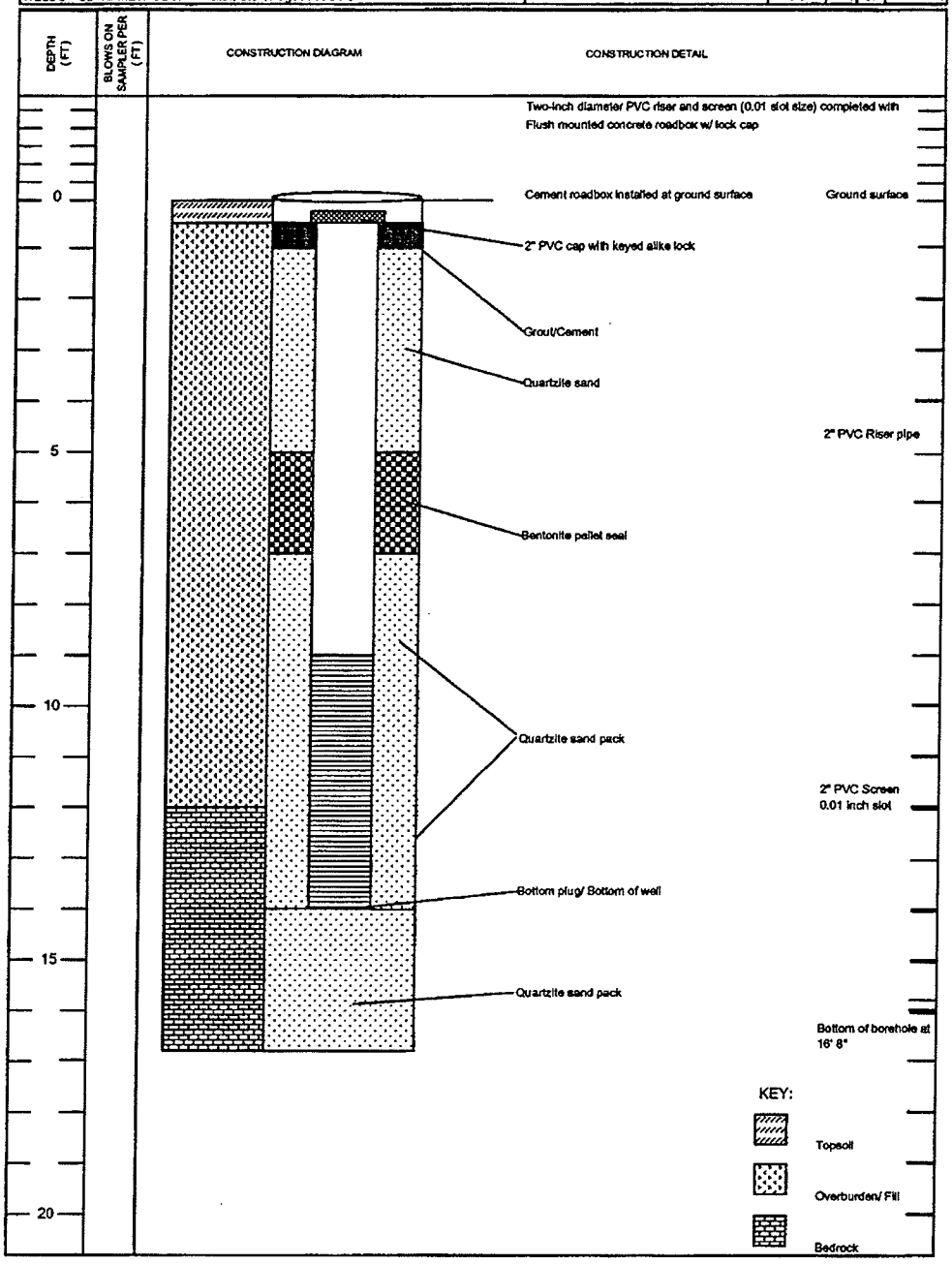
BRG Environmental

WELL CONSTRUCTION LOG

PROJECT NAME:	Photech SI/RA
DATE:	1/6/00
DATE COMPLETED:	1/6/00
LOCATION:	East of Bldg. 17 between retention pond and former fuel oil AST
WELL DRILLING METHODS:	Hollow Stem Auger/ HX Core

WELL NUMBER: **PHO-W-08**

PAGE 1 OF 1



NOT TO SCALE

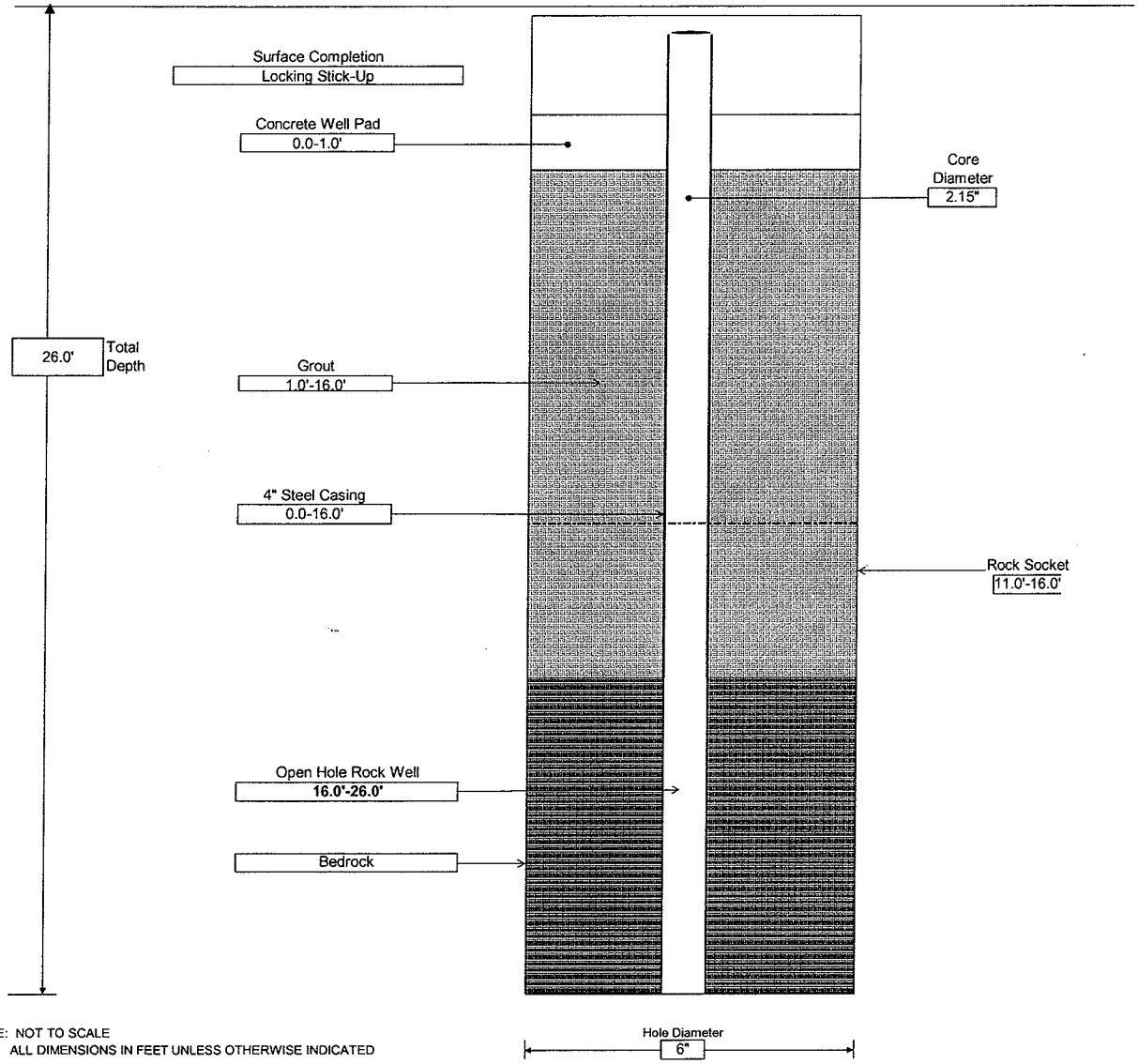
BRG Environmental

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT City Of Rochester Former Photech Imaging Site 1000 Driving Park Avenue, Rochester, New York	BORING: BR-14 SHEET 1 OF 1 JOB # 209288 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER: K. Bush
LABELLA REPRESENTATIVE: Evan Dumrese
BORING LOCATION:
GROUND SURFACE ELEVATION: N/A DATUM: N/A
START DATE: 5/27/2011 END DATE: 6/3/2011

TYPE OF DRILL RIG: Brainard-Kilman Truck Mounted Water Rotary Drill Rig
AUGER SIZE AND TYPE: NX Core (2.15" Core Barrel)
OVERBURDEN SAMPLING METHOD: Direct Push
ROCK DRILLING METHOD: Water Rotary

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS



NOTE: NOT TO SCALE
ALL DIMENSIONS IN FEET UNLESS OTHERWISE INDICATED

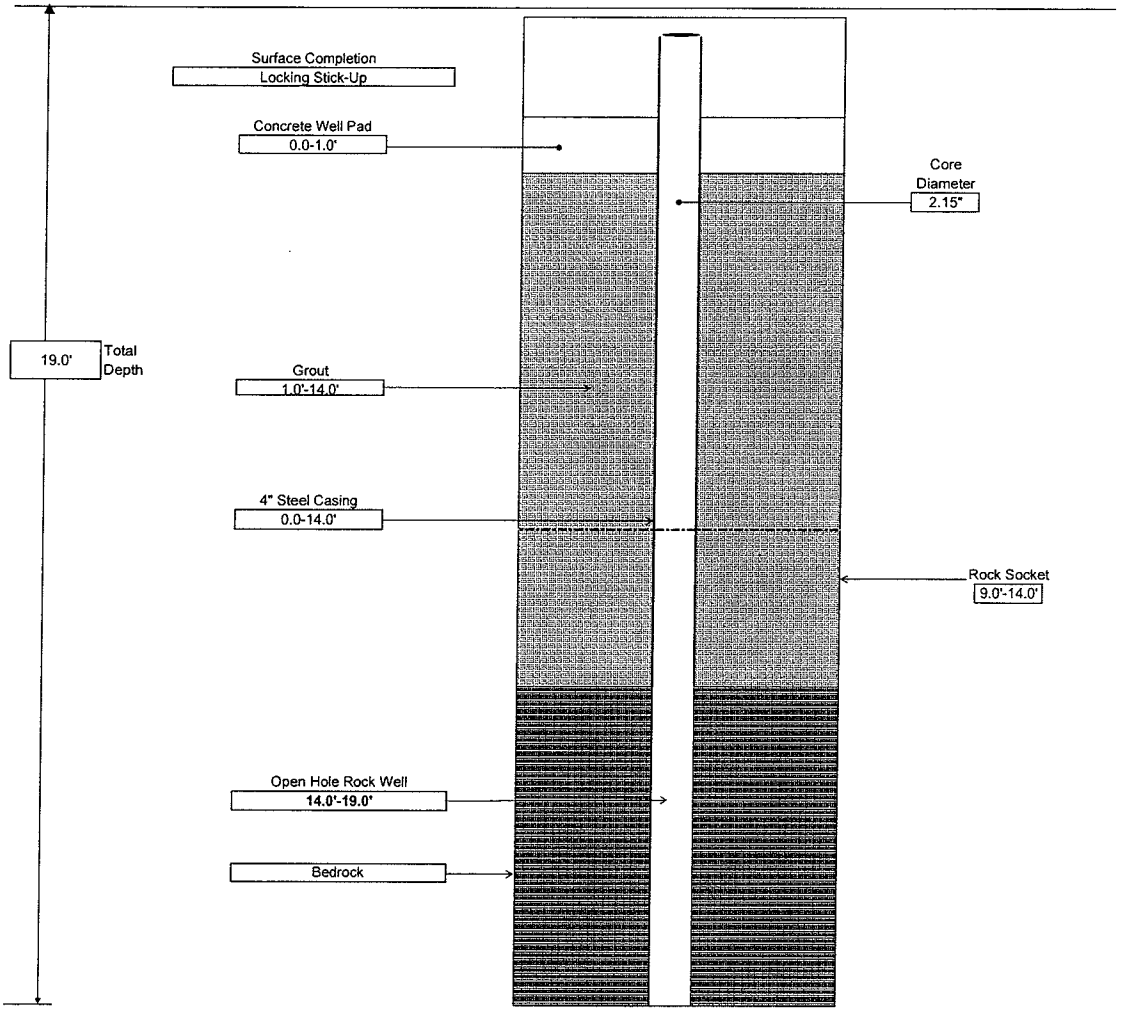
GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT City Of Rochester Former Photech Imaging Site 1000 Driving Park Avenue, Rochester, New York	BORING: BR-15 SHEET 1 OF 1 JOB # 209288 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER: K. Bush
LABELLA REPRESENTATIVE: Evan Dumrese
BORING LOCATION:
GROUND SURFACE ELEVATION: N/A DATUM: N/A
START DATE: 5/31/2011 END DATE: 6/3/2011

TYPE OF DRILL RIG: Brainard-Kilman Truck Mounted Water Rotary Drill Rig
AUGER SIZE AND TYPE: NX Core (2.15" Core Barrel)
OVERBURDEN SAMPLING METHOD: Direct Push
ROCK DRILLING METHOD: Water Rotary

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS



NOTE: NOT TO SCALE
ALL DIMENSIONS IN FEET UNLESS OTHERWISE INDICATED

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

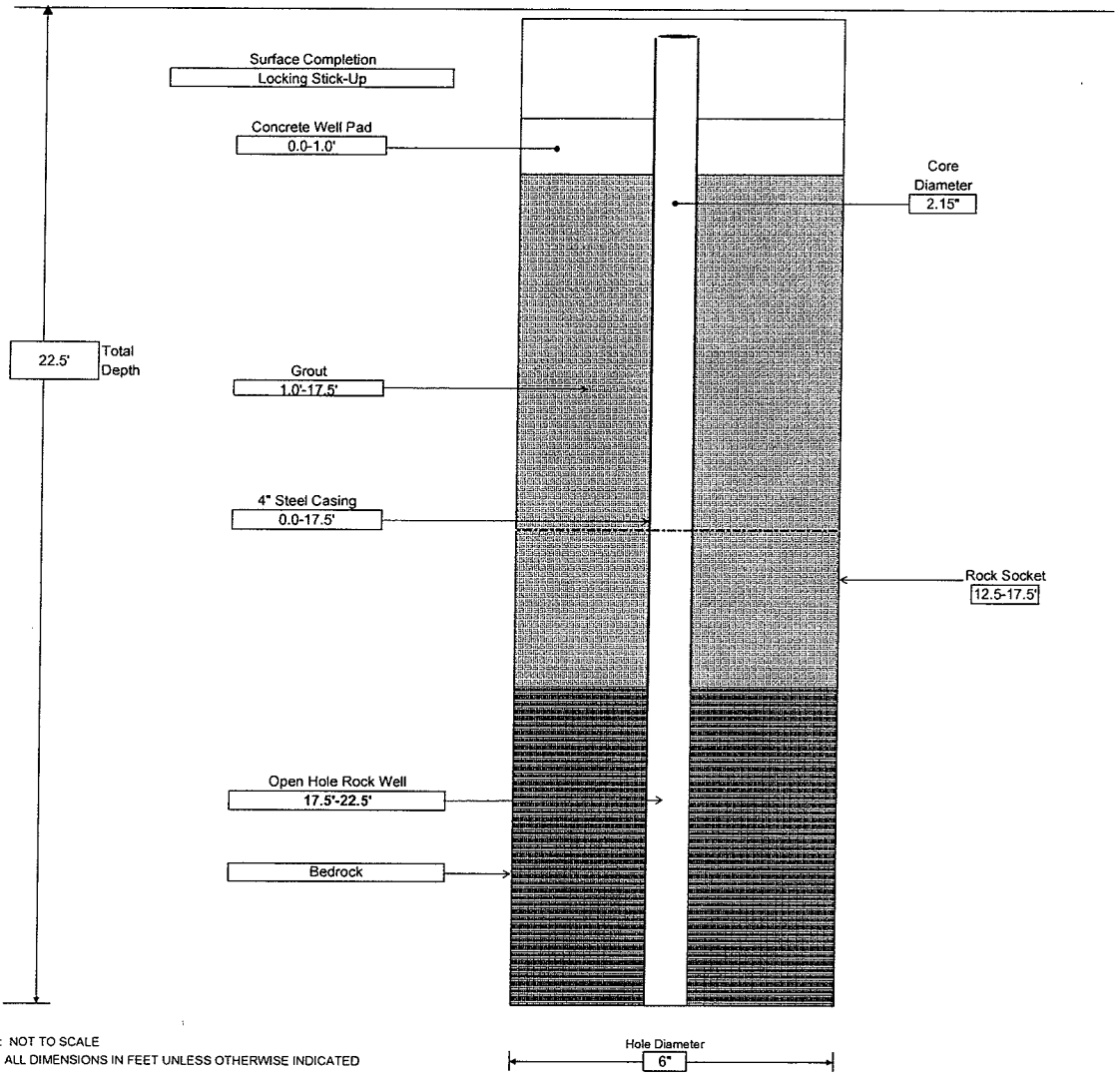
LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT City Of Rochester Former Photech Imaging Site 1000 Driving Park Avenue, Rochester, New York	BORING: BR-16 SHEET 1 OF 1 JOB # 209288 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER: K. Bush
LABELLA REPRESENTATIVE: Evan Dumrese

BORING LOCATION:
GROUND SURFACE ELEVATION: N/A DATUM: N/A
START DATE: 6/1/2011 END DATE: 6/6/2011

TYPE OF DRILL RIG: Brainard-Kilman Truck Mounted Water Rotary Drill Rig
AUGER SIZE AND TYPE: NX Core (2.15" Core Barrel)
OVERBURDEN SAMPLING METHOD: Direct Push
ROCK DRILLING METHOD: Water Rotary

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS



NOTE: NOT TO SCALE
ALL DIMENSIONS IN FEET UNLESS OTHERWISE INDICATED

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

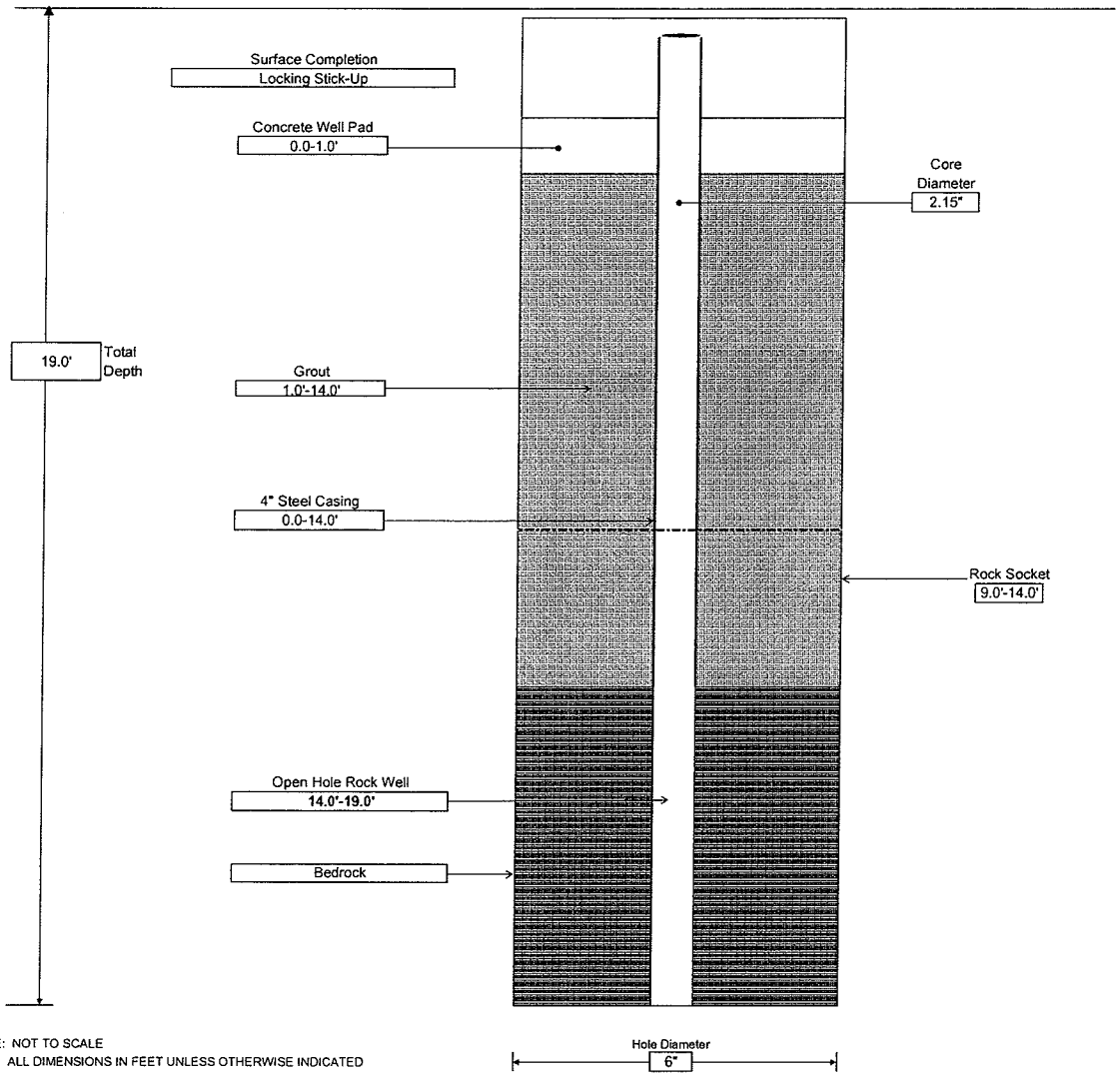
LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT City Of Rochester Former Photech Imaging Site 1000 Driving Park Avenue, Rochester, New York	BORING: BR-17 SHEET 1 OF 1 JOB # 209288 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER: K. Bush
LABELLA REPRESENTATIVE: Evan Dumrese

BORING LOCATION:
GROUND SURFACE ELEVATION: N/A DATUM: N/A
START DATE: 6/2/2011 END DATE: 6/6/2011

TYPE OF DRILL RIG: Brainard-Kilman Truck Mounted Water Rotary Drill Rig
AUGER SIZE AND TYPE: NX Core (2.15" Core Barrel)
OVERBURDEN SAMPLING METHOD: Direct Push
ROCK DRILLING METHOD: Water Rotary

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS



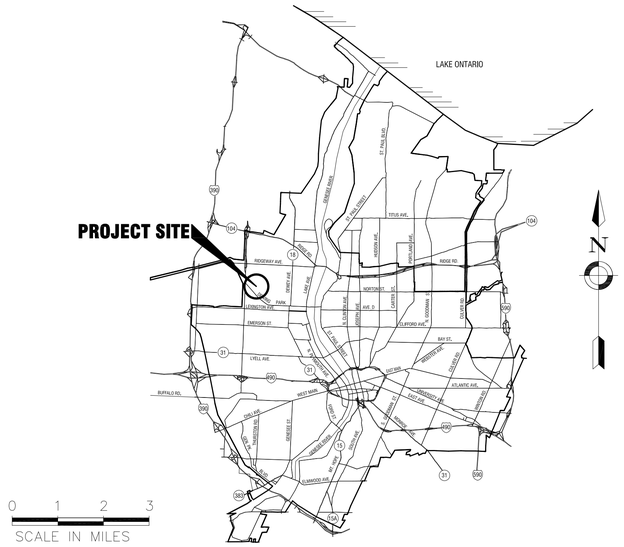
NOTE: NOT TO SCALE
ALL DIMENSIONS IN FEET UNLESS OTHERWISE INDICATED

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

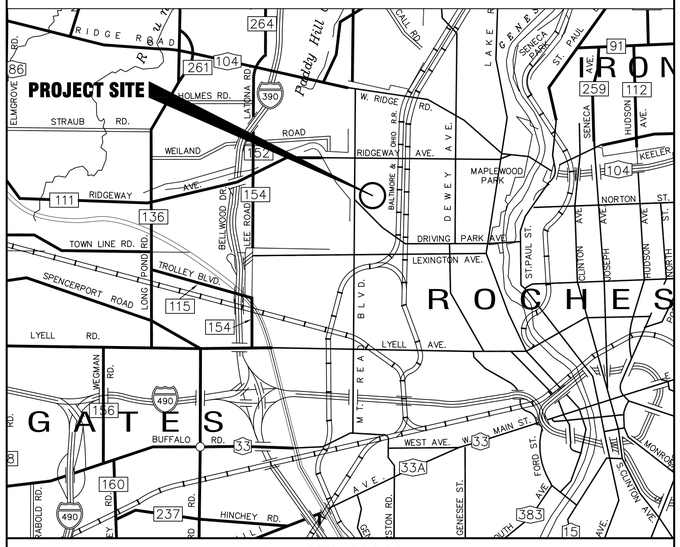
LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 9

Stormwater, Earthwork, and Erosion Control Drawings



GENERAL LOCATION MAP



LOCATION MAP

LABELLA Associates, P.C.
Engineering
Architecture
Environmental
Planning
Relationships. Resources. Results.

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F: (585) 454-3066
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PREPARED BY

FORMER PHOTECH IMAGING SITE

ENVIRONMENTAL CLEANUP PROJECT

1000 DRIVING PARK AVENUE
ROCHESTER, NEW YORK

City of Rochester, NY

Division of Environmental Quality

30 CHURCH STREET, ROOM 300B
ROCHESTER, NEW YORK

PROJECT NO: 209288

AUGUST 2011

ISSUED FOR CONSTRUCTION
AUGUST 2011

CITY OF ROCHESTER
PROJECT #209288

FORMER PHOTECH IMAGING SITE
1000 DRIVING PARK AVE.

LABELLA Associates, P.C.

GENERAL NOTES

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE A SAFE WORK SITE AND TO PROTECT THE PUBLIC, VISITORS AND EMPLOYEES, FROM HARM AS A RESULT OF HIS CONSTRUCTION ACTIVITIES.
2. CONTRACT LIMIT LINES (C.L.L.) ARE CONSIDERED THE PROPERTY LINES UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE OWNERS DESIGNATED REPRESENTATIVE.
3. THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING ABOVE GROUND AND BELOW GROUND UTILITIES, STRUCTURES, AND APPURTENANCES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT GUARANTEED. THE CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, STRUCTURES, AND APPURTENANCES IN THE PATH OF AND ADJACENT TO THE PROPOSED WORK.
4. PROPERTY LINES, AND RIGHT-OF-WAY LINES, AS SHOWN, ARE APPROXIMATE AND ARE INTENDED FOR GENERAL INFORMATION. NO WARRANTY IS EXPRESSED OR IMPLIED TO THEIR ACCURACY.
5. THE OWNERS OF THE VARIOUS UTILITIES WITHIN THE RIGHT-OF-WAY OR ADJACENT EASEMENTS, IF ANY, WILL FIELD LOCATE AND MARK THE LOCATION OF THEIR FACILITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE THEIR FACILITIES.
6. THE CONTRACTOR ALONE SHALL BE RESPONSIBLE TO LOCATE UTILITIES OUTSIDE THE RIGHT-OF-WAY.
7. SITE DRAINAGE, INCLUDING THE PROJECT SITE AND ADJACENT PRIVATE AND PUBLIC ROADWAYS, DRIVES, PARKING AREAS OR PROPERTIES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
8. CONTRACTOR STAGING AREAS AND CONSTRUCTION ENTRANCE LOCATIONS SHALL BE COORDINATED WITH OWNERS DESIGNATED REPRESENTATIVE PRIOR TO START OF CONSTRUCTION. REFER TO R AWP FOR ADDITIONAL INFORMATION AND DETAILS. ALL DISTURBED AREAS SHALL BE RESTORED.
9. THE CONTRACTOR IS RESPONSIBLE FOR PRESERVING AND PROTECTING FROM DAMAGE ALL SIGNS, SURVEY MONUMENTS, LIGHT POLES, UTILITY POLES AND OTHER STREET APPURTENANCES WITHIN THE RIGHT-OF- WAY AND WITHIN EASEMENTS EXISTING OR OBTAINED FOR THE PROJECT.
10. THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXISTING UTILITIES DESIGNATED TO REMAIN FOR THE DURATION OF THE CONTRACT.
11. ANY SITE AMENITY, UTILITY, STREET APPURTENANCE, OR OTHER ITEM WHICH BECOMES DAMAGED AS A RESULT OF THE CONTRACTORS OPERATIONS SHALL BE REPAIRED OR REPLACED IN-KIND BY THE CONSTRACTOR AS DETERMINED BY THE CONSTRUCTION MANAGER AND AT NO ADDITIONAL COST TO THE OWNER.
12. THE CONTRACTOR SHALL PROTECT AND PRESERVE ALL RIGHT-OF-WAY MONUMENTS AND PROPERTY CORNER MARKERS TO REMAIN. ALL RIGHT-OF-WAY MONUMENTS AND PROPERTY CORNER MARKERS DISTURBED BY THE CONTRACTOR SHALL BE REPLACED BY A NYS LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
13. THE CONTRACTOR SHALL RESEARCH, SECURE AND PAY FOR ALL PERMITS, FEES AND SIMILAR ITEMS AS NEEDED TO COMPLETE THE WORK.

WASTE/REMOVAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR PROMPT REMOVAL AND PROPER DISPOSAL OFF-SITE OF ALL MATERIALS NOT OTHERWISE DESIGNATED TO BE STORED, REUSED, RELOCATED, RECYCLED, OR TURNED OVER TO THE OWNER.
2. ALL DISPOSALS SHALL BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS REQUIRED AND THE COST OF DISPOSAL.

SPECIAL NOTES

1. NO MATERIALS SHALL BE REMOVED FROM THE SITE WITHOUT THE WRITTEN APPROVAL OF THE OWNERS DESIGNATED REPRESENTATIVE. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION WASTE MANAGEMENT PLAN.
2. NO SOILS, SUB-GRADE, STRUCTURES, SLABS OR PAVEMENTS IN CONTACT WITH ON-SITE SOILS SHALL BE REMOVED FROM THE SITE WITHOUT THE WRITTEN APPROVAL OF THE OWNERS DESIGNATED REPRESENTATIVE AND THE ENVIRONMENTAL CONSULTANT. REFER TO PROJECT MANUAL FOR ADDITIONAL INFORMATION.
3. CONTROL OF DUST ORIGINATING FROM THE PROJECT SITE OR AS A RESULT OF CONTRACTOR OPERATIONS IS CONSIDERED A CRITICAL RESPONSIBILITY OF THE CONTRACTOR, REFER TO BID DOCUMENTS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

EXCAVATION/GRADING NOTES

1. THE CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF OSHA, AND ANY OTHER AGENCY HAVING JURISDICTION WITH REGARD TO SAFETY PRECAUTIONS WITH TRENCHING OPERATIONS. THE REQUIREMENTS SET FORTH HEREIN ARE INTENDED TO SUPPLEMENT REQUIREMENTS ESTABLISHED BY THESE AGENCIES. IN THE CASE OF A CONFLICT BETWEEN REQUIREMENTS OF OTHER JURISDICTIONAL AGENCIES AND THESE DOCUMENTS, THE MORE STRINGENT REQUIREMENT ON CONTRACTOR SHALL APPLY.
2. EXCAVATED OR OTHER MATERIALS SHALL BE STORED A MINIMUM OF 2 FEET FROM THE EDGE OF TRENCH.
3. WALLS OR FACES OF TRENCHES 5 FEET DEEP OR GREATER SHALL BE GUARDED BY A SHORING SYSTEM, SLOPING OF GROUND OR OTHER MEANS TO PREVENT CAVE-IN.
4. TRENCHES 4 FEET DEEP OR MORE SHALL HAVE AN ADEQUATE MEANS OF EXIT, SUCH AS LADDERS OR STEPS, LOCATED NO MORE THAN 25 FEET OF LATERAL TRAVEL.
5. DAILY INSPECTIONS OF EXCAVATIONS SHALL BE MADE BY AN AUTHORIZED, COMPETENT REPRESENTATIVE OF THE CONTRACTOR.
6. ALL EMPLOYEES SHALL BE INSTRUCTED TO RECOGNIZE AND AVOID THE HAZARDS ASSOCIATED WITH UNDERGROUND CONSTRUCTION ACTIVITIES.
7. FRESH AIR SHALL BE SUPPLIED TO ALL UNDERGROUND AND ENCLOSED SPACE WORK AREAS.
8. SHEETING, IF REQUIRED DURING CONSTRUCTION, IS CONSIDERED TO BE PART OF THIS CONTRACT AND SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
9. ALL TRENCHES THROUGH PAVEMENT WITHIN THE CITY R.O.W. SHALL BE SAW CUT PRIOR TO EXCAVATION AND AGAIN PRIOR TO PAVEMENT RESTORATION.
10. THE CONTRACTOR SHALL DEWATER ALL EXCAVATIONS TO PREVENT THE INTRODUCTION OF GROUNDWATER INTO THE TRENCHES/EXCAVATIONS. PROVIDE ALL EQUIPMENT NECESSARY TO MAINTAIN THE GROUNDWATER LEVEL AS NECESSARY. ALL DEWATERED LIQUIDS SHALL BE SAMPLED AND APPROVED BY THE ENVIRONMENTAL CONSULTANT PRIOR TO DISCHARGE TO THE SEWER OR SENT OFF-SITE FOR DISPOSAL.
11. THE CONTRACTOR SHALL PROTECT ALL EXISTING MONITORING WELLS.

SANITARY AND STORM SEWER NOTES

1. TAKE APPROPRIATE MEASURES TO PREVENT DIRT, DEBRIS, AND CONSTRUCTION MATERIALS FROM ENTERING RPWD SEWERS, LATERALS, CATCH BASINS, MANHOLES, AND APPURTENANCES DURING CONSTRUCTION. IMMEDIATELY REMOVE ANY SUCH MATERIALS FROM RPWD SEWERS AND APPURTENANCES AND REPAIR ANY DAMAGE CAUSED BY SUCH MATERIALS AT NO COST TO THE OWNER.
2. ALL OLD REMOVED SEWER MANHOLE FRAMES AND COVERS AND CATCH BASIN GRATES SHALL BECOME THE PROPERTY OF CONTRACTOR. THE CONTRACTOR SHALL PROPERLY DISPOSE OF SUCH FRAMES, COVERS AND GRATES. IN ACCORDANCE WITH THE BID DOCUMENTS.
3. SANITARY/STORM/COMBINATION SEWER LATERAL(S) AND APPURTENANCES WITHIN PUBLIC ROW AND RPWD EASEMENTS SHALL BE PROTECTED CONFORMANCE WITH THE REQUIREMENTS OF THE ROCHESTER PURE WATERS DISTRICT.

NO.	REVISION	BY	DATE
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:			
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:			
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It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor to alter in any way any architectural, engineering, or land surveying plan or drawing. If the surveyor is altered, the altering architect, engineer, or land surveyor shall affix to the item altered his seal and notation "Altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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ROCHESTER, NY 14614
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F: (585) 454-3066
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PROJECT/CLIENT

PHOTECH
1000 DRIVING PARK
ROCHESTER, NY 14613

CITY OF ROCHESTER
30 CHURCH STREET
ROCHESTER, NY 14614-1290

DRAWING TITLE

GENERAL NOTES

ISSUED FOR:
CONSTRUCTION

DATE: AUGUST 15, 2011

DESIGNED BY: B.S.B.
DRAWN BY: B.S.B.
REVIEWED BY: #

PLOTTED: Friday, August 19, 2011 AT 3:29:39 PM
J:\Projects\Photech\209288\Drawings\Civil\2011-08-15.dwg
Plotted by: Brandon Bellenberg

PROJECT/DRAWING NUMBER

209288

C-0.0

GENERAL NOTES

1. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATIONS AND PRIOR CONSTRUCTION DOCUMENTS WHEN AVAILABLE AND ARE NOT GUARANTEED, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BID. NO ALLOWANCE WILL BE MADE FOR ADDITIONAL COSTS DUE TO CONTRACTORS FAILURE TO VERIFY EXISTING CONDITIONS AND DIMENSIONS.
2. WHEN EXISTING CONSTRUCTION WHICH IS TO REMAIN IS DAMAGED DURING THE COURSE OF CONSTRUCTION AS A RESULT OF CONTRACTORS WORK, IT SHALL BE REPAIRED AND/OR REPLACED WITH SIMILAR OR LIKE MATERIALS AS MUCH AS POSSIBLE, SUBJECT TO OWNERS APPROVAL.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL TO NOTIFY DIG SAFELY NEW YORK AT 1-800-962-7962 TO REQUEST UTILITY STAKEOUT OF ALL PUBLIC UTILITIES.
4. ALL WORK INDICATED ON THIS DRAWING SHALL BE DONE UNDER THE GENERAL CONSTRUCTION CONTRACT UNLESS OTHERWISE NOTED.
5. PROTECT EXISTING UTILITIES TO REMAIN. ANY LATERALS ENCOUNTERED DURING EXCAVATIONS, WHICH ARE NOT DEPICTED ON THE CONSTRUCTION DOCUMENTS, SHALL BE REPORTED TO THE OWNERS DESIGNATED REPRESENTATIVE AND LABELLA ASSOCIATES.

KEY NOTES:

1. BASED ON SEQUENCE OF THE RECORD DRAWINGS, THESE SIX (6) LATERALS WERE INSTALLED IN 1964 WHEN DRIVING PARK WAS RECONSTRUCTED. THESE LATERALS APPEAR TO STOP AT THE RIGHT-OF-WAY AND WERE FOR FUTURE DEVELOPMENT. BASED ON THIS, THE LATERALS SHOULD BE CAPPED FROM THE ORIGINAL CONSTRUCTION AND WERE NEVER EXTENDED INTO THE SITE. NO FURTHER ACTION REQUIRED.
2. EXISTING 1" TEMPORARY WATER SERVICE TO BE ABANDONED, FEE PAID TO CITY WATER BUREAU ON 11/3/2009 $1,100. CONTRACTOR TO COORDINATE WITH CITY WATER BUREAU, FRED HODGE 428-6464. NOTE: THE 6" AND 10" SERVICES WERE REMOVED BY CITY WATER BUREAU IN FEBRUARY 2010. SERVICES HAVE BEEN DISCONNECTED FROM MAIN IN DRIVING PARK. CONTRACTORS REMOVAL LIMITS ARE EXISTING FENCE LINE ALONG DRIVING PARK, PLUG ENDS TO REMAIN.
3. UTILITY CUT IN DRIVING PARK AVENUE FOR REMOVAL OF EXISTING CONBINED SEWER AND INSTALLATION OF NEW PVC COMBINED SEWER.
4. EXISTING MANHOLE TO REMAIN, ABANDON EXISTING 15" RCP STORM SEWER EXTENDING NORTHWARDS INSIDE STRUCTURE WITH BULKHEAD. EXISTING PIPING TOWARDS DRIVING PARK AVENUE TO REMAIN FOR FUTURE DEVELOPMENT.
5. REMOVE ALL PIPING SYSTEMS AND STRUCTURES IDENTIFIED IN CONTRACT DOCUMENTS, BACKFILL AS SPECIFIED IN THE EARTHWORK SPECIFICATIONS. REFER TO REMEDIAL ACTION WORK PLAN FOR DESCRIPTION OF EXISTING SUBSURFACE UTILITIES TO BE REMOVED.
6. REMOVE ALL EXISTING ASPHALTIC PAVEMENT AND CONCRETE PAD, CRUSHER RUN SUBBASE TO REMAIN, REGRADE AND COMPACT FINAL SURFACE FOR UNIFORM FINISH.

RECORD DRAWING INCLUDE:

1. 20 SCALE SITE PLAN FOR SILVER RECOVERY AND LATERAL IMPROVEMENTS.
   DATED 1983. *SAME INFORMATION AS 1981 DRAWINGS*
2. ROCHESTER FILM COMPANY "BEST RECORD INFORMATION"
   SEWER EXTENSION FORMER BELL AND HOWELL CO.
   BY: NORTHRUP, KAELBER, KOFF ARCHITECTS
   DATED MAY 8, 1981
   DRAWING SK-A2
   APPROVED BY RPWD JUNE 19, 1981
3. BELL AND HOWELL CO. - SEWER NETWORK
   DRIVING PARK AVENUE
   BY: SCHULTZ & ACKERMAN SURVEYORS
   DATED APRIL 16, 1965
4. ROCHESTER ENGINEERING DEPARTMENT
   DRIVING PARK AVENUE EXPANSION (NEWBURY TO MT. READ)
   ASPHALT PAVEMENT, STONE CURB AND SEWERS
   DATED: OCTOBER 13, 1964
   DRAWINGS 1/5, 2/5 AND 3/5
5. ROCHESTER ENGINEERING
   DRIVING PARK COMBINED SEWER, TO LEXINGTON AVE. TUNNEL
   DATED JULY 13, 1955
   DRAWING 55-5

15 0 15 30 45 60'
1" = 30'
TRUE NORTH AT 78°34'35"00"
MERIDIAN OF WEST LONGITUDE
NAD83

DRIVING PARK AVENUE (70' ROW)

AREA OF CONCERN 1A
35 CUBIC YARDS

AREA OF CONCERN 2
700 CUBIC YARDS

AREA OF CONCERN 3A
1,750 CUBIC YARDS

AREA OF CONCERN 4B
11 CUBIC YARDS

AREA OF CONCERN 7
370 CUBIC YARDS

AREA OF CONCERN 13
270 CUBIC YARDS
SOUTH DRAINAGE SWALE

ROCHESTER PURE WATERS DISTRICT

NOW OR FORMERLY
WILLIAM FINNERY
TA NO. 90.71-1-2
970 DRIVING PARK AVENUE

NOW OR FORMERLY
DORREN FAMILY LLC
TA NO. 90.63-1-10.3
205 LAGRANGE AVENUE

NOW OR FORMERLY
LSON ASSOCIATES
TA NO. 90.63-1-10.3
211 LAGRANGE AVENUE

NO.	REVISION	BY	DATE

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PROJECT/CLIENT
PHOTECH
1000 DRIVING PARK
ROCHESTER, NY 14613
CITY OF ROCHESTER
30 CHURCH STREET
ROCHESTER, NY 14614-1290

DRAWING TITLE
DEMOLITION PLAN

DESIGNED BY: B.S.B.
DRAWN BY: B.S.B.
REVIEWED BY: #
PLOTTED: Wed, August 15, 2012 @ 11:25:04 AM

ISSUED FOR
CONSTRUCTION
DATE: AUGUST 15, 2011
T:\Rochester - City\209288 PHOTECH\Drawings\Cad\2011-08-15.dwg

PROJECT/DRAWING NUMBER
209288

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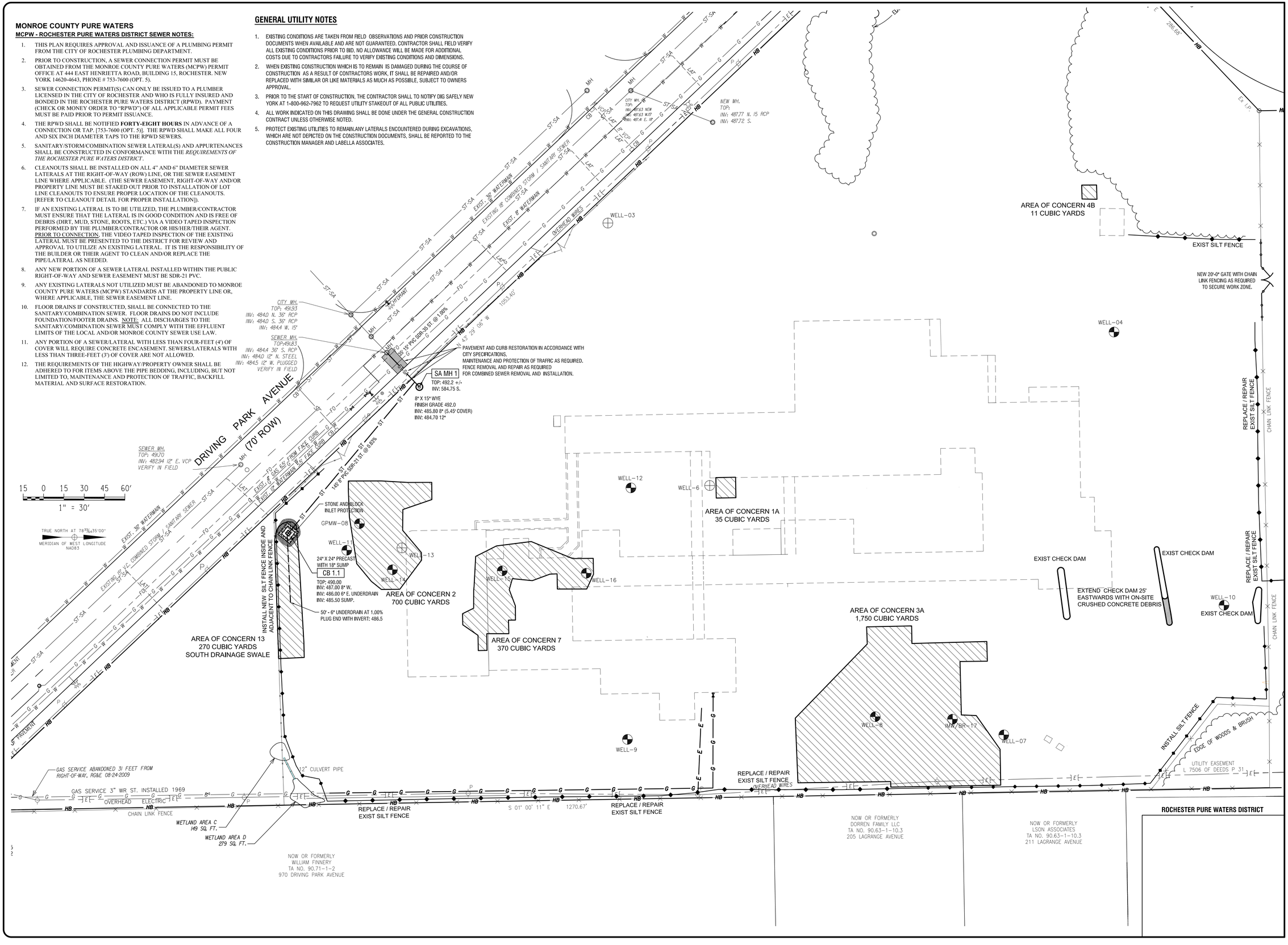
MONROE COUNTY PURE WATERS

MCPW - ROCHESTER PURE WATERS DISTRICT SEWER NOTES:

1. THIS PLAN REQUIRES APPROVAL AND ISSUANCE OF A PLUMBING PERMIT FROM THE CITY OF ROCHESTER PLUMBING DEPARTMENT.
2. PRIOR TO CONSTRUCTION, A SEWER CONNECTION PERMIT MUST BE OBTAINED FROM THE MONROE COUNTY PURE WATERS (MCPW) PERMIT OFFICE AT 444 EAST HENRIETTA ROAD, BUILDING 15, ROCHESTER. NEW YORK 14620-4643, PHONE # 753-7600 (OPT. 5).
3. SEWER CONNECTION PERMIT(S) CAN ONLY BE ISSUED TO A PLUMBER LICENSED IN THE CITY OF ROCHESTER AND WHO IS FULLY INSURED AND BONDED IN THE ROCHESTER PURE WATERS DISTRICT (RPWD). PAYMENT (CHECK OR MONEY ORDER TO "RPWD") OF ALL APPLICABLE PERMIT FEES MUST BE PAID PRIOR TO PERMIT ISSUANCE.
4. THE RPWD SHALL BE NOTIFIED **FORTY-EIGHT HOURS** IN ADVANCE OF A CONNECTION OR TAP. [753-7600 (OPT. 5)]. THE RPWD SHALL MAKE ALL FOUR AND SIX INCH DIAMETER TAPS TO THE RPWD SEWERS.
5. SANITARY/STORM/COMBINATION SEWER LATERAL(S) AND APPURTENANCES SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE *REQUIREMENTS OF THE ROCHESTER PURE WATERS DISTRICT*.
6. CLEANOUTS SHALL BE INSTALLED ON ALL 4" AND 6" DIAMETER SEWER LATERALS AT THE RIGHT-OF-WAY (ROW) LINE, OR THE SEWER EASEMENT LINE WHERE APPLICABLE. (THE SEWER EASEMENT, RIGHT-OF-WAY AND/OR PROPERTY LINE MUST BE STAKED OUT PRIOR TO INSTALLATION OF LOT LINE CLEANOUTS TO ENSURE PROPER LOCATION OF THE CLEANOUTS. [REFER TO CLEANOUT DETAIL FOR PROPER INSTALLATION]).
7. IF AN EXISTING LATERAL IS TO BE UTILIZED, THE PLUMBER/CONTRACTOR MUST ENSURE THAT THE LATERAL IS IN GOOD CONDITION AND IS FREE OF DEBRIS (DIRT, MUD, STONE, ROOTS, ETC.) VIA A VIDEO TAPED INSPECTION PERFORMED BY THE PLUMBER/CONTRACTOR OR HIS/HER/THEIR AGENT. PRIOR TO CONNECTION, THE VIDEO TAPED INSPECTION OF THE EXISTING LATERAL MUST BE PRESENTED TO THE DISTRICT FOR REVIEW AND APPROVAL TO UTILIZE AN EXISTING LATERAL. IT IS THE RESPONSIBILITY OF THE BUILDER OR THEIR AGENT TO CLEAN AND/OR REPLACE THE PIPE/LATERAL AS NEEDED.
8. ANY NEW PORTION OF A SEWER LATERAL INSTALLED WITHIN THE PUBLIC RIGHT-OF-WAY AND SEWER EASEMENT MUST BE SDR-21 PVC.
9. ANY EXISTING LATERALS NOT UTILIZED MUST BE ABANDONED TO MONROE COUNTY PURE WATERS (MCPW) STANDARDS AT THE PROPERTY LINE OR, WHERE APPLICABLE, THE SEWER EASEMENT LINE.
10. FLOOR DRAINS IF CONSTRUCTED, SHALL BE CONNECTED TO THE SANITARY/COMBINATION SEWER. FLOOR DRAINS DO NOT INCLUDE FOUNDATION/FOOTER DRAINS. NOTE: ALL DISCHARGES TO THE SANITARY/COMBINATION SEWER MUST COMPLY WITH THE EFFLUENT LIMITS OF THE LOCAL AND/OR MONROE COUNTY SEWER USE LAW.
11. ANY PORTION OF A SEWER/LATERAL WITH LESS THAN FOUR-FEET (4') OF COVER WILL REQUIRE CONCRETE ENCASEMENT. SEWERS/LATERALS WITH LESS THAN THREE-FEET (3') OF COVER ARE NOT ALLOWED.
12. THE REQUIREMENTS OF THE HIGHWAY/PROPERTY OWNER SHALL BE ADHERED TO FOR ITEMS ABOVE THE PIPE BEDDING, INCLUDING, BUT NOT LIMITED TO, MAINTENANCE AND PROTECTION OF TRAFFIC, BACKFILL MATERIAL AND SURFACE RESTORATION.

GENERAL UTILITY NOTES

1. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATIONS AND PRIOR CONSTRUCTION DOCUMENTS WHEN AVAILABLE AND ARE NOT GUARANTEED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BID. NO ALLOWANCE WILL BE MADE FOR ADDITIONAL COSTS DUE TO CONTRACTORS FAILURE TO VERIFY EXISTING CONDITIONS AND DIMENSIONS.
2. WHEN EXISTING CONSTRUCTION WHICH IS TO REMAIN IS DAMAGED DURING THE COURSE OF CONSTRUCTION AS A RESULT OF CONTRACTORS WORK, IT SHALL BE REPAIRED AND/OR REPLACED WITH SIMILAR OR LIKE MATERIALS AS MUCH AS POSSIBLE, SUBJECT TO OWNERS APPROVAL.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL TO NOTIFY DIG SAFELY NEW YORK AT 1-800-962-7962 TO REQUEST UTILITY STAKEOUT OF ALL PUBLIC UTILITIES.
4. ALL WORK INDICATED ON THIS DRAWING SHALL BE DONE UNDER THE GENERAL CONSTRUCTION CONTRACT UNLESS OTHERWISE NOTED.
5. PROTECT EXISTING UTILITIES TO REMAIN.ANY LATERALS ENCOUNTERED DURING EXCAVATIONS, WHICH ARE NOT DEPICTED ON THE CONSTRUCTION DOCUMENTS, SHALL BE REPORTED TO THE CONSTRUCTION MANAGER AND LABELLA ASSOCIATES.



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PROJECT/CLIENT

PHOTECH
1000 DRIVING PARK
ROCHESTER, NY 14613

CITY OF ROCHESTER
30 CHURCH STREET
ROCHESTER, NY 14614-1290

DRAWING TITLE

SITE AND UTILITY PLAN

ISSUED FOR:
CONSTRUCTION

DATE: AUGUST 15, 2011

DESIGNED BY: B.S.B.
DRAWN BY: B.S.B.
REVIEWED BY: #

As Stamped on Plans

PLOTTED: Friday, August 19, 2011 - 11:03:00

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Layout: C-2.0 Model: Drawing

PROJECT/DRAWING NUMBER

209288

C-2.0

EROSION AND SEDIMENTATION CONTROL NOTES

1. ALL EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, AND LOCAL GOVERNING SOIL AND WATER CONSERVATION AGENCY RECOMMENDATIONS AND STANDARDS. CONTRACTOR SHALL SUBMIT PROPOSED EROSION CONTROL PLAN INCLUDING SEQUENCING OF WORK TO THE ARCHITECT/ENGINEER FOR REVIEW PRIOR TO START OF WORK.
2. UTILIZE CONSTRUCTION METHODS/TECHNIQUES, WHICH WILL LIMIT THE EXPOSED EARTHEN AREAS AND MINIMIZE THE EFFECT OF EARTH DISTURBANCE ACTIVITIES ON SOIL EROSION.
3. ALL SEDIMENTATION BARRIERS AND OTHER TEMPORARY OR PERMANENT MEASURES SHALL BE IN PLACE PRIOR TO THE START OF CONSTRUCTION, PLANS SHOW THE SUGGESTED MINIMUM MEASURES REQUIRED.
4. REMOVAL OF ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE COMPLETED AT THE APPROVAL OF THE OWNER AND ENGINEER/OWNERS DESIGNATED REPRESENTATIVE. THE COST OF REMOVING THESE MEASURES SHALL ALSO BE INCLUDED IN THE PRICE BID.
5. AREAS OF EROSION AND SEDIMENTATION CONTROL MEASURES DEFINED ON THE PLANS ARE NOT ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR UTILIZING EROSION AND SEDIMENTATION CONTROL TECHNIQUES IN ALL AREAS OF CONSTRUCTION WHERE DISTURBANCE TO EXISTING CONDITIONS IS REQUIRED. THESE TECHNIQUES SHALL MEET THE REQUIREMENTS OF THE NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, AND LOCAL GOVERNING SOIL AND WATER CONSERVATION AGENCY RECOMMENDATIONS.
6. FOR THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL PROTECT ALL ON-SITE, ADJACENT AND/OR DOWNSTREAM STORM/SANITARY SEWERS, AND/OR OTHER WATER COURSES FROM CONTAMINATION BY WATER BORNE SILTS, SEDIMENTS, FUELS, SOLVENTS, LUBRICANTS OR OTHER POLLUTANTS ORIGINATING FROM ANY WORK DONE ON, OR IN SUPPORT OF THIS PROJECT.
7. DURING CONSTRUCTION NO WET OR FRESH CONCRETE OR LEACHATE SHALL BE ALLOWED TO ESCAPE INTO STORM/SANITARY SEWERS, DITCHES OR OTHER WATERS OF NEW YORK STATE, NOR SHALL WASHINGS FROM CONCRETE TRUCKS, MIXERS OR OTHER DEVICES BE ALLOWED TO ENTER ANY STORM/SANITARY SEWERS, DITCHES, RIVERS, OR WATER COURSES.
8. ALL EXCAVATED OR IMPORTED EARTHEN STOCKPILES SHALL BE SUITABLY STABILIZED AND PROTECTED BY SILT FENCE SO THAT IT CANNOT REASONABLY ENTER ANY WATER BODY, OR STORM OR SANITARY SEWER.
9. ALL METHODS AND EQUIPMENT PROPOSED BY THE CONTRACTOR TO ACCOMPLISH THE WORK FOR EROSION AND POLLUTION CONTROL SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER / OWNERS DESIGNATED REPRESENTATIVE.
10. THE CONTRACTOR SHALL BE REQUIRED TO TREAT TRAVELED AREAS TO CONTROL DUST. WATER SHALL BE APPLIED TO SUCH TRAVELED AREAS AS THE ENGINEER OR OWNER'S DESIGNATED REPRESENTATIVE MAY DESIGNATE, THE NUMBER OF APPLICATIONS AND THE AMOUNT OF WATER SHALL BE BASED UPON FIELD AND WEATHER CONDITIONS.
11. ALL AREAS OF SOIL DISTURBANCE RESULTING FROM THIS PROJECT WHICH WILL NOT BE SUBJECT TO FURTHER EARTHWORK OR CONSTRUCTION ACTIVITIES SHALL BE PERMANENTLY SEEDED TO ESTABLISH GRASS, AND MULCHED WITH HAY OR STRAW WITHIN ONE WEEK OF FINAL DISTURBANCE. MULCH SHALL BE MAINTAINED UNTIL A SUITABLE VEGETATIVE COVER IS ESTABLISHED.
12. ALL DISTURBED AREAS NOT TO BE WORKED WITHIN 21 DAYS SHALL BE TEMPORARILY SEEDED WITHIN 14 DAYS.
13. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE PERIOD OF CONSTRUCTION AND UNTIL VEGETATION, OR OTHER MEANS OF SOIL STABILIZATION, IS ESTABLISHED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. REQUIRED MAINTENANCE INCLUDES, BUT IS NOT LIMITED TO, THE INSPECTION AND REPAIR OF ALL FACILITIES, THE REMOVAL OF ACCUMULATED SEDIMENT FROM SILT FENCES AND SEDIMENT TRAPS, AND THE REPLACEMENT OF ANY MATERIALS OR MEASURES THAT MAY BE REQUIRED TO FACILITATE REVEGETATION OR THE CORRECT OPERATION OF THE MEASURES.
14. THE CONTRACTOR SHALL MAINTAIN SITE CONDITIONS WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS OR INTERFERE WITH THE OPERATION OF THE EXISTING FACILITY. THE CONTRACTOR SHALL KEEP CLEAN AND FREE ALL SIDEWALKS, STREETS, DRIVES, AND OTHER PAVEMENTS FROM DIRT, MUD, STONES AND OTHER HAULED MATERIALS AS A RESULT OF HIS WORK.

SEQUENCE OF OPERATIONS:

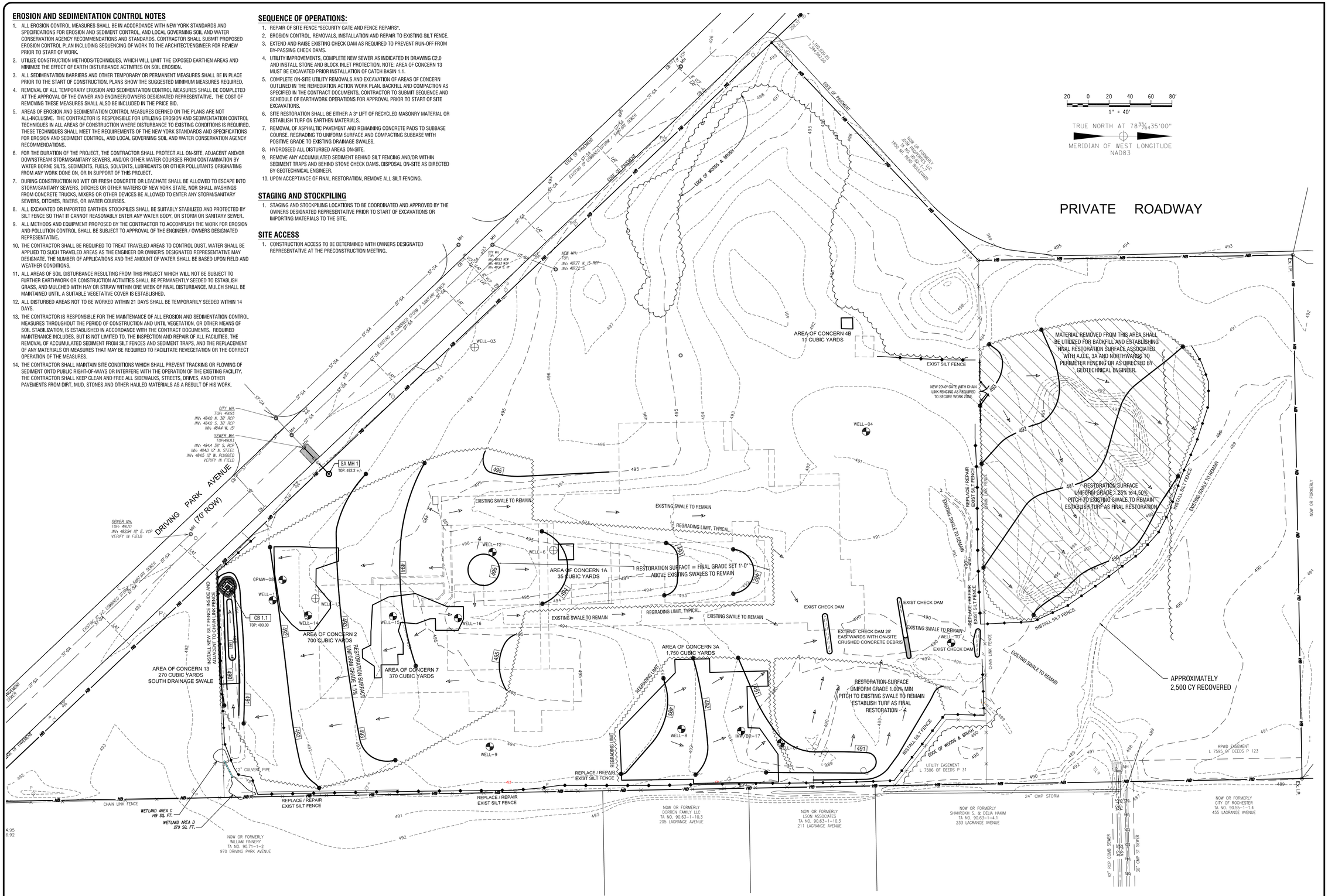
1. REPAIR OF SITE FENCE "SECURITY GATE AND FENCE REPAIRS".
2. EROSION CONTROL, REMOVALS, INSTALLATION AND REPAIR TO EXISTING SILT FENCE.
3. EXTEND AND RAISE EXISTING CHECK DAM AS REQUIRED TO PREVENT RUN-OFF FROM BY-PASSING CHECK DAMS.
4. UTILITY IMPROVEMENTS, COMPLETE NEW SEWER AS INDICATED IN DRAWING C2.0 AND INSTALL STONE AND BLOCK INLET PROTECTION. NOTE: AREA OF CONCERN 13 MUST BE EXCAVATED PRIOR INSTALLATION OF CATCH BASIN 1.1.
5. COMPLETE ON-SITE UTILITY REMOVALS AND EXCAVATION OF AREAS OF CONCERN OUTLINED IN THE REMEDIATION ACTION WORK PLAN. BACKFILL AND COMPACTION AS SPECIFIED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO SUBMIT SEQUENCE AND SCHEDULE OF EARTHWORK OPERATIONS FOR APPROVAL PRIOR TO START OF SITE EXCAVATIONS.
6. SITE RESTORATION SHALL BE EITHER A 3" LIFT OF RECYCLED MASONRY MATERIAL OR ESTABLISH TURF ON EARTHEN MATERIALS.
7. REMOVAL OF ASPHALTIC PAVEMENT AND REMAINING CONCRETE PADS TO SUBBASE COURSE. REGRADING TO UNIFORM SURFACE AND COMPACTING SUBBASE WITH POSITIVE GRADE TO EXISTING DRAINAGE SWALES.
8. HYDROSEED ALL DISTURBED AREAS ON-SITE.
9. REMOVE ANY ACCUMULATED SEDIMENT BEHIND SILT FENCING AND/OR WITHIN SEDIMENT TRAPS AND BEHIND STONE CHECK DAMS. DISPOSAL ON-SITE AS DIRECTED BY GEOTECHNICAL ENGINEER.
10. UPON ACCEPTANCE OF FINAL RESTORATION, REMOVE ALL SILT FENCING.

STAGING AND STOCKPILING

1. STAGING AND STOCKPILING LOCATIONS TO BE COORDINATED AND APPROVED BY THE OWNERS DESIGNATED REPRESENTATIVE PRIOR TO START OF EXCAVATIONS OR IMPORTING MATERIALS TO THE SITE.

SITE ACCESS

1. CONSTRUCTION ACCESS TO BE DETERMINED WITH OWNERS DESIGNATED REPRESENTATIVE AT THE PRECONSTRUCTION MEETING.



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CITY OF ROCHESTER
30 CHURCH STREET
ROCHESTER, NY 14614-1290

DRAWING TITLE

GRADING AND EROSION CONTROL PLAN

ISSUED FOR
CONSTRUCTION

DATE: AUGUST 15, 2011

DESIGNED BY: B.S.B.
DRAWN BY: B.S.B.
REVIEWED BY: #

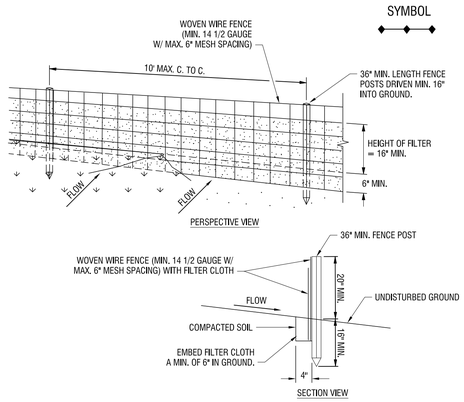
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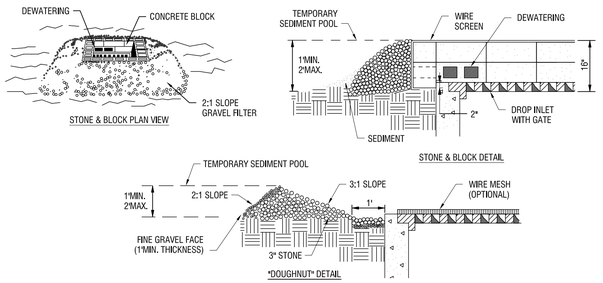
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NOTES:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

1 C-4.0 SILT FENCE

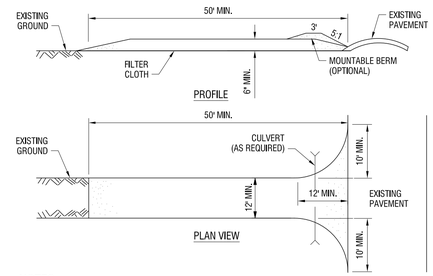


CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

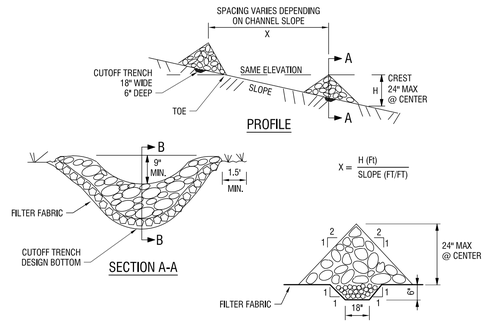
2 C-4.0 STONE AND BLOCK DROP INLET PROTECTION



NOTES:

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS, TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

3 C-4.0 STABILIZED CONSTRUCTION ENTRANCE

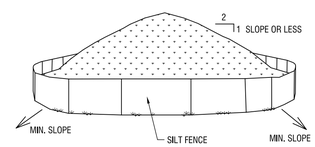


NOTES:

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

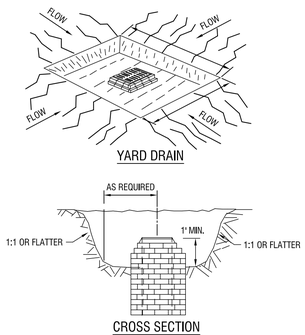
4 C-4.0 STONE CHECK DAM



NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1V:2H.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE SPECIFICATIONS FOR INSTALLATION OF SILT FENCE.

5 C-4.0 TEMPORARY SOIL STOCKPILE

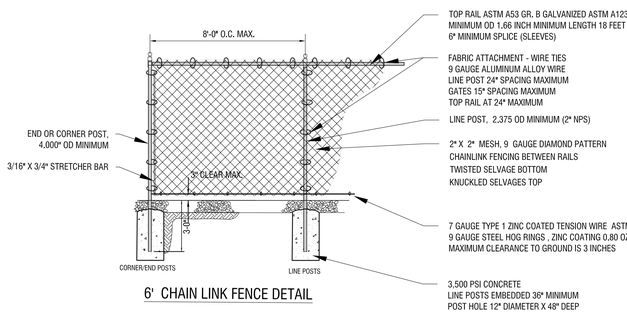


NOTES:

1. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
2. THE VOLUME OF SEDIMENT STORAGE SHALL BE 1800 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE.
3. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
5. THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE CONSTRUCTED DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
6. ALL CUT SLOPES SHALL BE 1:1 OR FLATTER.

MAXIMUM DRAINAGE AREA: 3 ACRES

6 C-4.0 CATCH BASIN SEDIMENT TRAP

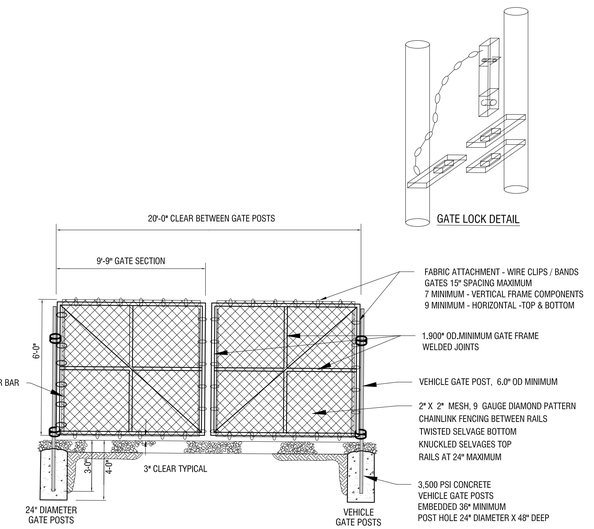


6' CHAIN LINK FENCE DETAIL

FENCING NOTES

1. SPOT WELDING OR WELDING TO SHALL BE TO THE PIPE SURFACE NOT TO ANY GALVANIZED SURFACE.
2. SPOT WELDS, DAMAGE, CAPS, POSTS OR OTHER ITEMS SHALL BE PROTECTED FROM WEATHER BY FIELD APPLICATION OF GALVANOX IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS.
3. ALL FRAMEWORK WILL BE HOT DIPPED GALVANIZED, PIPE 2.0 OZ PER LINER FOOT ASTM A120 AND COMPONENTS ASTM A123.

7 C-4.0 CHAIN LINK FENCE DETAIL



FENCING NOTES

1. SPOT WELDING OR WELDING TO SHALL BE TO THE PIPE SURFACE NOT TO ANY GALVANIZED SURFACE.
2. SPOT WELDS, DAMAGE, CAPS, POSTS OR OTHER ITEMS SHALL BE PROTECTED FROM WEATHER BY FIELD APPLICATION OF GALVANOX IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS.
3. ALL FRAMEWORK WILL BE HOT DIPPED GALVANIZED, PIPE 2.0 OZ PER LINER FOOT ASTM A120 AND COMPONENTS ASTM A123.
4. FABRIC SHALL BE CONNECTED TO THE POSTS, TOP AND BOTTOM RAILS WITH GALVANIZED METAL CLIPS.
5. DROP BAR GATE LOCK SYSTEM WITH BAR CONNECTED TO POST BY CHAIN (WELDED).

8 C-4.0 20' DOUBLE LEAF GATE DETAIL

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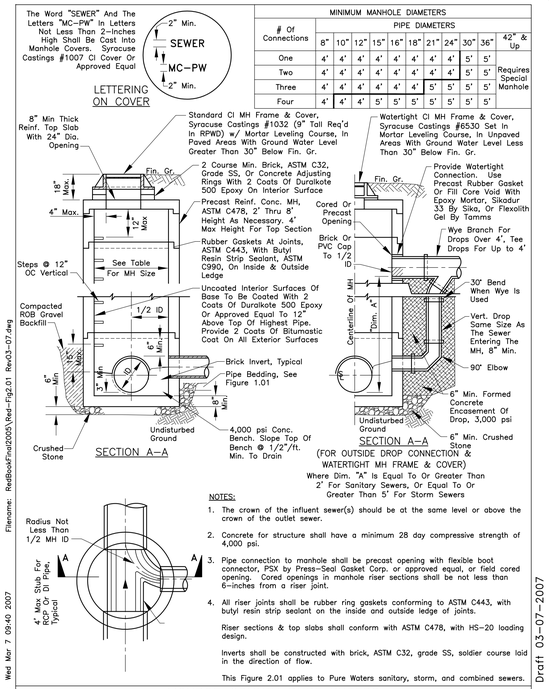
DESIGNED BY: B.S.B.
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ISSUED FOR:
CONSTRUCTION
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Project Lic: LA Construction Drawings

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209288

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NOTES:

1. The crown of the influent sewer(s) should be at the same level or above the crown of the outlet sewer.
2. Concrete for structure shall have a minimum 28 day compressive strength of 4,000 psi.
3. Pipe connection to manhole shall be precast opening with flexible boot connector, PSX by Press–Seal Gasket Corp. or approved equal, or field cored opening. Cored openings in manhole riser sections shall be not less than 6–inches from a riser joint.
4. All riser joints shall be rubber ring gaskets conforming to ASTM C443, with butyl resin strip sealant on the inside and outside ledge of joints.

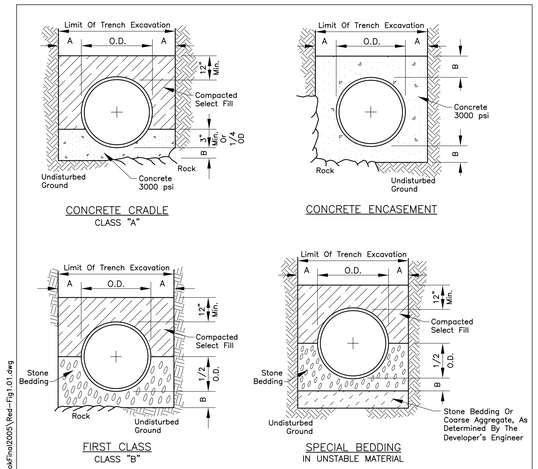
   Riser sections & top slabs shall conform with ASTM C478, with HS–20 loading design.

   Inverts shall be constructed with brick, ASTM C32, grade SS, soldier course laid in the direction of flow.

   This Figure 2.01 applies to Pure Waters sanitary, storm, and combined sewers.

MONROE COUNTY PURE WATERS		
MARCH 2007	MANHOLE DETAILS WITH PRECAST REINFORCED CONCRETE BASE	FIGURE 2.01

Filename: RedBook/Final2000\Red-Fig2.01 Rev03-07.dwg
Time Printed: Wed Mar 7 09:40 2007
Draft 03-07-2007



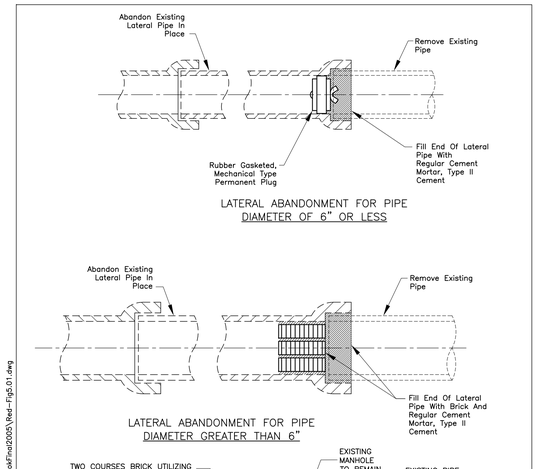
PIPE DIA.	DIM. A	DIM. B
UP TO 18"	1.0'	6"
21" TO 36"	1.5'	9"
OVER 36"	1.5'	12"

NOTES:

1. Trench backfill shall be as required by the highway owner.
2. Select fill shall be sand, gravel, and similar material which shall be free from clay, loam, organic material, debris, frozen material and shall contain only small amounts of stone, pebbles, or lumps over one inch in greatest dimension, but none over two inches in greatest dimension.
3. Stone bedding shall mean approved imported aggregate meeting the requirements of the New York State Department of Transportation, Standard Specification, "Crushed Stone", primary size 1 or a mixture of primary size 1 and 2, washed.
4. Coarse aggregate shall mean approved imported aggregate meeting the requirements of the New York State Department of Transportation, Standard Specification, "Crushed Stone", primary size 3 or a mixture of primary size 3 and 4.
5. This Figure 1.01 applies to Pure Waters sanitary, storm, and combined mainline sewers and lateral pipe installations, as well as forcemains.

MONROE COUNTY PURE WATERS		
Feb 2005	BEDDING DETAILS	FIGURE 1.01

Filename: RedBook/Final2000\Red-Fig1.01.dwg
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Final 02-15-2005

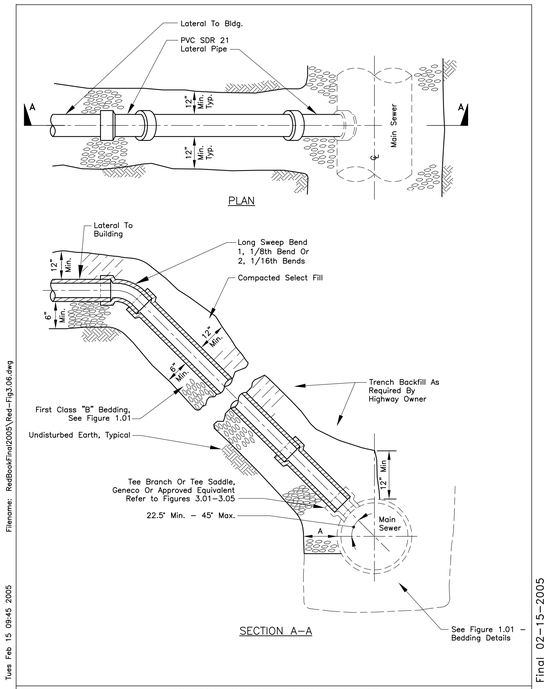


NOTES:

1. Lateral Abandonment must be witnessed by a representative of the District. Notify Pure Waters a minimum of 48 hours in advance of construction for inspection of the lateral abandonment. Telephone (585) 760–7600, Option 5.
2. Brick for plug: ASTM C–32, Grade SS.

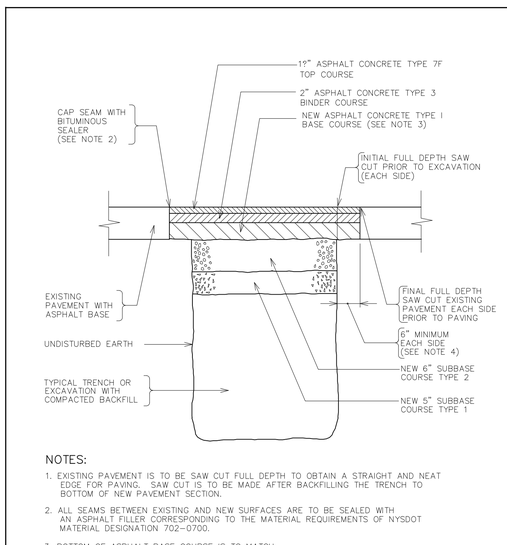
MONROE COUNTY PURE WATERS		
Feb 2005	LATERAL AND MAIN ABANDONMENT DETAIL	FIGURE 5.01

Filename: RedBook/Final2000\Red-Fig5.01.dwg
Time Printed: Tues Feb 15 09:45 2005
Final 02-15-2005



MONROE COUNTY PURE WATERS		
Feb 2005	LATERAL RISER CONNECTION	FIGURE 3.06

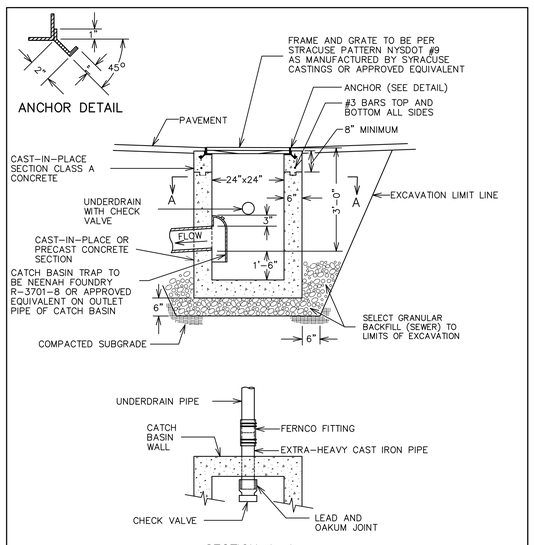
Filename: RedBook/Final2000\Red-Fig3.06.dwg
Time Printed: Tues Feb 15 09:45 2005
Final 02-15-2005



NOTES:

1. EXISTING PAVEMENT IS TO BE SAW CUT FULL DEPTH TO OBTAIN A STRAIGHT AND NEAT EDGE FOR PAVING. SAW CUT IS TO BE MADE AFTER BACKFILLING THE TRENCH TO BOTTOM OF NEW PAVEMENT SECTION.
2. ALL SEAMS BETWEEN EXISTING AND NEW SURFACES ARE TO BE SEALED WITH AN ASPHALT FILLER CORRESPONDING TO THE MATERIAL REQUIREMENTS OF NYSDOT MATERIAL DESIGNATION 702–0700.
3. BOTTOM OF ASPHALT BASE COURSE IS TO MATCH THE BOTTOM OF OR BE SET BELOW BOTTOM OF EXISTING ASPHALT PAVEMENT TO PROVIDE FULL REQUIRED THICKNESS OF ASPHALT TOP AND BINDER AND MINIMUM THICKNESS OF ASPHALT BASE. MINIMUM THICKNESS ASPHALT BASE IS:
   HEAVY DUTY PAVEMENT – 8 INCHES.
   MEDIUM DUTY PAVEMENT – 3 INCHES.
   LIGHT DUTY PAVEMENT – 0 INCHES.
4. 6 INCH MINIMUM TO BE FROM EDGE OF UNDISTURBED EARTH, EACH SIDE OF TRENCH.

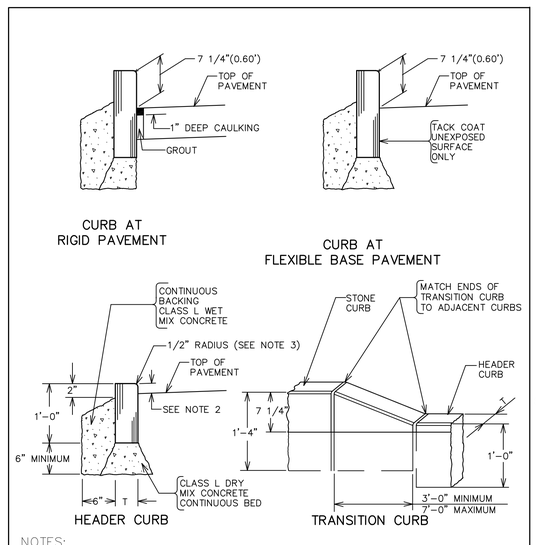
CITY OF ROCHESTER		
TRENCH RESTORATION ASPHALT BASE		
ISSUED 9–2–91	STD. DWG. NO. R206–1	
REVISED 5–12–94		



NOTES:

1. INSTALL CHECK VALVE TO PREVENT WATER FROM FLOWING BACK INTO UNDERDRAIN PIPE
2. COAT INTERIOR OF CATCH BASIN WITH 2 COATS OF TAMMS DURALKOTE 240, OR APPROVED EQUIVALENT
3. COAT EXTERIOR OF CATCH BASIN WITH 2 COATS OF HI–BUILD BITUMINOUS COATING 35–J–10, BITMASTIC SUPER SERVICE BLACK, OR APPROVED EQUIVALENT

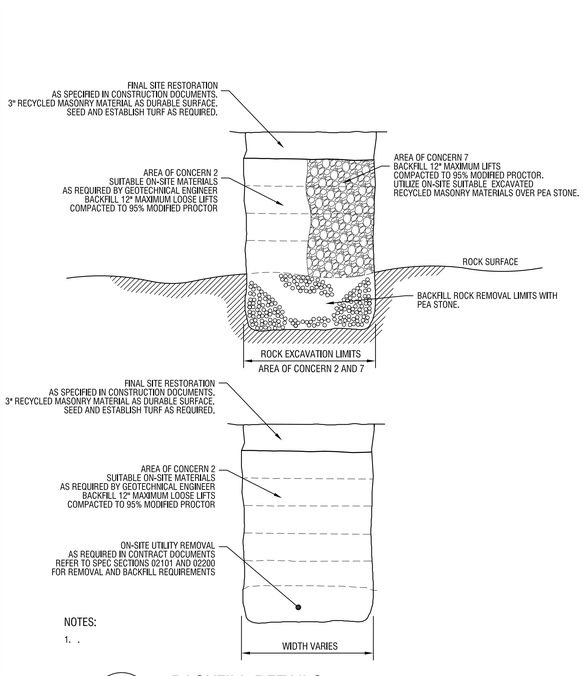
CITY OF ROCHESTER		
CATCH BASIN TYPE C		
ISSUED 9–2–91	STD. DWG. NO. R604–2	
REVISED 11–24–07		



NOTES:

1. CURB THICKNESS T IS TO BE 5" OR AS INDICATED ON THE DRAWINGS.
2. PROVIDE 0" CURB REVEAL FOR HEADER CURB CURB AT SIDEWALK RAMPS AND 19" CURB REVEAL ~~FOR HEADER CURB AT DRIVEWAYS.~~
3. ALL CURB, EXCEPT HEADER CURB USED FOR SIDEWALK ACCESS RAMPS, IS TO HAVE THE 1/2" RADIUS.
4. CURB REVEAL BEYOND THE RIGHT–OF–WAY 6" OR AS INDICATED ON THE DRAWINGS.

CITY OF ROCHESTER		
STONE CURB		
ISSUED 9–2–91	STD. DWG. NO. R609–1	
REVISED 10–21–03		



NOTES:

1. .

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C-4.1

BACKFILL DETAILS

NO.	REVISION	BY	DATE

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter in any way an item bearing the seal of a licensed architect, professional engineer, or land surveyor as altered, the altering architect, engineer, or land surveyor shall affix to the item his seal and the notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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CITY OF ROCHESTER
30 CHURCH STREET
ROCHESTER, NY 14614-1290

DRAWING TITLE
DETAILS

ISSUED FOR:
CONSTRUCTION
DATE: AUGUST 15, 2011

DESIGNED BY: B.S.B.
DRAWN BY: B.S.B.
REVIEWED BY: #
Arc. Stamp/Lic.#
PLOTTED: Wed., August 31, 2011 at 2:22 PM

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