January 2007

Remedial Investigation Report

Environmental Restoration Project
Clean Water/Clean Air Bond Act of 1996

ERP Site #E-447035
Lower Broadway Parking Lot
312 Broadway
City of Schenectady
Schenectady County, New York

Prepared for:

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APPENDICES

EXHIBITS

1.0 INTRODUCTION

The Schenectady Metroplex Development Authority (Metroplex) and the City of Schenectady (City) entered a State Assistance Contract (SAC) with the New York State Department of Environmental Conservation (DEC) pursuant to the NYS Environmental Restoration Program (ERP) with regard to the investigation of the Lower Broadway Parking Lot, located at 312 Broadway (the Site). The Site is currently owned by the City of Schenectady and leased and operated by Metroplex. A Site Location Map is provided as Figure 1 in this report.

To assist Metroplex and the City in the successful completion of the project, C.T. Male Associates, P.C. (C.T. Male) was retained to complete the technical aspects of the project in accordance with the New York State Department of Environmental Conservation (NYSDEC) December 2002 "Draft DER-10 Technical Guidance for Site Investigation and Remediation". The Draft DER-10 sets forth the administrative and technical requirements for the completion of site investigation and/or site remediation.

The Remedial Investigation (RI) was completed in substantial accordance with the Remedial Investigation/Alternatives Analysis (RI/AA) Work Plan for the Site, dated April 7, 2006, as prepared by C.T. Male for Metroplex and the City of Schenectady. The RI/AA Work Plan was reviewed and subsequently approved by the NYSDEC on April 24, 2006. The NYSDEC approval letter for the Work Plan is presented as Exhibit 1. Deviations from the Work Plan consisted of the following:

- Two of the proposed *on-site* groundwater monitoring wells were not completed. They were to have been in the northernmost portion of the property. In these areas, attempts were made (via Geoprobe) at multiple locations to advance test borings. However, refusal was encountered at each of the locations at a depth of 4 feet or less. The NYSDEC was notified of the inability to install monitoring wells at these locations using the Geoprobe, and agreed that the installation of wells at these locations utilizing alternative drilling methods would be evaluated following submittal and review of the draft RI Report.

  Further review of historical Sanborn Fire Insurance Maps during preparation of the RI Report resulted in the identification of a former gasoline underground storage tank (UST), depicted on the maps as being located north of the former

Schenectady County Coal Co. garage structure on the northern portion of the Site (see Section 2.4 and Figure 2B). This is the same general area referenced above, where shallow refusal precluded the advancement of a test boring and installation of a groundwater monitoring well. In light of the UST information, and with the concurrence of the NYSDEC, additional investigation is proposed for the northern portion of the Site in the vicinity of the tank location.

- One of the proposed *off-site* groundwater monitoring wells was not completed. It was to have been along the northeast side of Hamilton Street. Attempts were made (via Geoprobe) at multiple locations to advance this test boring. However, refusal was encountered at each of the locations at a depth of 4 feet or less. The NYSDEC was notified of the inability to install monitoring wells at this location using the Geoprobe, and agreed that the installation of a well at this location utilizing alternative drilling methods would be evaluated following submittal and review of the draft RI Report..

- The proposed targeted soil gas survey was not completed, based on preliminary findings. It was agreed that the need to complete this task would be evaluated by the NYSDOH following submittal and review of the draft RI report.

- An aboveground enclosed space (vault) with an earthen floor, containing numerous drums of metal turnings/cuttings, was discovered at the southwestern corner of the site, recessed in the concrete retaining wall which runs along the western property boundary. The discovery of the vault and drums prompted additional site activities to inventory the drums and identify their contents, characterize the contents of the drums for disposal, and assess surface soil conditions within the vault. The work conducted and findings from these supplemental activities were presented under separate cover.

1.1 Purpose

The purpose of the Remedial Investigation/Alternatives Analysis Report (RI/AAR) is to present and detail the findings of the investigations completed to aid in the development of an acceptable Proposed Remedial Action Plan (PRAP) and Record of Decision (ROD).

The goal of the RI is to identify and assess known and potential sources of contamination, develop site specific Standards, Criteria and Guidance (SCGs) for identified contaminants, and to develop a comprehensive strategy to address and/or remediate the identified contamination as necessary to protect the environment and human health. The overall goal of the site AAR is to outline various remedial strategies and associated costs which will achieve compliance with established regulatory clean up guidance levels and criteria.

1.2 Report Organization

The RI Report is subdivided into eight (8) sections. Section 1 is an introduction, which presents the purpose of the project and background information such as project work tasks and modifications to the work plan. Section 2 provides the description and utilization of the site with a discussion of former site usage activities, adjoining property utilization, site and area utilities, and site specific history. Section 3 relates to the study area investigation and consists of a description (i.e., dates of completion, number or sampling locations, etc.) of the investigative tasks completed. Section 4 presents the physical characteristics of the study area as obtained during the site investigation, including soils, groundwater, regional geology and surface features such as water bodies and drainage patterns. Section 5 discusses the nature and extent of the contamination in which the analytical results of soil and groundwater samples are compared to applicable regulatory standards and guidance values. Section 6 pertains to the contaminant fate and transport (routes of migration, and contaminant persistence and migration) for the remaining site contamination. Section 7 presents the exposure assessment to evaluate the potential for human exposure and adverse effects to human health and the environment from site related contamination. Section 8 presents the summary and conclusions of the project.

1.3 Project Background

1.3.1 General

Based on review of the history of the Site (described below in Section 2.4), and the conclusion that historical uses of the Site had the potential to degrade the Site's environmental quality, Metroplex and the City made application for inclusion into the New York State Environmental Restoration Program. The goal of inclusion into the

program was to sufficiently investigate and remediate potential site contaminants in anticipation of potential future development of the property.

The RI implemented at the Site involved the collection and laboratory analysis of near-surface soil and subsurface soil samples, the drilling and installation of monitoring wells, and the collection and laboratory analysis of groundwater samples. The investigative methods employed were derived in part from information presented within a limited subsurface investigation at the site conducted by C.T. Male in April, 2004 and from review of historical maps and regulatory databases. The field portion of the investigation was conducted in May and June 2006.

2.0 SITE DESCRIPTION AND UTILIZATION

2.1 Site Description

The Site is located in the City of Schenectady, Schenectady County, New York as depicted in Figure 1, Site Location Map. The Site consists of a square-shaped parcel, approximately 2.6 acres in size, located along the west side of Broadway, between Hamilton Street and Clinton Street Extension. The Site is currently developed as a parking lot, with asphalt paved parking areas, landscaped areas, and a vacant, two-story building (referred to in previous reports as the Market Scale House). An enclosed aboveground space (vault) with an earthen floor is present at the southwestern corner of the site, recessed in the concrete retaining wall which runs along the western property boundary. Surrounding land uses include city streets, a railroad right-of-way and commercial properties.

2.2 Area Property Utilization

The adjoining and surrounding land uses in the area of the subject site are described as follows:

North: Hamilton Street, a municipal parking garage, vacant lot, Villa Italia Bakery.

South: Clinton Street Extension; Van Guysling Avenue; Broadway; commercial properties.

East: Broadway; commercial property; municipal parking lot (Clinton South Parking Lot).

West: Delaware and Hudson Railroad right-of-way.

2.3 Utilities

2.3.1 Site

The Lower Broadway Parking Lot consists of a municipal parking lot with associated lighting fixtures. Power to the lights is provided by National Grid via underground

utility lines, assumed to traverse the site, between individual lights, although the exact configuration is unknown.

2.3.2 Area Utilities

Area utilities consist primarily of overhead and underground electrical power, and underground natural gas, supplied by National Grid. Municipal water and sanitary sewer are provided by the City of Schenectady.

2.4 Site History

The Site was reportedly developed for its current use as a parking lot between 1982 and 1988. According to a February 2004 Phase I Environmental Site Assessment (ESA) Report prepared for the Site by Professional Service Industries, Inc. (PSI), the northwestern portion of the Site was occupied by the Schenectady County Coal Company from the early 1900s to around 1970. Three prominent structures on the site were associated with operations of the Schenectady County Coal Company: a "coal pockets" building (the southernmost and largest of the three structures); a garage; and an office structure, with adjoining scales. During this period of time, the remainder of the Site was occupied by the City Pipe Yard, a wagon painting building, the public market, the "Market Scalehouse" building and a "comfort station" building. In 1930, a filling station with gasoline tanks occupied the south end of the public market; however by 1951 the filling station was no longer identified on the Site. In the 1970s the Schenectady County Coal Company was replaced with a warehouse and office, which were later replaced with the existing municipal parking lot.

During the preparation of the RI Report, C.T. Male conducted further review of copies of the historical Sanborn Fire Insurance Maps provided within the PSI Phase I ESA report. Digital versions of these maps obtained via the internet were also reviewed. C.T. Male noted that the 1914, 1930 and 1951 maps depict a gasoline underground storage tank (UST) to the north of the former garage structure (associated with the Schenectady County Coal Co.) on the northern portion of the Site. The approximate locations of this UST and the other historical buildings/structures noted above are shown on Figure 2B – Historical Site Features and Structures.

Based on historical Sanborn Fire Insurance Maps, a manufactured gas plant was formerly located to the south and southeast of the Site. The Sanborn Map dated 1900 shows a gas holder adjacent to the southwest side of Broadway (formerly known as S. Centre Street), directly across from the Site.

2.5 Previous Site Investigations

As referenced above, a Phase I ESA was performed for the Site in February 2004. During April 2004, C.T. Male conducted a limited Phase II ESA on the Site (based on the information presented in the Phase I ESA Report) including soil sampling, installation of groundwater monitoring wells, and groundwater sampling. Reports associated with both the Phase I and Phase II assessments were submitted to the NYSDEC along with the ERP application.

Laboratory analysis of soil and groundwater samples revealed the presence of volatile and semivolatile organic compounds at concentrations exceeding regulatory limits at sampling locations in the areas of the former gasoline filling station and in an area of observed surface staining.

Soils encountered to a depth of 16 feet below grade were generally fill materials overlying a mixture of silt and sand. The fill materials were observed to extend from directly beneath the asphalt to depths between 5 and 8 feet below grade. The fill consisted of sand, silt, gravel, ash, brick and organic material. Three of the test borings were completed on the southern "quadrant" of the site. At these locations, soil samples collected from a depth range of 6 to 20 feet were noted as having creosote odors.

Based on the findings of subsurface exploration conducted by CTM and others on properties in the vicinity of the Site, the mixed sand and silt lithology encountered on the Site is expected to extend to a depth of approximately 70 to 80 feet below grade. These soils are expected to be underlain by lacustrine silt and clay, and then glacial till. Depth to bedrock is expected to be in excess of 100 feet below grade.

3.0 STUDY AREA INVESTIGATION

3.1 Site Characterization

The investigation was conducted within the property boundaries of the subject site, which currently serves as an asphalt-paved parking lot, and off site at two boring/monitoring well locations. Investigation of the project site was performed through the completion of specific work tasks. The following sub-sections provide dates of work task completion and select work task results (i.e., number of borings advanced, monitoring wells installed, etc.) not presented elsewhere herein.

Investigative tasks performed by C.T. Male included sampling and analysis of near-surface soil, subsurface soil and groundwater. All of the analytical data for this project was validated in accordance with the Guidance for the Development of Data Usability Summary Report (DUSR). The DUSR provides an evaluation of the analytical data to determine whether or not the data meets the project specific criteria for data quality and data use.

3.2 Fish and Wildlife Impact Analysis (FWIA)

Based on the site's current use as a paved parking lot, its location and lack of any observable wildlife resources, the NYSDEC Project Manager determined that a Fish and Wildlife Impact Analysis (FWIA) was not required for this investigation.

3.3 Survey of Public and Private Wells

According to officials at the Schenectady County Health Department, the project site and its surrounding area are serviced by public water furnished by the City of Schenectady. Private water wells are reportedly not located on, or in the vicinity of the project site. The City utilizes water supply wells (located outside of the City limits) to draw water from the Schenectady-Niskayuna Aquifer System.

3.4 Near-surface Soil Sampling and Analysis

Near-surface soil samples were collected at twelve (12) individual locations on May 11, 2006. The sampling locations were determined by dividing the site into an approximate

100 by 100 foot grid system. The samples were then collected from each of the grid cells. Because the site was covered with asphalt pavement, the asphalt surface and granular sub base material (if present) were removed prior to sample collection. Samples were then collected in accordance with the procedures outlined in the RI/AA Work Plan. The collected samples were submitted to the laboratory of record (Chemtech) for the following analyses: TCL volatile and semi-volatile organic compounds; pesticides and PCBs; and TAL metals.

Quality Assurance/Quality Control (QA/QC) samples were collected during the surface soil sampling event, as follows.

- One equipment blank was collected of the stainless steel spoon and bowl prior to the collection of sample SS-9.
- One duplicate sample was collected of sample SS-8.
- MS/MSD analyses were performed on sample SS-9.

3.5 Site Wide Subsurface/Hydrogeologic Evaluation

3.5.1 Subsurface Soil Sampling and Monitoring Well Installation

The Subsurface/Hydrogeologic evaluation included the completion of exploratory test borings at twelve (12) locations (GP-1 through GP-10, GP-14, GP-15). Borings were also attempted at three additional locations (GP-11 through GP-13); however refusal was encountered at depths of 4 feet below grade or less at these locations, on what appeared to be concrete. Test borings that were advanced to depths below the water table were converted to groundwater monitoring wells upon completion of subsurface soil sampling. The locations of the test borings/monitoring wells are depicted in Figure 2 - Monitor Well/Sampling Locations Map. Two of the borings/monitoring wells (GP-14 and GP-15) were located off-site, along the eastern side of Broadway. Test borings and monitoring well installation activities occurred during the period from May 8 to May 10, 2006.

The test borings were advanced using direct-push (Geoprobe) methods. The test borings were advanced to depths ranging from 14 to 16 feet below grade, depending on the depth at which saturated soils were observed. During advancement of the borings,

soil samples were collected at continuous four-foot intervals for soil classification, PID screening, and potential laboratory analysis. Soil samples were collected and handled in accordance with the procedures outlined in the RI/AA Work Plan. The soil classification for each boring is presented on the Geoprobe Subsurface Exploration Logs in Appendix A. Recovered soil samples were screened for the presence of volatile organic compound vapors using a photoionization detector (PID). The PID screening results are presented on the Organic Vapor Headspace Analysis Logs in Appendix B. One soil sample from each test boring was retained for laboratory analysis, based in part on headspace screening results and organoleptic perception of suspect contamination. A total of 13 soil samples (including a duplicate sample collected from test boring GP-1) were submitted to the laboratory of record for analyses for TCL volatile and semi-volatile organic compounds, PCBs and pesticides, and TAL metals. The test borings were converted to permanent 1-inch diameter PVC monitoring wells, identified as CTM-1 through CTM-10 (on-site locations), and CTM-14 and CTM-15 (off-site locations). Each monitoring well was protected with a flush-mounted curb box with bolt down cover. Monitoring well construction details are provided in Appendix C.

QA/QC samples were collected during the soil boring sampling event, as follows.

- One equipment blank was collected of the MacroCore sampler prior to the collection of GP-10 (4-6').
- One duplicate sample was collected of GP-1 (4-6' bgs).
- MS/MSD analyses were performed on sample GP-2 (4-6').

Table 3.5.1-1 provides a summary of the boring and monitoring well identification numbers, boring depths, depths at which the monitoring wells were set, monitoring well screened interval depths, and the depth from which soil samples were collected for laboratory analysis.

TABLE 3.5.1-1: Soil Boring and Monitoring Well Summary

Boring ID	Monitoring Well ID	Boring Depth (bgs)	MW Depth (bgs)	MW Screened Interval	Laboratory Soil Sample Depth (bgs)
GP-1	CTM-1	16′	15′	5 to 15′	4 to 6′
GP-2	CTM-2	14′	14′	4 to 14′	4 to 6′
GP-3	CTM-3	14′	14′	4 to 14′	4 to 8′
GP-4	CTM-4	15′	14′	4 to 14′	4 to 6′
GP-5	CTM-5	16′	14′	4 to 14′	10 to 12′
GP-6	CTM-6	15′	14′	4 to 14′	4 to 6′
GP-7	CTM-7	16′	14′	4 to 14′	4 to 6′
GP-8	CTM-8	16′	14′	4 to 14′	4 to 6′
GP-9	CTM-9	14′	14′	4 to 14′	4 to 6′
GP-10	CTM-10	15′	14′	4 to 14′	4 to 6′
GP-11	NA	4 locations attempted; refusal at 1′ to 3′ b.g.	NA	NA	None Submitted
GP-12	NA	1 location attempted; refusal at 3′ b.g.	NA	NA	None Submitted
GP-13	NA	3 locations attempted; refusal at 0.5′ to 4′ b.g.	NA	NA	None Submitted
GP-14	CTM-14	15′	14′	4 to 14′	4 to 6′
GP-15	CTM-15	15′	14′	4 to 14′	8 to 12′

Notes: bgs denotes below ground surface
NA denotes not applicable - no well installed

3.5.2 Dust Monitoring

During Geoprobe activities, C.T. Male utilized two TSI DustTRAK real-time particulate monitors, capable of continuously measuring concentrations of airborne dust, smoke, mists, haze, and fumes. These instruments are capable of detecting particles from 0.1 to

10 micrometers in size, and are capable of providing real-time data, and 15-minute time-weighted average exposure measurements. The instruments were placed on tripods located at temporary monitoring stations, selected each day based on the prevailing wind direction, one upwind and one downwind of the work area. Dust monitoring equipment was calibrated by the supplier and was zeroed in the field prior to each day's use. Based on field observations, little to no visible dust was generated during the course of Geoprobe drilling activities, and dust monitoring data indicated that established action levels were not exceeded.

3.5.3 Well Development and Groundwater Sampling

On May 24 and 30, 2006, wells CTM-1 through CTM-10, CTM-14 and CTM-15 were developed, using pumping and surging methods, to restore hydraulic connection with the surrounding formation. Each well was developed until a minimum of five well volumes of water were removed or until the well was dry. Well development water was pumped into 5-gallon buckets and then transferred to 55-gallon drums which were labeled and stored on site, pending proper disposal arrangements.

On June 8, 2006, C.T. Male surveyed the monitoring well and surface soil sampling locations for placement on the site plan, and the top of well casing elevations to aid in determining groundwater gradient across the site.

During the period of June 13-15, 2006, C.T. Male conducted groundwater monitoring activities on the site, including measurement of water levels and collection of groundwater samples. On June 13, 2006 (and again on August 2, and September 1, 2006) water levels were measured at each well location from the surveyed top of well casing, following the procedures outlined in the RI/AA Work Plan.

Prior to collection of groundwater samples, each well was purged using a peristaltic pump in accordance with the procedures outlined in the RI/AA Work Plan. Purge water was handled in the same manner as the water generated during well development. After allowing the water level in each well to recover to at least 80 percent of its initial static level, groundwater samples were collected employing low-flow techniques, using a peristaltic pump. Groundwater Services Field Logs are included in Appendix F. With the exception of utilizing low-flow pumping methods for sample collection, groundwater samples were handled in accordance with the

procedures outlined in the RI/AA Work Plan. The samples were forwarded to the laboratory of record (Chemtech) for the following analyses: TCL volatile and semi-volatile organic compounds; PCBs and pesticides; and TAL metals.

QA/QC samples were collected during the groundwater sampling event, as follows:

- One equipment blank of the peristaltic pump tubing was collected prior to collection of the groundwater sample from monitoring well CTM-5.
- One duplicate sample was collected of CTM-8.
- MS/MSD analyses were performed on CTM-4.

3.6 Data Usability Summary Report (DUSR)

Data Usability Summary Reports (DUSRs) were completed of the analytical data generated during this investigation to confirm that the data is of adequate quality for subsequent decision making purposes. All of the analytical data presented in the attached summary tables have been validated in accordance with Appendix 2B (Guidance for the Development of Data Usability Summary Reports) of the *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC, December 2002). The DUSR reports for the RI are presented as Exhibit 2.

3.7 Investigative Derived Waste

Waste derived from investigative activities consisted of soil from drilling, groundwater from well development and sampling, and plastic sheeting/tubing and personal protective equipment (i.e. sampling gloves). The waste soil and groundwater were containerized in labeled 55-gallon drums, which were stored on site pending disposal arrangements. On September 7, 2006, C.T. Male's subcontractor, M.C. Environmental Services, Inc. mobilized personnel and equipment to the site to remove the waste for disposal, in conjunction with waste removal activities at the 314 Clinton Street site. Between the two sites, a total of 742 gallons of groundwater were removed from the drums using a vacuum truck, and were transported off site for disposal at Norlite Corporation in Cohoes, New York. The drums of soil were emptied, and a total of 4.59 tons of soil were loaded onto a dump truck and transported off site for disposal at Environmental Soil Management, Inc. in Fort Edward, New York. The empty drums

were transported off site for disposal as scrap metal at T.A. Predel & Co., Inc. in Schenectady, New York. Plastic sheeting/tubing and PPE were bagged and discarded in Metroplex's solid waste dumpster. Pertinent waste disposal documentation is included in Appendix D.

3.8 Asbestos & Lead Sampling in Site Building

In addition to the near-surface and subsurface investigative activities performed as part of the RI, C.T. Male also performed an evaluation of the existing site building (Scale House) for the presence of asbestos-containing materials (ACM) and lead-based paint. Bulk samples of suspected ACM and chips of suspected lead-based paint were collected and analyzed. Results of the sampling activities were presented in a letter to the Schenectady Metroplex Development Authority dated July 11, 2006. A copy of the letter is provided as Appendix E.

4.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

4.1 Results of Study Area Investigation

A number of investigative tasks were completed by C.T. Male to characterize the project site. The results of the investigative tasks are supplemented with published literature including soil, bedrock, and aquifer mapping to further assess the physical characteristics of the project site. The physical characteristics of the site are discussed in the following sections.

4.1.1 Surface Features

Presently, the site consists of an asphalt paved parking lot. The site's surface topography is generally flat and non-sloping. The site has previously been occupied by commercial buildings and structures associated with the Schenectady County Coal Company, the City's public market, the City Pipe Yard, a wagon painting building, and a gasoline filling station. The approximate locations of these features are shown on Figure 2B – Historical Site Features & Structures.

4.1.2 Surface Water Bodies

Surface water bodies are not located on the site. The nearest surface water body is the Mohawk River, which is located approximately 0.5 mile northwest of the site. The river flows generally eastward to where it joins the Hudson River. The Cowhorn Creek traverses the adjoining property north of Hamilton Street (underground) and flows toward the Mohawk River.

4.1.3 Surface Drainage Patterns

Storm water generated during the course of precipitation events follows surface topography and is directed toward storm drains and catch basins located within the parking lot, which are connected to the City of Schenectady municipal storm sewer system.

4.1.4 Regional Geology

Based on a review of the Surficial Geologic Map of New York, Hudson-Mohawk Sheet, the surficial geology in the vicinity of the site is mapped as recent deposits, generally confined to floodplains within a valley, consisting of oxidized, non-calcareous fine sand to gravel.

According to the Geologic Map of New York, Hudson-Mohawk Sheet, bedrock in the vicinity of the site is mapped as the Normanskill Shale, which consists of minor mudstone and sandstone. As discussed herein, the published regional geology descriptions are consistent with the investigation findings.

4.1.5 Site Soils

The on-site and off-site soils were explored through the advancement of twelve (12) soil borings that were later converted to monitoring wells. The borings were advanced to depths ranging from 14 to 16 feet below grade. A subsurface exploration log for each test boring performed for this project was prepared, and is presented in Appendix B. The logs summarize and present the classifications of the subsurface soils, moisture content and other pertinent visual observations of the soil stratum for the site. The site soils, as visually classified using the Unified Soil Classification System at the time of test boring completion consist of the following: fill material of variable composition (sand, silt, gravel, cinders, ash, fragments of brick, concrete, glass and wood) from just below the asphalt subbase material to depths generally between 4 and 8 feet below grade; underlain by fine to coarse sand and silt to the termination depths of the test borings. Soils encountered at the two *off-site* boring/monitoring well locations adjacent to the eastern side of Broadway consisted predominantly of fine to coarse sand with gravel, cinders, ash and brick fragments (fill materials) to depths of 4 to 8 feet below grade, underlain by fine sand with silt. Bedrock was not encountered either on or off-site within the depth range explored.

At the location of GP-5, black silt with fine sand was observed from approximately 9 to 16 feet below grade, and a creosote-type odor was noted. At GP-6, a black asphalt-type material was observed at approximately 4 feet below grade. At GP-10, black silt and cinders were observed from approximately 6 to 8 feet below grade. At off-site locations GP-14 and GP-15, black soils were observed a tar odor was noted.

Photoionization detector (PID) readings for *on-site* soil samples ranged from 0.2 to 3.5 ppm above background levels, with the exception of four samples. The 0-2' and 4-6' samples at GP-4 exhibited readings of 12.4 and 8.0 ppm above background levels, respectively. The 10-12' sample at GP-5 exhibited a reading of 20.2 ppm above background level (tar/creosote odor noted). The 0-2' sample at GP-3 exhibited a reading of 52.9 ppm above the background level (petroleum odor noted). The subsurface soil sample selected for laboratory analysis from GP-3 was 4-8' (just above the water table). The GP-3 0-2' sample was not submitted for laboratory analysis, based on the collection and submittal of a near-surface soil sample at this location (SS-3).

PID readings for soil samples at *off-site* location GP-14 ranged from 3.1 to 26.1 ppm above background levels (tar/creosote odor and black staining noted), with the highest reading exhibited at 8-10'. PID readings for soil samples at *off-site* location GP-15 ranged from 4.4 to 79.4 ppm above background levels (tar/creosote odor and black staining noted), and increased with depth.

Specific PID readings for samples collected during the advancement of test borings are presented in Appendix B - Organic Vapor Headspace Analysis Logs.

4.1.6 Groundwater Characteristics

According to the map entitled "Potential Yields of Wells in Unconsolidated Aquifers in Update New York, Hudson-Mohawk Sheet" (Edward F. Bugliosi and Ruth A. Trudell, 1988), the subject site is located within an area designated as an unconfined aquifer with the potential to yield more than 100 gallons per minute.

Groundwater conditions on the site were assessed through the advancement of test borings and the subsequent installation of permanent monitoring wells. The installation of groundwater monitoring wells allowed for the collection of static water level data. Water level measurements were collected from the monitoring wells on June 13, August 2 and September 1, 2006. Based on the collected water level data, the water table across the site ranged in depth from approximately 5 to 7.5 feet below existing site grades. Water level data collected on these dates are summarized below in Table 4.1.6-1. The data were used to develop groundwater contour maps, which are presented as Figures 3, 4 and 5, respectively.

Based on the water level data obtained during the RI groundwater monitoring events, the water table did not exhibit significant gradient across the site. During each of the monitoring events, the observed water table elevations varied by less than 1.5 feet. Assuming hydraulic conductivity and porosity values typical of predominantly sandy soils, the groundwater flow velocity across the site is estimated to be in the range of 10^{-3} to 10^{-4} cm/second (or approximately 0.28 to 2.8 feet per day, or 102.2 to 1,022 feet per year). Based on local surface topography, and the groundwater elevation data collected from both the 312 Broadway and 314 Clinton Street sites, shallow groundwater flow direction in the vicinity of the site is expected to be generally to the west and/or northwest, toward the Mohawk River. The groundwater contour maps developed for the 312 Broadway site also indicate a southward component of groundwater flow on the southernmost portion of the site, in the area of GP/CTM-1, and a northward component of flow on the northern portion of the site. Shallow groundwater flow on the northern portion of the site may be influenced by the Cowhorn Creek, which flows west-northwestward across the adjacent property to the north of the site, ultimately to the Mohawk River.

TABLE 4.1.6-1: Summary of Groundwater Elevation Data

Well ID	TOC Elevation (feet amsl)	Date	Depth to Water (feet)	Groundwater Elev. (feet amsl)
CTM-1	227.25	06/13/06	5.15	222.10
		08/02/06	5.59	221.66
		09/01/06	6.09	221.16
CTM-2	228.28	06/13/06	5.56	222.72
		08/02/06	6.07	222.21
		09/01/06	6.44	221.84
CTM-3	228.69	06/13/06	5.83	222.86
		08/02/06	6.43	222.26
		09/01/06	6.68	222.01
CTM-4	229.35	06/13/06	6.70	222.65
		08/02/06	7.31	222.04
		09/01/06	7.46	221.89
CTM-5	227.44	06/13/06	4.79	222.65
		08/02/06	5.12	222.32
		09/01/06	5.55	221.89
CTM-6	228.11	06/13/06	5.38	222.73
		08/02/06	5.72	222.39
		09/01/06	5.99	222.12

TABLE 4.1.6-1: Summary of Groundwater Elevation Data				
Well ID	TOC Elevation (feet amsl)	Date	Depth to Water (feet)	Groundwater Elev. (feet amsl)
CTM-7	228.44	06/13/06	5.77	222.67
		08/02/06	6.21	222.23
		09/01/06	6.46	221.98
CTM-8	228.29	06/13/06	6.45	221.84
		08/02/06	6.28	222.01
		09/01/06	6.72	221.57
CTM-9	227.54	06/13/06	4.64	222.90
		08/02/06	5.30	222.24
		09/01/06	5.70	221.84
CTM-10	227.92	06/13/06	5.11	222.81
		08/02/06	5.75	222.17
		09/01/06	6.17	221.75
CTM-14	228.66	06/13/06	5.43	223.23
		08/02/06	5.83	222.83
		09/01/06	6.23	222.43
CTM-15	227.47	06/13/06	5.49	221.98
		08/02/06	5.43	222.04
		09/01/06	5.92	221.55

NM = Not Measured
Wells CTM-11 through 13 not installed

Field observations and parameters (pH, temperature, conductivity and turbidity) were recorded during groundwater sampling activities completed in June 2006. The pH values for the groundwater samples were relatively neutral with values ranging from 6.65 to 7.18 standard units. The groundwater sample temperatures ranged from 16.7 to 18.3 degrees Celsius. The conductivity for the groundwater samples ranged from 0.87 to 6.98 microsiemens per centimeter (µS/cm). Turbidity values for the sampled groundwater were monitored prior to collecting the analytical samples. Turbidity values ranged from 7.58 to 44 nephelometric turbidity units (NTUs). The table below lists the field parameter values for each well immediately prior to sample collection.

TABLE 4.1.6-2: Groundwater Field Observations Summary			
Well ID	**Turbidity[1]**	**pH & Temp.**	**Specific Conductance**
CTM-1	37 NTU	6.83 @ 16.7°C	3.75 µs/cm
CTM-2	17.9 NTU	6.82 @ 18.3°C	3.27µs/cm

TABLE 4.1.6-2: Groundwater Field Observations Summary			
Well ID	Turbidity[1]	pH & Temp.	Specific Conductance
CTM-3	7.58 NTU	6.93 @ 18°C	3.56 µs/cm
CTM-4	8.93 NTU	6.79 @ 16.7°C	3.61 µs/cm
CTM-5	2.22 NTU	6.7 @ 18.2°C	2.06 µs/cm
CTM-6	31.7 NTU	6.75 @ 17.6°C	2.74 µs/cm
CTM-7	33.5 NTU	6.94 @ 18.1°C	3.32 µs/cm
CTM-8	44 NTU	6.65 @ 16.8°C	3.54 µs/cm
CTM-9	36 NTU	6.88 @ 17.6°C	6.01 µs/cm
CTM-10	24 NTU	6.84 @ 18.2°C	3.38 µs/cm
CTM-14	43 NTU	7.18 @ 16.1°C	0.87 µs/cm
CTM-15	17 NTU	7.07 @ 17.6°C	6.98 µs/cm

Note: Turbidity readings were collected after purging, but before collecting laboratory samples.
Wells CTM-11 through 13 not installed

5.0 NATURE AND EXTENT OF CONTAMINATION

The nature and extent of contamination at the project site is based on subjective and quantitative analyses of samples collected during the RI. Samples collected during the RI included surface soil, subsurface soil and groundwater. The soil and groundwater samples were analyzed for TCL organics, Pesticides, PCBs and TAL metals. The analytical data for the RI are summarized in the following subsections, and are presented on Tables 1 through 9 following the report text.

5.1 Sources

Historical on-site potential sources of contamination consist of industrial operations associated with the Schenectady County Coal Company, a gasoline filling station and fill materials of unknown origin underlying the entirety of the site to depths up to 8 feet below grade. Additionally, a former manufactured gas plant, operated by Schenectady Electric Light & Gas Company, and later by City Gas Works, was located on the adjacent property to the east of the site, across Broadway.

5.2 Determination of Project Standards, Criteria and Guidance (SCGs)

Project SCGs were established for comparison of analytical results of the different media types that were sampled. The media types were surface and subsurface soils, and groundwater.

Laboratory analyses for soil and groundwater sampled as part of the RI were TCL organics (which include volatile and semi-volatile organic compounds), pesticides and PCBs, and TAL metals. Analytical results for soil samples were compared to 6NYCRR Part 375 Restricted Use (Commercial) Soil Cleanup Objectives. Analytical results for groundwater samples were compared to NYSDEC Groundwater Standards and Guidance Values, promulgated in the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS).

5.3 Near-surface Soils

5.3.1 General

Twelve (12) near-surface soil samples, identified as SS-1 through SS-12 on Figure 2, were collected across the Site from the first few inches beneath the gravel subbase underlying the asphalt. Soil comprising the near-surface soil samples was similar at each of the sample locations, and consisted of fine to coarse sand with minor components of silt and gravel. The near-surface soil samples were collected on May 11, 2006, and were forwarded to the laboratory of record for analysis for TCL volatile and semi-volatile organic compounds, pesticides and PCBs, and TAL metals. QA/QC samples were also collected and consisted of one equipment blank and one duplicate sample (duplicate of SS-8).

Summary tables of near-surface soil sampling results (which include detected compounds only) are presented as Tables 1 to 3 in the Tables section of the report.

5.3.2 Volatile Organic Compounds in Near-surface Soil

The analytical results for volatile organic compounds identified two VOCs at concentrations exceeding laboratory detection limits, but below their respective SCGs. Acetone was detected in the DUP-2 sample (a duplicate sample of SS-8) at an estimated concentration of 63 ug/Kg. Carbon disulfide was detected in sample SS-2 at an estimated concentration of 7.7 ug/Kg. Methylene chloride was also detected in three samples (SS-2, SS-3 and SS-6) at concentrations ranging from 130 to 170 ug/Kg, which are orders of magnitude below its applicable SCG. It should be noted that methylene chloride was also identified in the laboratory blank, indicating possible laboratory contamination of the environmental sample.

5.3.3 Semi-Volatile Organic Compounds in Near-surface Soils

Analytical results showed that one or more SVOCs were detected at concentrations above laboratory method detection limits in ten of the twelve near-surface soil samples collected. However, none of these compounds was detected at concentrations above applicable SCGs. Detected SVOCs are listed in Table 2, included in the Tables section of the report. The samples exhibiting the largest number and highest concentrations of SVOCs included SS-4, located adjacent to the northeastern site boundary (along

Hamilton Street), and SS-9 through SS-12, located on the westernmost portion of the site.

5.3.4 Pesticides and PCBs in Near-surface Soils

Pesticides and PCBs were not detected above the laboratory method detection limits in near-surface soil samples.

5.3.5 Metals in Near-surface Soils

A total of twenty (20) Target Analyte List metals were detected in near-surface soil samples at concentrations above laboratory method detection limits. However, none of these metals was detected at concentrations above applicable SCGs. Detected metals are listed in Table 3, included in the Tables section of the report. The various metals detected in near-surface soil samples were not limited to a particular area (or areas) of the site, but rather were exhibited throughout the site at all of the sampling locations.

5.4 Subsurface Soils

5.4.1 General

Subsurface soil samples were retained for laboratory analysis from twelve (12) soil borings advanced using Geoprobe methods at the locations identified on Figure 2 as GP/CTM-1 to GP/CTM-10, and GP/CTM-14 and GP/CTM-15. A total of 12 subsurface soil samples, plus one field duplicate sample were submitted for laboratory analysis. The selection of soil samples for laboratory analysis was based on PID screening results and organoleptic (i.e., sight and smell) perception. At locations where no apparent evidence of contamination was observed, the sample interval immediately above the water table was retained for analysis. The samples were analyzed for TCL organics, pesticides, PCBs and TAL metals.

TABLE 5.4.1-1: Summary of Subsurface Soil Samples Selected for Laboratory Analysis

Test Boring ID	Depth Interval (feet b.g.)	PID Reading (ppm)	Comments/Observations
GP-1	4 - 6	1.0	No odors or staining
GP-2	4 - 6	1.1	No odors or staining
GP-3	4 - 8	2.3	No odors or staining

TABLE 5.4.1-1: Summary of Subsurface Soil Samples Selected for Laboratory Analysis			
GP-4	4 - 6	8.0	No odors or staining
GP-5	10 - 12	20.2	Tar/creosote odor; no staining
GP-6	4 - 6	1.6	No odors or staining
GP-7	4 - 6	1.4	No odors or staining
GP-8	4 - 6	0.4	No odors or staining
GP-9	4 - 6	2.5	No odors or staining
GP-10	4 - 6	1.5	No odors or staining
GP-14	4 - 8	3.8	No odor or staining
GP-15	8 - 12	51.7	Tar/creosote odor; black staining

Summary tables of subsurface soil sampling results, which include detected compounds only, are presented as Tables 4 to 6 in the Tables section of the report.

5.4.2 Volatile Organic Compounds in Subsurface Soils

One or more VOCs were detected at concentrations above the laboratory method detection limits, but *below* their respective SCGs, at eight boring locations. Acetone was detected at GP-1 (in the duplicate sample from GP-1), GP-3, GP-6, GP-10 and GP-14 at estimated concentrations ranging from 69 to 130 ug/Kg. Benzene was detected at GP-7 at an estimated concentration of 27 ug/Kg, and at GP-15 (off-site, along the southeast side of Broadway) at 1,900 ug/Kg. 2-butanone (methyl ethyl ketone) was detected at GP-3, GP-5 and GP-10 at estimated concentrations ranging from 31 to 120 ug/Kg. Ethylbenzene was detected at GP-5 at an estimated concentration of 250 ug/Kg, and at GP-15 at 5,800 ug/Kg. Xylenes were detected at GP-5 and GP-6 at estimated concentrations of 350 and 11 ug/Kg, respectively, and at GP-15 at 3,900 ug/Kg. Methylcyclohexane was detected at GP-15 at an estimated concentration of 200 ug/Kg. Isopropylbenzene was detected at GP-5 at an estimated concentration of 130 ug/Kg, and at GP-15 at 1,700 ug/Kg.

The largest overall number and highest concentrations of VOCs detected in subsurface soil were exhibited at GP-15, which is located off-site along the southeast side of Broadway, in the vicinity of the former manufactured gas plant. The sample interval analyzed from this location was from 8 to 12 feet below grade.

5.4.3 Semi-volatile Organic Compounds in Subsurface Soils

A total of twenty (20) SVOCs were detected at concentrations above the laboratory method detection limits in the subsurface soil samples submitted for analysis. SVOCs detected above their applicable SCGs are summarized below in Table 5.4.3-1, are identified in bold on Table 5 in the Tables section of the report, and are also identified on the SVOCs Above SCGs in Subsurface Soil Samples map in Figure 6.

TABLE 5.4.3-1 SVOCs Exceeding SCGs in Subsurface Soils

SVOC	SCG (ug/kg)	Frequency of Exceeding SCGs	Concentration Range Exceeding SCGs (ug/kg)	Sampling Location(s) Exceeding SCGs
Benzo(a)anthracene	5,600	2 of 12	13,000 to 33,000	GP-6, GP-14
Benzo(b)fluoranthene	5,600	2 of 12	16,000 (J) to 33,000 (J)	GP-6, GP-14
Benzo(a)pyrene	1,000	5 of 12	1,500 to 23,000	GP-1, GP-6, GP-7, GP-14, GP-15
Dibenz(a,h)anthracene	560	2 of 12	580 (J) to 900 (J)	GP-6, GP-14

(J) – Denotes an estimated value.

The SVOCs detected above SCGs were generally within soils sampled from the 4 to 8 foot depth interval (within the depth range of the fill material), with the exception of location GP-15, where SVOCs above SCGs were exhibited at a depth intervals of 8 to 12 feet below grade. At this location, tar/creosote-type odors were noted within the sampled depth interval, and a PID reading of 51.7 ppm was exhibited.

The locations exhibiting the largest numbers and highest concentrations of SVOCs were on-site location GP-6 (from 4 to 6 feet below grade), on the central portion of the site, and off-site location GP-14 (from 4 to 8 feet below grade), located east of the site along the southeastern side of Broadway, in the vicinity of the former manufactured gas plant. The PID readings exhibited by these samples were 1.6 and 3.8 ppm, respectively, and staining was not observed in either sample. However, the subsurface exploration log for GP-6 indicated the presence of a "black asphalt type material" at approximately 4

feet below grade. The subsurface exploration log for GP-14 did not indicate the presence of obvious SVOC-contributing materials within the sampled depth interval; however at depths below 8 feet at this location, black soils were observed and a tar odor was noted.

5.4.4 Pesticides and PCBs in Subsurface Soils

Pesticides and PCBs were not detected at concentrations above the laboratory method detection limits in subsurface soil samples.

5.4.5 Metals in Subsurface Soils

Twenty-one (21) metals were detected in the subsurface soil samples above the laboratory method and/or instrument detection limits. However, none of these metals was detected at concentrations above applicable SCGs. Detected metals are listed in Table 6, included in the Tables section of the report. Metals detected in subsurface soil samples were not limited to a particular area (or areas) of the site, but rather were exhibited throughout the site at all of the sampling locations.

5.5 Groundwater

5.5.1 General

Twelve (12) groundwater monitoring wells, identified on Figure 2 as GP/CTM-1 to GP/CTM-10, GP/CTM-14 and GP/CTM-15, were installed as part of the sitewide subsurface/hydrogeologic investigation. Groundwater samples were collected from the wells and analyzed for TCL organics, pesticides, PCBs and TAL metals. The analytical results are discussed in the following subsections.

Summary tables of groundwater sampling results (which include detected compounds only) are presented as Tables 7 to 9 in the Tables section of the report.

5.5.2 Volatile Organic Compounds in Groundwater

VOCs were detected above the laboratory method detection limits in only one sample, CTM-15. A total of seven (7) VOCs were detected in this sample, six of which were at concentrations above their respective SCGs. VOCs detected above SCGs are summarized below in Table 5.5.2-1, are depicted in bold on Table 7 in the Tables section

of the report, and are also identified on the VOCs Above SCGs in Groundwater Samples map in Figure 11.

TABLE 5.5.2-1 VOCs Exceeding SCGs in Groundwater

VOC	SCG (ug/L)	Frequency of Exceeding SCGs	Concentration Range Exceeding SCGs (ug/L)	Sampling Location(s) Exceeding SCGs
Benzene	1	1 of 12	94	CTM-15
Toluene	5	1 of 12	5.1	CTM-15
Ethylbenzene	5	1 of 12	55	CTM-15
m/p-Xylenes	5	1 of 12	27	CTM-15
o-Xylene	5	1 of 12	22	CTM-15
Isopropylbenzene	5	1 of 12	13	CTM-15

(J) – Denotes an estimated value.

As shown in the table, VOCs exceeding SCGs were exhibited at CTM-15 only, located off-site, adjacent to the southeastern side of Broadway. This well is located in the vicinity of a former manufactured gas plant. Soils below the water table at this location were observed to contain black staining, and were noted as having a tar/creosote odor.

5.5.3 Semi-volatile Organic Compounds in Groundwater

One or more (up to fifteen) SVOCs were detected above the laboratory method detection limits in seven groundwater samples. Seven (7) SVOCs were detected above their respective SCGs, and are summarized below in Table 5.5.3-1, are depicted in bold on Table 8 in the Tables section of the report, and are also identified on the SVOCs Above SCGs in Groundwater Samples map in Figure 12.

TABLE 5.5.3-1 SVOCs Exceeding SCGs in Groundwater				
SVOC	SCG (ug/L)	Frequency of Exceeding SCGs	Concentration Range Exceeding SCGs (ug/L)	Sampling Location(s) Exceeding SCGs
Naphthalene	10	1 of 12	88	CTM-15
Acenaphthene	20	1 of 12	44	CTM-15
Benzo(a)anthracene	0.002	1 of 12	7.7 (J)	CTM-6
Chrysene	0.002	1 of 12	7.3 (J)	CTM-6
Benzo(b)fluoranthene	0.002	1 of 12	8.3 (J)	CTM-6
Benzo(k)fluoranthene	0.002	3 of 12	2.3 (J) to 4.5 (J)	CTM-6, CTM-8, CTM-15
Benzo(a)pyrene	ND	1 of 12	5.8 (J)	CTM-6

(J) - Denotes an estimated value.
ND denotes non-detect

As shown in the table, SVOCS in groundwater exceeding SCGs were limited to on-site locations CTM-6 and CTM-8 (on the central and northeastern portions of the site, respectively), and off-site location CTM-15. The location exhibiting the highest number of SVOCs above SCGs was CTM-6, followed by CTM-15, and then CTM-8, with only one compound above its SCG. Several SVOCs were also identified in the groundwater sample from CTM-14, though not above SCGs.

5.5.4 Pesticides and PCBs in Groundwater

Pesticides and PCBs were not detected above the method and instrument detection limits in any of the samples analyzed.

5.5.5 Metals in Groundwater

Eighteen (18) of the twenty-three (23) metals included in the TAL methodology were detected in groundwater samples at concentrations above the laboratory method detection limits. Eight (8) of these metals were detected at concentrations above their respective SCGs. Metals detected above SCGs are summarized below in Table 5.5.5-1, are shown in bold in Table 9 located in the Tables section of the report, and are also identified on the Metals Above SCGs in Groundwater Samples map in Figure 13.

TABLE 5.5.5-1: Metals Exceeding SCGs in Groundwater

Metal	SCG (ug/L)	Frequency of Exceeding SCGs	Concentration Range Exceeding SCGs (ug/L)	Sampling Location(s) Exceeding SCGs
Aluminum	100	6 of 12	144 (J) to 2,140	CTM-1, CTM-2, CTM-6, CTM-7 CTM-8, CTM-14
Antimony	3	3 of 12	10.7 (J) to 35.7 (J)	CTM-2, CTM-6, CTM-10
Cobalt	5	1 of 12	5.57 (J)	CTM-5
Iron	300	12 of 12	866 to 45,400	All Sample Locations
Lead	25	2 of 12	29.7 (J) to 56.8	CTM-6, CTM-8
Manganese	300	12 of 12	368 to 3,390	All Sample Locations
Mercury	0.7	1 of 12	6.22 (J)	CTM-8
Sodium	20,000	12 of 12	61,200 to 1,380,000	All Sample Locations

(J) - Denotes an estimated value.

5.6 Summary of Extent of Contamination

5.6.1 Near-Surface Soils

Pesticides and PCBs were not detected at concentrations above laboratory method detection limits in the analyzed near-surface soil samples.

One (1) volatile organic compound (methylene chloride) was detected at concentrations above the applicable SCG. It should be noted, however, that methylene chloride was also identified in the laboratory blank, indicating possible laboratory contamination of the environmental sample.

A total of six (6) semivolatile organic compounds (phenol, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene) were detected at concentrations exceeding their respective SCGs.

A total of eight (8) metals (calcium, copper, iron, magnesium, mercury, nickel and zinc) were detected at concentrations exceeding SCGs. Five (5) of the metals (calcium, copper, magnesium, mercury and zinc) were detected at concentrations exceeding their respective Eastern USA Background levels.

Exceedences of SVOC SCGs were most prevalent at sampling locations on the northwestern portion of the site (SS-9 through SS-12). Exceedences of metals SCGs were not exhibited in any particular area of the site, but rather at various locations across the site.

5.6.2 Subsurface Soils

Pesticides and PCBs were not detected at concentrations above laboratory method detection limits in the analyzed subsurface soil samples.

A total of three (3) volatile organic compounds (benzene, ethylbenzene and xylenes) were detected at concentrations exceeding their respective SCGs. The exceedences were limited to *off-site* location GP-15, adjacent to the southeastern side of Broadway.

A total of twelve (12) semi-volatile organic compounds (naphthalene, dibenzofuran, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)-fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene,

and dibenz(a,h)anthracene) were detected at concentrations exceeding their respective SCGs. Exceedences were exhibited at six locations on the site, and at both off-site locations. The largest number of individual SVOCs and highest concentrations were exhibited at on-site location GP-6 (4 to 6 feet below grade) and off-site location GP-14 (4 to 8 feet below grade).

A total of nine (9) metals (arsenic, beryllium, chromium, copper, iron, mercury, nickel, selenium, zinc) were detected at concentrations exceeding their respective SCGs. Three of the metals (copper, mercury, zinc) were at concentrations that also exceeded their corresponding Eastern USA Background levels at one or more locations. Exceedences of metals SCGs were not exhibited in any particular area of the site, but rather at various locations across the site.

5.6.3 Groundwater

Pesticides and PCBs were not detected in groundwater samples at concentrations above laboratory method detection limits.

Volatile organic compounds were not detected in groundwater at concentrations above laboratory method detection limits at *on-site* monitoring well locations. A total of six (6) volatile organic compounds were detected at concentrations exceeding their SCGs at *off-site* well location CTM-15, adjacent to the southeastern side of Broadway.

Semivolatile organic compounds were detected in groundwater at concentrations exceeding SCGs at two *on-site* locations (CTM-6, CTM-8) and one *off-site* location (CTM-15). Although these compounds were most numerous at CTM-6, located on the central portion of the site, the highest total concentration of these compounds was exhibited at CTM-15. Only one (1) SVOC was detected and was above its SCG at CTM-8.

A total of eight (8) metals (aluminum, antimony, cobalt, iron, lead, manganese, mercury, sodium) were detected in groundwater at concentrations exceeding SCGs. Metals SCGs were not exhibited in any particular area of the site, but rather at various locations across the site. Of particular interest, lead exceeded its SCG at CTM-6 and CTM-8, on the central and northeastern portions of the site, respectively. Mercury exceeded its SCG at CTM-8. Sodium exceeded its SCG at all sampled locations.

5.7 Past Site Activities Relative to Site Contaminants

Historical usages of the site have been commercial in nature. The site was once occupied by the Schenectady County Coal Company (central and western portions of the site), and a gasoline filling station (southernmost portion of the site). Historically, the site also once contained a building used for wagon painting. The site was also used as a pipe yard and public market. The site is underlain by various amounts of fill material, which consists primarily of sand, silt, gravel, ash, cinders and fragments of brick and concrete from just below the asphalt subbase material to depths of up to 8 feet below grade. The origin of the fill material is unknown. It should also be noted that a manufactured gas plant formerly existed on the adjacent property to the east of the site, across Broadway.

The following relates past site activities to contaminants identified during the RI.

- Fill materials on the site containing ash, cinders and tar-like material are a likely contributor to SVOC detections within this media, subsurface soil and groundwater.
- The former gasoline filling station represents a potential contributor to the organic contaminants identified on the southern portion of the site.
- Metals detected above SCGs and Eastern USA Background levels may be associated with application of road salt to the parking lot surface, may be naturally occurring in the environment and/or may be constituents of the site's underlying fill material.
- Former manufactured gas plant operations immediately east of Broadway represent a potential source of the VOCs and SVOCs detected in subsurface soil/fill and groundwater at CTM-14 and CTM-15.

5.8 Fish and Wildlife Impact Analysis (FWIA) Results

Based on the site's current use as a paved parking lot, its location and lack of any observable wildlife resources, the NYSDEC Project Manager determined that a Fish and Wildlife Impact Analysis (FWIA) was not required for this investigation.

5.9 Data Usability Summary Report

All of the site investigation analytical data has been independently validated in accordance with NYSDEC DUSR requirements. The analytical results tabulated herein reflect the results of the DUSRs and have been appropriately qualified. The DUSRs are presented in Exhibit 6 of this report.

6.0 CONTAMINANT FATE AND TRANSPORT

6.1 General Overview

The site-related contaminants, defined as those compounds exceeding SCGs, include: SVOCs in *on-site* and *off-site* (GP/CTM-14, GP/CTM-15) subsurface soil, and VOCs, SVOCs and metals in *on-site* and *off-site* groundwater. The contaminants are believed to be associated with the historic emplacement of fill on the site, the former commercial uses of the site, and the former presence of a manufactured gas plant immediately east of the site.

The fate and transport of the contaminants are based on the physical and chemical properties of the compounds and the site characteristics. This section defines and discusses the general characteristics of the contaminants which affect the fate and transport, the specific characteristics of the contaminants identified within the site, the site conditions which impact fate and transport, the transport off-site of the contaminants within the subsurface soils/fill, groundwater and soil vapor, and the fate of the contaminants in terms of transformation and degradation.

6.2 Definition of Relevant Properties

Characteristics which affect fate and transport include the compound's or analyte's density, organic carbon/water partition coefficient, solubility in water, volatility, and degradability. The following table (Table 6.2-1) presents various properties of the known contaminants of concern identified on the Site. The specific gravity of a contaminant describes the weight of the contaminant relative to water, where one is the weight of water. The semi-volatile organic compounds and metals identified in Table 6.2-1 have specific gravity values greater than one.

TABLE 6.2-1 - Physical and Chemical Properties of Site Contaminants

Compound	Density	Kow[1]	Koc[2]	Water Solubility[3]	Henry's Law Constant[4]
Semi-Volatile Organic Compounds:					
Acenaphthene	1.024	NDA	NDA	Insoluble	NDA
Benzo(a)anthracene	1.274	5.90	6.14	1.4E-02	2.30E-06

TABLE 6.2-1 - Physical and Chemical Properties of Site Contaminants					
Compound	Density	Kow(1)	Koc(2)	Water Solubility(3)	Henry's Law Constant(4)
Benzo(a)pyrene	1.3510	6.00	6.00	3.8E-03	2.4E-06
Benzo(b)fluoranthene	NDA	6.57	5.74	1.40E-02	1.20E-05
Benzo(k)fluoranthene	NDA	6.85	550,000	5.50E-04	1.04E-03
Chrysene	1.274	5.61	5.39	6E-03	7.26E-20
Naphthalene	1.145	3.30	NDA	Insoluble	4.83E-04
Metals:					
Aluminum	2.70	NA	NA	NDA	NA
Antimony	6.68	NA	NA	NDA	NA
Cobalt	8.9	NA	NA	NDA	NA
Lead	11.35	NA	NA	0.001	NA
Magnesium	1.74	NA	NA	NDA	NA
Mercury	13.53	NA	NA	2.0E-21	NA
Sodium	0.97	NA	NA	Decomposes	NA

References: Superfund Public Health Evaluation Manual; EPA/540/189/002; Hawley's Condensed Chemical Dictionary, Twelfth Edition; Howard, Philip H., Fate and Exposure Data for Organic Chemicals. Vols. 1&2. 1989; and Robert C. Knox and others, Subsurface Transport and Fate Processes, 1993; Wilson & Clarke, Hazardous Waste Site Soil Remediation, Theory and Application of Innovative Technologies, 1994.

NDA denotes no data available in cited references.

NA denotes not applicable.

(1) Log octanol/water partition coefficient.

(2) Organic carbon partition coefficient. Often a range is available rather than a single number.

(3) mg/l at 25 degrees C.

(4) Henry's Law constant, atm-m^3 / mole.

6.3 Contaminant Persistence

The organic carbon/water partition coefficient (Koc) indicates the tendency of an organic contaminant (VOCs and SVOCs) to sorb onto soil or sediment particles. Where the Koc is not experimentally available, it can be calculated based on the log octanol/water partition coefficient. The Koc multiplied by the organic carbon content of a given soil gives the estimated absorption partition coefficient (K_d) for that soil. Some absorption may occur between contaminants and inorganic soil or sediment particles, particularly clay. However, experimental data indicates that the absorption of nonionic, undissociated chemicals to inorganic soil or sediment is low. Once the sorption sites in soil are used up, mobility will usually increase to some extent.

Mobility is expected to be lowest in surface soils, which tend to have some organic

carbon. Below several feet in depth, the organic carbon content of soils is likely to be very low, and even a compound with a high Koc will be moderately mobile. However, fill containing organic materials such as ash, cinder or building rubble may have organic carbon levels that equal or exceed surface soils. The SVOCs have a wide range of organic carbon partition coefficient values that range from 5.39 for chrysene, indicating low sorption and high mobility, to 550,000 for benzo(k)fluoranthene, indicating medium to high sorption and low to medium mobility in soil.

The mobility of metals is affected by geologic conditions, and is often gauged by the environment's oxidation/reduction (redox) potential. As the pH and dissolved oxygen vary, the solubility of metals can change substantially. Generally, but not always, reductive conditions favor the solid phase of the metal, so a change toward reducing conditions can precipitate soluble metals, making them immobile.

Water solubility indicates the tendency of a compound to dissolve in and travel in water. The site contaminants (except for metals) have a wide range of solubilities, but are generally soluble. When contaminant concentrations are above approximately ten percent of the water solubility, a separate phase will tend to form. The water solubility values of the semi-volatile organic contaminants in groundwater vary, but are on the order of 0.00055 to 0.3 mg/l. Since the concentration of contaminants detected at the site are less than their corresponding water solubility values, separate phase layers are not likely to exist within the site. The majority of the metals of concern are nearly insoluble in water, with the exception of sodium, which readily dissolves in water.

Volatility in diffuse aqueous conditions such as those that occur in groundwater at the site is quantified by Henry's constant (K_h). The rate of volatilization increases as K_h increases. Volatility increases with decreases in atmospheric pressure, increase in temperature and when the compound vapor pressure is low relative to saturation. The contaminants of concern (with the exception of metals, which are not volatile) include semivolatile organic compounds, which will volatilize to some degree when unsaturated vapor, such as soil gas or the open atmosphere, are present.

Due to the composition of metals, they do not typically biodegrade. Lighter petroleum hydrocarbon contaminants biodegrade readily. The heavier, semi-volatile organic compounds biodegrade at a slower rate, primarily under anaerobic conditions. Biodegradation of SVOCs in soil/groundwater has been found to occur under aerobic

and to a lesser extent anaerobic conditions, such as occurs in groundwater. The presence of acclimatized microbes, which are likely to occur within the site, enhances biodegration of SVOCs. Acclimatized microbes are soil micro-organisms which have adapted themselves to the contaminants by producing enzymes to withstand toxic effects and to allow metabolism of the contaminants. Addition of nutrients and oxygen would be expected to increase the rate of biotic degradation.

6.4 Contaminant Migration

The potential routes of contaminant migration are through groundwater and the atmosphere. Depending on their solubility, contaminants could dissolve in groundwater and be transported in the direction of groundwater flow. Contaminants potentially present in the vapor phase of the unsaturated soil/fill zone could vertically migrate to the open atmosphere. VOCs, SVOCs and metals in near-surface soils/fill material could be transported to the atmosphere in the form of dust particulates should the asphalt surface cover be removed and this media be disturbed.

6.4.1 Groundwater Migration

Due to the presence of heavier than water semi-volatile organic compounds, migration of these contaminants may be occurring within lower portions of the aquifer. It is expected that these compounds will migrate in the direction of groundwater flow. The majority of the detected metals (with the exception of calcium and sodium) are insoluble in water and tend to adsorb and/or absorb to surrounding soil and fill particles; indicating a low propensity to migrate in the direction of groundwater.

Groundwater beneath the site generally flows towards the Mohawk River. Physical and chemical factors affecting the migration rate of contaminants include: the historical disposition of fill materials; natural biodegradation; bio-accumulation by organic materials; sorption onto soil and fill particles; and volatilization into the vadose zone and the unsaturated soils.

6.4.2 Atmospheric Migration

Site contaminants (SVOCs) in soil vapor will diffuse slowly upward and horizontally to unsaturated soil vapor. Although the site is almost entirely covered with asphalt pavement, it is possible that contaminants would migrate upward in the fill/near-

surface soil and diffuse to the atmosphere through cracks in the pavement and in areas were the pavement is absent. The rate of diffusion into the atmosphere depends on the differential in vapor saturation and on the atmospheric pressure. Under natural conditions, the differential is expected to be low within the soil. At the soil/atmosphere interface, the differential can change frequently, with great increases in differential causing contaminants to transport rapidly from surface soil to the atmosphere. Site contaminants which may volatilize from the site soils/fill to the atmosphere will disperse or abiotically degrade, with rates dependent on wind speed and levels of atmospheric radicals. Since the levels of contaminants are at relatively low levels, SVOC contaminants in the atmosphere are not expected to accumulate at detectable levels under existing conditions. Metals do not typically exhibit volatility and therefore would not likely enter the atmosphere unless site soils/fill were disturbed such that dust particles with metals adhered to them enter the atmosphere.

7.0 EXPOSURE ASSESSMENT

7.1 Qualitative Exposure Assessment

The purpose of the qualitative exposure assessment is to evaluate the potential for human exposure from site related contamination without any additional remediation. In performing the qualitative exposure assessment, the potential site related contaminants and the actual or potential exposure pathways were identified. The potentially exposed populations and the extent of actual or potential exposure were also evaluated.

The potential site-related contaminants were identified as those contaminants detected in various media at the site above SCGs. Potential exposure pathways for site contaminants are a function of the contaminant, the affected media, contaminant location and the potentially impacted population. The present potential exposure routes and pathways include the following:

- dermal contact and/or ingestion of potentially contaminated soil on-site;
- dermal contact and/or ingestion of contaminated groundwater generated from potential leaching of contaminants during storm water infiltration/percolation and then migrating with groundwater; and
- inhalation of dust and/or vapor emissions transported by wind.

The potential impacted populations at the site and vicinity include residents in the neighboring community, site visitors, trespassers on the site, workers engaged in subsurface excavation or other ground disturbance activity and construction workers during future site development.

Multiple semivolatile organic compounds were detected in subsurface soils/fill materials at concentrations exceeding SCGs. Disturbance of the subsurface soils/fill materials during future construction activities could potentially create airborne contaminants that may be inhaled and/or ingested. The potential for dermal contact, inhalation and ingestion of the impacted subsurface soil/fill material is, therefore,

anticipated to be high during construction activities but remains low at present, as the site is entirely covered with asphalt.

SVOCs were detected in groundwater at concentrations exceeding SCGs at two locations on the Site. Metals were detected at concentrations exceeding SCGs at locations across the Site. Considering that the depth to groundwater is greater than 4 feet below grade, the potential for dermal contact through exposure to groundwater and the associated impact is anticipated to be low, unless groundwater is encountered and subsequently disturbed during construction activities, where it may need to be evacuated and treated. Ingestion of the contaminated groundwater is unlikely since the area surrounding and downgradient of the Site is serviced by public water and no private water supply wells are known to exist on or in the vicinity of the Site.

8.0 SUMMARY AND CONCLUSIONS

8.1 Summary

The site investigation work tasks have been completed in substantial conformance with the Remedial Investigation/Alternatives Analysis (RI/AA) Work Plan for the Site, dated April 7, 2006. Any deviations to the Work Plan have been discussed within the body of this report.

8.1.1 Site Background

The site is currently developed as a municipal parking lot along the northwestern side of Broadway, between Clinton Street Extension and Hamilton Street. In addition to parking areas, the site also includes a vacant two-story building (referred to as the "Scale House" and an enclosed aboveground space (vault), with an earthen floor, at the southwestern corner of the site, recessed in a concrete retaining wall which runs along the western property boundary. A review of historical sources shows that prior to its current usage as a parking lot, the site was historically occupied by commercial buildings including stores, warehouses, garages, a gasoline filling station.

Based on the results of a Phase I Environmental Site Assessment (ESA) conducted by others in February 2004, a limited Phase II ESA was conducted on the site by C.T. Male in April 2004. Soil and groundwater samples submitted for laboratory analysis as part of the assessment showed the presence of volatile organic compounds at concentrations exceeding regulatory limits at sampling locations in the areas of the former gasoline filling station

8.1.2 Physical Characteristics of the Project Site

The project site consists of an asphalt-paved parking lot, with landscaped areas, guardrails and pole-mounted lights. The site is generally flat and level. Subsurface lithology on the site consists of fill material of variable composition (sand, silt, gravel, ash, cinders, fragments of brick and concrete) from just below the asphalt subbase material to depths up to 8 feet below grade, underlain by fine to coarse sand and silt to depths up to 16 feet below grade (explored depth range). Bedrock was not encountered within the explored depth range.

Surface water bodies are not located on the site. The Mohawk River is approximately 0.6 mile northwest of the site, and flows generally eastward to where it joins the Hudson River.

Storm water generated during the course of precipitation events is directed toward on-site storm drains and catch basins which are connected to the City of Schenectady municipal storm sewer system.

Groundwater was encountered on the site at depths ranging from approximately 5 to 7 feet below existing grades, and overall shallow groundwater flow direction across the site is inferred to be generally toward the west or northwest, toward the Mohawk River.

8.1.3 Fish and Wildlife Impact Analysis (FWIA)

Based on the site's current use as a paved parking lot, its location and lack of any observable wildlife resources, the NYSDEC Project Manager determined that a Fish and Wildlife Impact Analysis (FWIA) was not required as part of this investigation.

8.1.4 Survey of Public and Private Wells

According to information from the City of Schenectady and the Schenectady County Health Department, the area of the project site is served by the City of Schenectady's municipal water supply system. Private water supply wells are reportedly not located on or in the vicinity of the project site.

8.1.5 Nature and Extent of Contamination

The primary contaminants of concern *on* the Site are SVOCs in subsurface soil/fill material, and SVOCs and metals in groundwater. Contaminants of concern at the *off-site* locations (GP/CTM-14, CP/CTM-15) include SVOCs in subsurface soil/fill material, and VOCs, SVOCs and metals in groundwater. The following summarizes the nature and extent of contamination for the project site per media type.

Near-Surface Soils

Twelve (12) near-surface soil samples were collected as part of the RI. Pesticides and PCBs were not detected at concentrations above laboratory method detection limits in near-surface soil samples. Although some VOCs, SVOCs and metals were detected in near-surface soil samples at concentrations above the laboratory method detection limits, the detected concentrations were not above applicable SCGs.

Subsurface Soils and Fill Material

Twelve (12) samples of subsurface soils/fill were submitted for laboratory analyses during the RI.

Pesticides, PCBs, VOCs and metals were not detected in subsurface soil samples at concentrations exceeding SCGs.

Four (4) SVOCs were detected above SCGs at varying frequencies in subsurface soil samples from three (3) *on-site* locations (GP/CTM-1, GP/CTM-6, GP/CTM-7) and the two *off-site* locations (GP/CTM-14, GP/CTM-15). The highest numbers of individual SVOCs and the highest concentrations were exhibited at GP-6, on the central portion of the site. The subsurface exploration log for this location indicated the presence of a black asphalt type material near the top of the sample depth interval. The locations exhibiting the next highest concentrations of SVOCs were off-site locations GP-14 and GP-15. The subsurface exploration logs for these locations noted the presence of black soils and tar/creosote odors within the sampled depth intervals.

Groundwater

Twelve (12) groundwater samples were collected and submitted for laboratory analyses during the RI.

Pesticides and PCBs were not detected at concentrations above SCGs in groundwater samples. VOCs were not detected above SCGs at *on-site* locations; however, five (5) VOCs were detected above SCGs at *off-site* location CTM-15.

A total of six (6) SVOCs were detected above SCGs. Exceedences of SCGs were exhibited at three monitoring well locations: on-site locations CTM-6 (five SVOCs) and CTM-8 (one SVOC); and off-site location CTM-15 (3 SVOCs).

Five (5) metals were detected above SCGs at varying frequencies at monitoring well locations across the site. Of particular interest, the concentration of mercury was abnormally elevated at the location of CTM-8, on the northeastern portion of the site.

8.1.6 Fate and Transport

The primary contaminants of concern on the Site are SVOCs in subsurface soils/fill material on the central and southern portion of the Site, SVOCs in groundwater on the central and northeastern portions of the Site, and metals in groundwater across the Site.

The SVOCs in subsurface soil/fill will tend to adhere to surrounding soil and fill particles, and may volatilize to the atmosphere should the soils/fill be disturbed.

Metals in groundwater (except calcium and sodium, which decompose in water) are expected to adhere to surrounding soil and fill particles and will not necessarily follow groundwater flow direction nor volatilize to the vadose zone.

The transport mechanisms for the contaminants present at the site are migration within the groundwater and/or volatilization into the atmosphere. The SVOCs identified within the soil and fill materials may be dispersed to the atmosphere should this media be disturbed. However, should the SVOCs migrate downward into the groundwater, they will tend to sink to the bottom of the aquifer to a less permeable soil type (silt/clay) and migrate in the direction of groundwater flow and/or the surface of the less permeable unit. Most metals are strongly held, reducing their migration and extent of contamination, with the exception of calcium and sodium, which readily dissolve in groundwater.

8.2 Conclusions

Analytical results from sampling of near-surface soil, subsurface soil and groundwater at locations on the southern portion of the Site (general vicinity of the former gasoline filling station) indicated that gasoline-related VOCs were not detected in these media at concentrations above laboratory method detection limits.

Subsurface soil analytical results indicate that detected SVOCs on the Site, and in particular, those above SCGs, are most prevalent within the depth range of the fill material (up to 8 feet below grade) on the Site. SVOCs above SCGs appear to be most

concentrated on the central/southern portion of the Site (GP-1, GP-6, GP-7), and at the two *off-site* locations adjacent to the southeastern side of Broadway (GP-14 and GP-15).

Groundwater analytical results indicate the presence of VOCs and SVOCs above SCGs at one of the *off-site* locations (CTM-15). SVOCs above SCGs in groundwater on the Site were limited to the central portion of the Site (CTM-6), and the northeastern portion of the Site (CTM-8). The presence of only trace levels of these compounds in groundwater at the locations on the southeastern portion of the Site (CTM-1 through CTM-4) suggests fill materials as a likely source of the SVOCs in groundwater in the vicinity of CTM-6. The presence of creosote-type odors in soils on the southern portion of the Site (GP-5) is consistent with previous investigation findings. The report of the 2004 limited Phase II assessment indicated that soil samples collected at three test boring/monitoring well locations on the southern portion of the Site, from a depth range of 6 to 20 feet below grade, were noted as having a creosote-type odor. Groundwater sampling results from monitoring wells MW-3 (on the south-central portion of the Site, south of CTM-6), and MW-1 (in the southern corner of the Site, south-southeast of CTM-6), showed the presence of several SVOCs at concentrations above SCGs. Based on the recent groundwater elevation data, the apparent southward component of shallow groundwater flow on the southern portion of the Site further suggests on-site fill materials as a source of the SVOCs in groundwater in the vicinity of CTM-6.

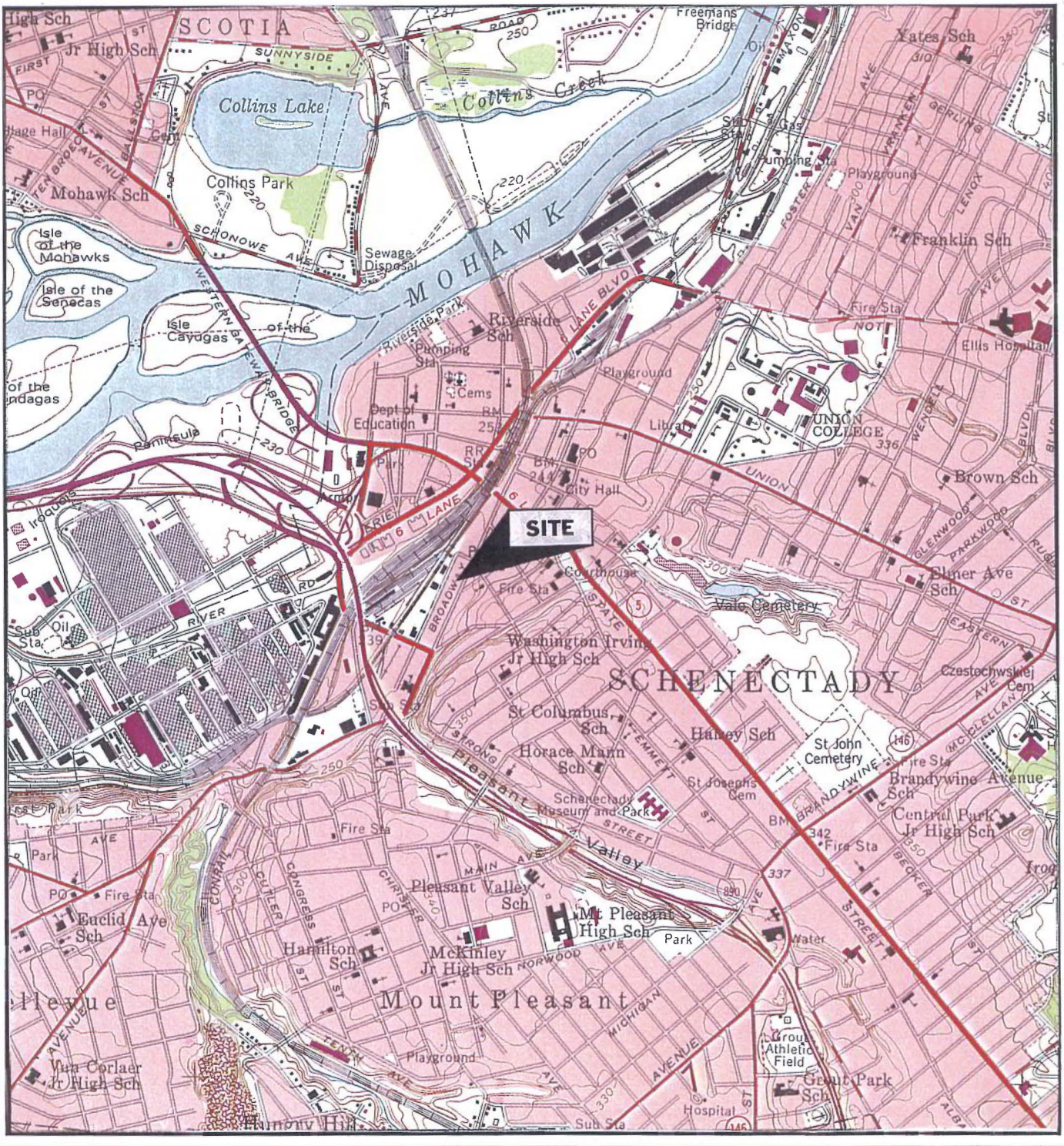
Based upon the findings of this site investigation, additional subsurface investigative activities are warranted for two areas of the Site: 1) within the aboveground vault at the western corner of the Site, based on the results of recent surface soil sampling, which indicated the presence of PCBs, SVOCs and metals at concentrations above SCGs; and 2) on the northwestern portion of the Site, in the area of the former garage structure, based on further review of historical Sanborn Fire Insurance Maps (subsequent to submittal of the RI Work Plan) which indicate the former presence of a gasoline UST in this area (see section 2.4). Multiple attempts were made to complete a test boring/monitoring well in the area to the south and west of the tank location during the RI (GP-11); however refusal was encountered at depths of 4 feet below grade or less at these locations. The additional investigative efforts will be focused on the area in the immediate vicinity of the tank location, as depicted on the historical maps. The findings of the additional investigative activities will be submitted as an addendum to this report.

With the exception of the aboveground vault and the area in the vicinity of the former garage structure, as noted above, the site investigation has adequately delineated the presence and extent of the contaminants of concern identified for the site. Further investigations may be necessary during the design phase of the selected remedial actions to refine the areas of concern and gather additional information necessary to complete the remedial design. However, the existing data is considered to be sufficient for the preparation of the Alternatives Analysis Report (AAR). The AAR presents and discusses potential options for addressing the contaminants of concern.

8.2.1 Data Limitations and Disclaimer

All of the site investigation analytical data has been independently validated in accordance with NYSDEC DUSR requirements. The DUSRs did not reject any of the analytical data and declared that all analytical results are considered usable with minor edits/qualifications. Modifications of analytical results pursuant to review of the DUSRs have been incorporated where necessary on the analytical summary tables. The narrative portions of the DUSRs are presented in Exhibit 2 of this report.

FIGURES



MAP REFERENCE
United States Geological Survey
7.5 Minute Series Topographic Map
Quadrangle: Schenectady, NY
Date: 1980

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SURVEYING
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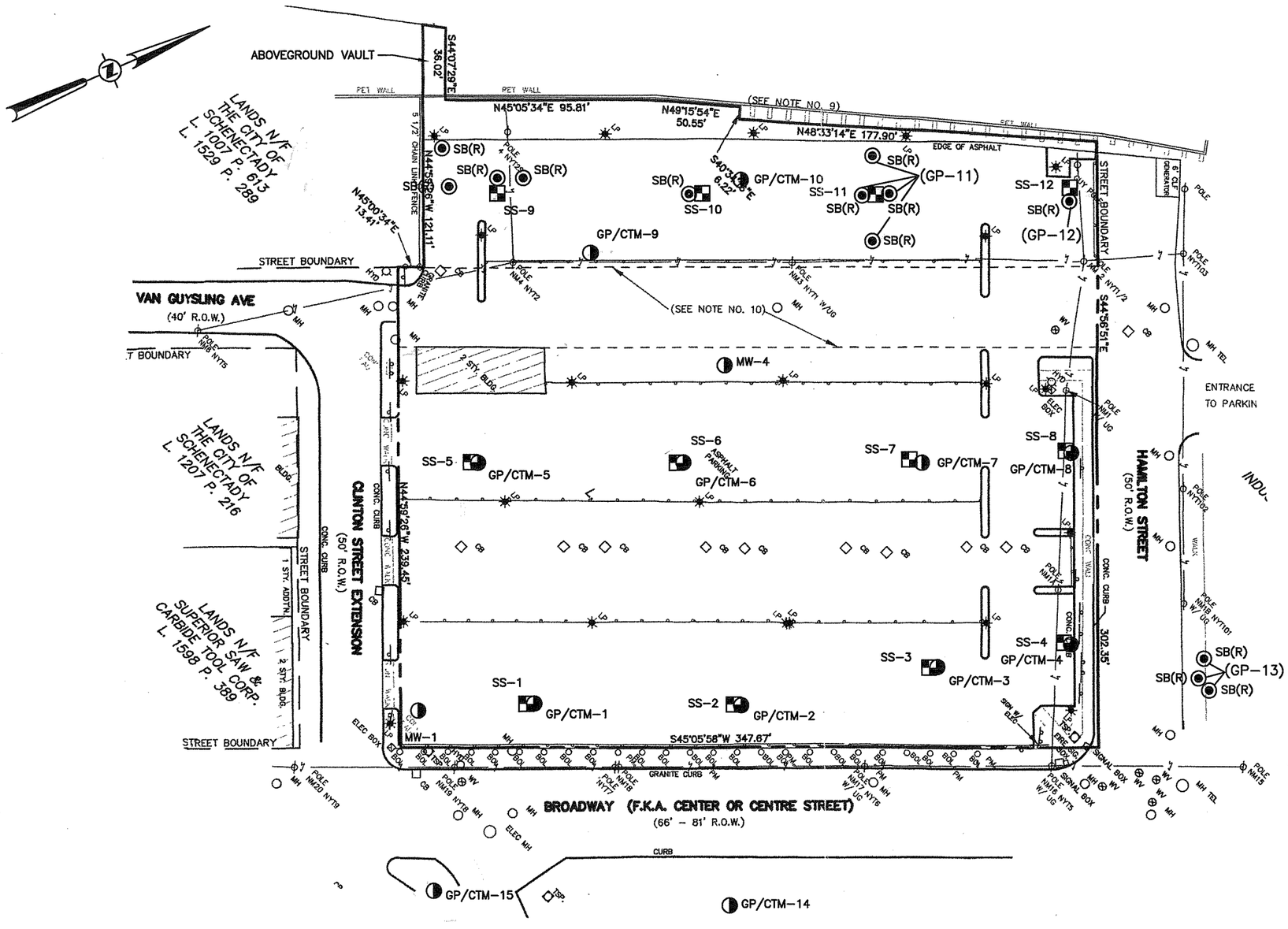
FAX (518) 786-7299

C.T.MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, PO BOX 727, LATHAM, NY 12110

FIGURE 1 - SITE LOCATION MAP

LOWER BROADWAY PARKING LOT

CITY OF SCHENECTADY	SCHENECTADY COUNTY, NY
SCALE: 1"=2,000'	
DRAFTER: ASG	
PROJECT No. 04.9227	



MAP NOTES

1. North orientation and bearing base per map reference No. 1.
2. Boundary and planimetric features shown are images taken from map reference No. 1., not a result of an actual field survey.
3. Monitoring well locations and soil sample locations shown were a result of an actual field survey prepared by the undersigned.
4. Soil borings shown are approximate and not a result of an actual field location.

MAP REFERENCE

1. "Plat of Survey of Land situate at Lower Broadway Tax Map Reference: 039.79-2-14.1," City of Schenectady County of Schenectady, State of New York. Prepared by Clough Harbour & Associates LLP, dated 2-16-04.

LEGEND

∘ BOL	BOLLARD
□ CB	CATCH BASIN
∘ GV	GAS VALVE
◁ HYD	HYDRANT
✳ LP	LIGHT POLE
○ MH	MISCELLANEOUS MANHOLE
⌀ NM15	UTILITY POLE
∘ WV	WATER VALVE
◐ CTM-1	MONITORING WELL LOCATION (WELLS INSTALLED BY C.T. MALE APRIL 2006)
◐ MW-1	MONITORING WELL LOCATION (WELLS INSTALLED BY C.T. MALE APRIL/MAY 2004)
◉ SB(R)	SOIL BORING WHERE REFUSAL WAS ENCOUNTERED AT APPROX. 4 FEET OR LESS (C.T. MALE MAY 2004)
▚ SS	NEAR-SURFACE SOIL SAMPLE LOCATION (SAMPLES COLLECTED BY C.T. MALE MAY 2006)

BAR SCALE

60 0 30 60 120

1 inch = 60 ft.

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UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

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DRAFTED : S.WUNSCH
CHECKED : J.FAVREAU
PROJ. NO: 05.5550
SCALE : 1"=60'
DATE : JUNE 6, 2006

FIGURE 2A
MONITOR WELL/SAMPLING LOCATIONS

ENVIRONMENTAL RESTORATION PROGRAM INVESTIGATION
LOWER BROADWAY PARKING LOT/312 BROADWAY

CITY OF SCHENECTADY SCHENECTADY COUNTY, NY.

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SHEET 1 OF 9
DWG. NO: 07-140

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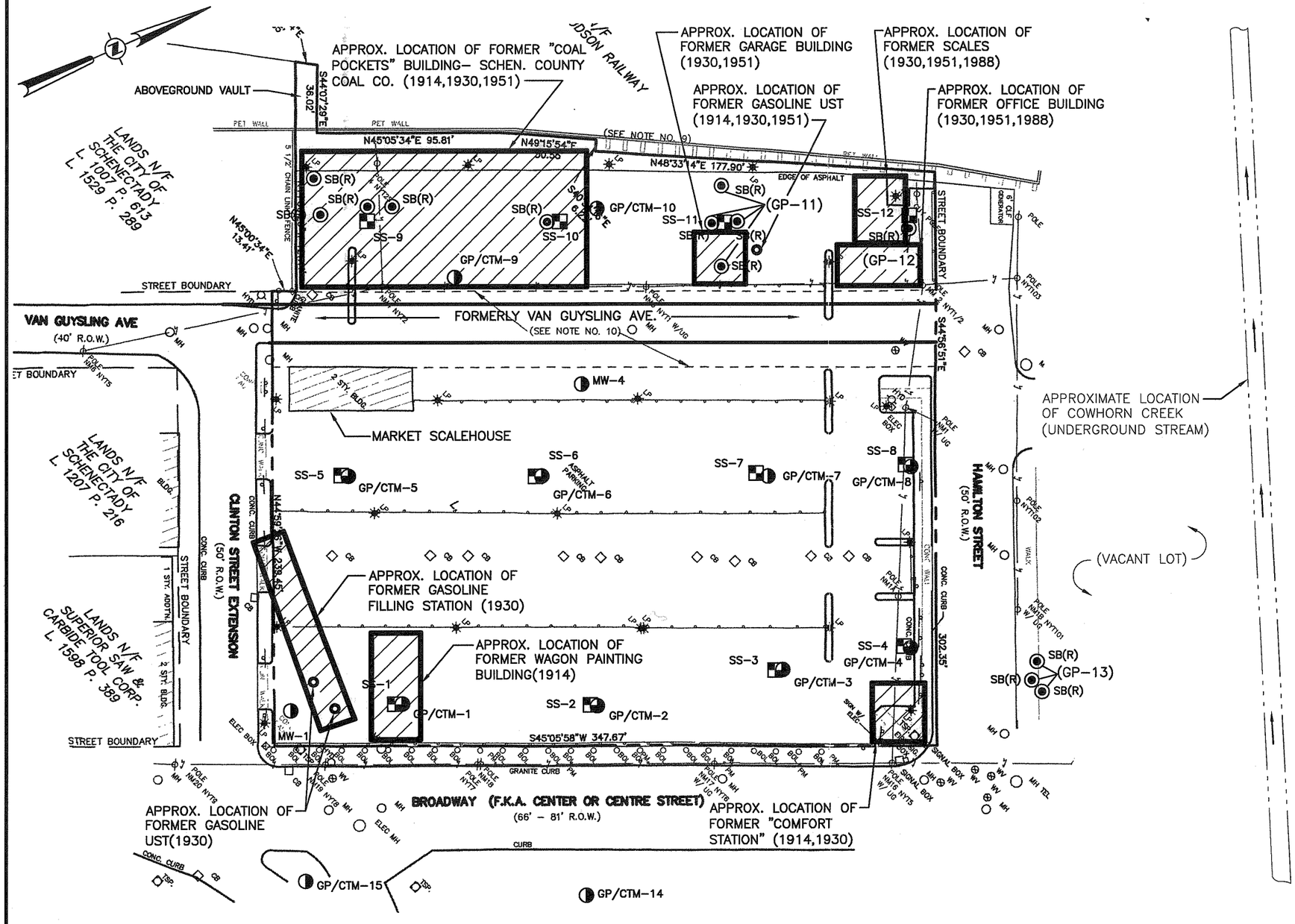

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4. Soil borings shown are approximate and not a result of an actual field location.
5. The locations of historical site features & structures are approximate, and are based on review of historical Sanborn Fire Insurance Maps.

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SCALE : 1"=60'
DATE : NOV 30, 2006

FIGURE 2B
HISTORICAL SITE FEATURES & STRUCTURES

ENVIRONMENTAL RESTORATION PROGRAM INVESTIGATION LOWER BROADWAY PARKING LOT/312 BROADWAY

CITY OF SCHENECTADY — SCHENECTADY COUNTY, NY.

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SHEET 2 OF 9
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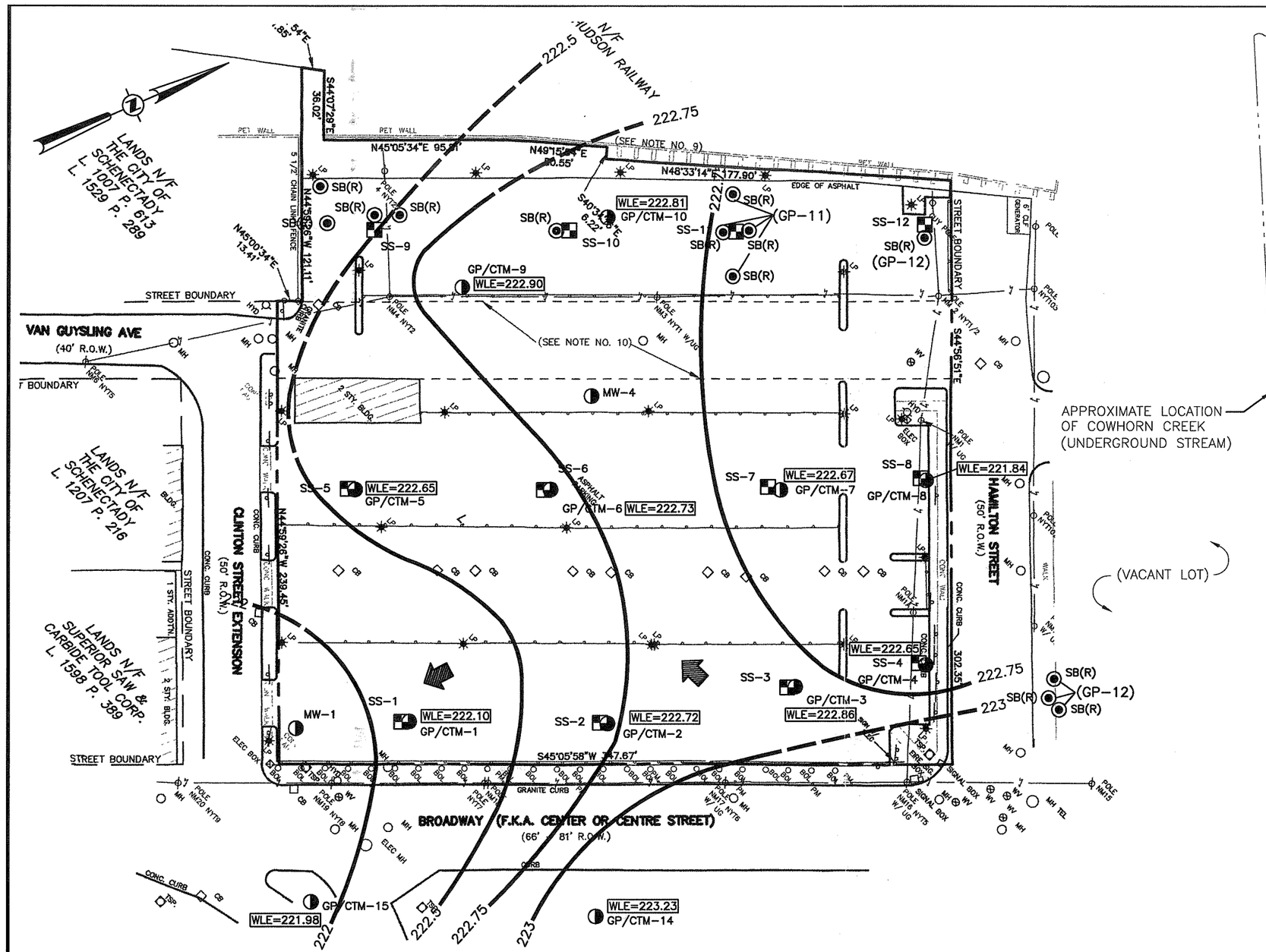

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WLE=222.86	DENOTES WATER LEVEL ELEVATION (FEET ABOVE MEAN SEA LEVEL)
—— 222 ——	GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
	INDICATES INFERRED DIRECTION OF GROUNDWATER FLOW

BAR SCALE

60 0 30 60 120

1 inch = 60 ft.

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DRAFTED : S.WUNSCH

CHECKED : J.FAVREAU

PROJ. NO: 05.5550

SCALE : 1"=60'

DATE : NOV 8, 2006

FIGURE 3
GROUNDWATER COUNTOUR MAP - JUNE 13, 2006

ENVIRONMENTAL RESTORATION PROGRAM INVESTIGATION
LOWER BROADWAY PARKING LOT/312 BROADWAY

CITY OF SCHENECTADY — SCHENECTADY COUNTY, NY.

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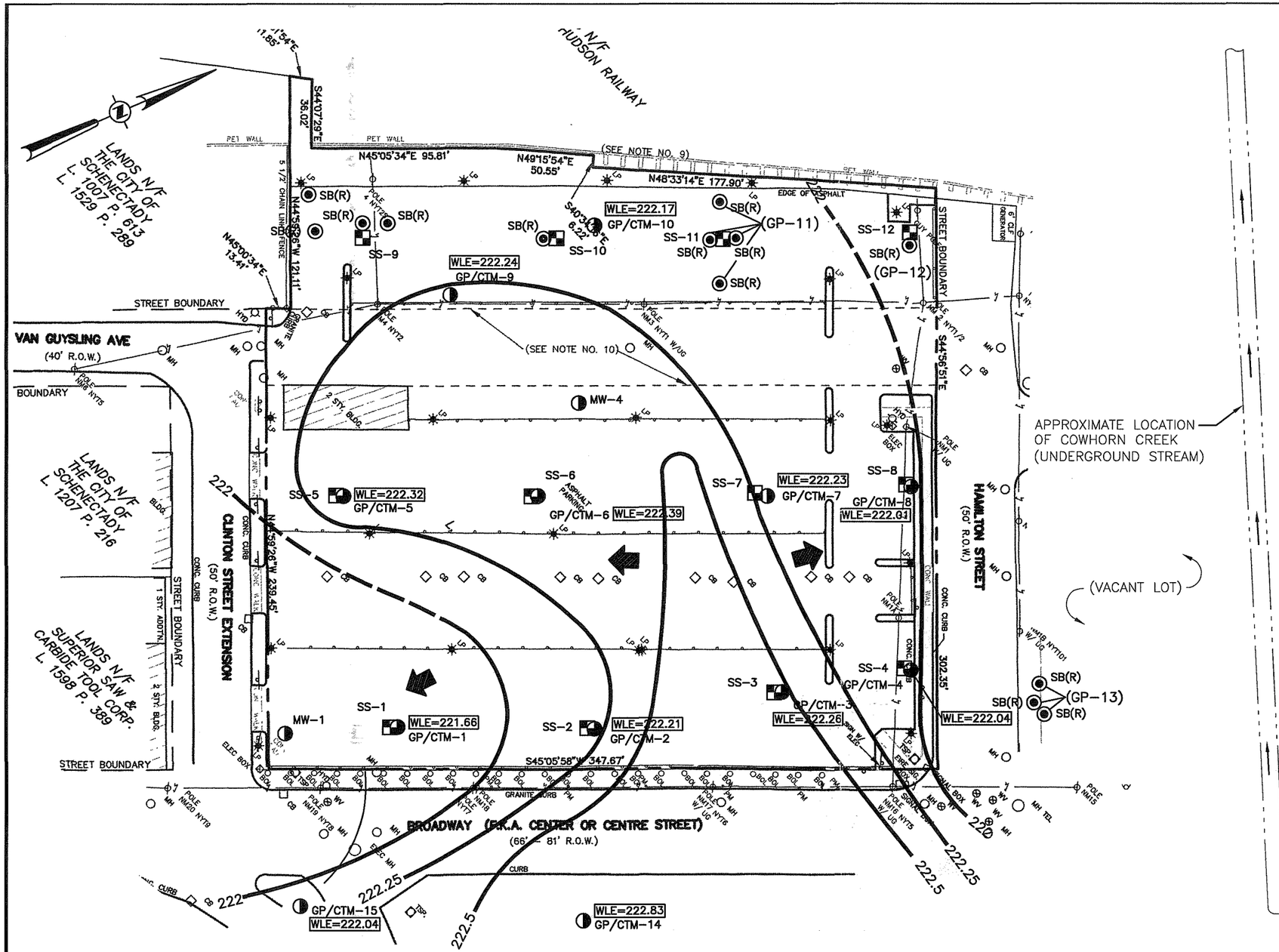
SHEET 3 OF 9

DWG. NO: 07–140



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◉ SB(R)	SOIL BORING WHERE REFUSAL WAS ENCOUNTERED AT APPROX. 4 FEET OR LESS (C.T. MALE MAY 2006)
▪ SS	NEAR–SURFACE SOIL SAMPLE LOCATION (SAMPLES COLLECTED BY C.T. MALE MAY 2006)
WLE=222.86	DENOTES WATER LEVEL ELEVATION (FEET ABOVE MEAN SEA LEVEL)
222	GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
	INDICATES INFERRED DIRECTION OF GROUNDWATER FLOW

BAR SCALE

60 0 30 60 120

1 inch = 60 ft.

CAD DWG. FILE NAME:I_FINAL_GW_CONTOURS.DWG

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APPROVED:

DRAFTED : S.WUNSCH

CHECKED : J.FAVREAU

PROJ. NO: 05.5550

SCALE : 1"=60'

DATE : NOV 8, 2006

FIGURE 4
GROUNDWATER COUNTOUR MAP - AUGUST 2, 2006

ENVIRONMENTAL RESTORATION PROGRAM INVESTIGATION
LOWER BROADWAY PARKING LOT/312 BROADWAY

CITY OF SCHENECTADY — SCHENECTADY COUNTY, NY.

C.T. MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, P.O. BOX 727, LATHAM, NY 12110
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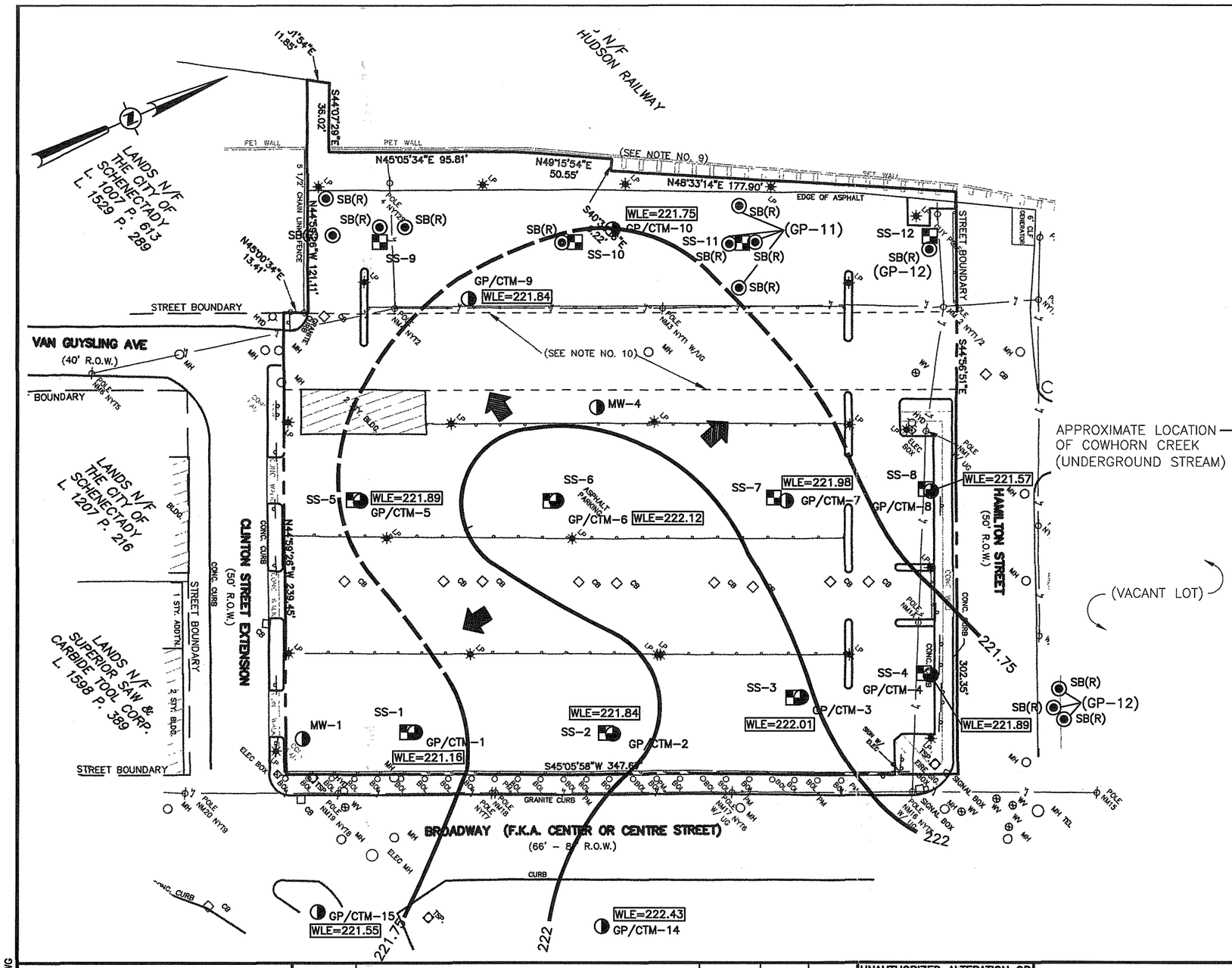

MAP NOTES

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2. Boundary and planimetric features shown are images taken from map reference No. 1., not a result of an actual field survey.
3. Monitoring well locations and soil sample locations shown were a result of an actual field survey prepared by the undersigned.
4. Soil borings shown are approximate and not a result of an actual field location.

MAP REFERENCE

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LEGEND

○ BOL	BOLLARD
□ CB	CATCH BASIN
○ GV	GAS VALVE
⊀ HYD	HYDRANT
✳ LP	LIGHT POLE
○ MH	MISCELLANEOUS MANHOLE
⊀ NM15	UTILITY POLE
○ WV	WATER VALVE
◑ CTM–1	MONITORING WELL LOCATION (WELLS INSTALLED BY C.T. MALE APRIL 2006)
◑ MW–1	MONITORING WELL LOCATION (WELLS INSTALLED BY C.T. MALE APRIL/MAY 2006)
◉ SB(R)	SOIL BORING WHERE REFUSAL WAS ENCOUNTERED AT APPROX. 4 FEET OR LESS (C.T. MALE MAY 2006)
▪ SS	NEAR–SURFACE SOIL SAMPLE LOCATION (SAMPLES COLLECTED BY C.T. MALE MAY 2006)
WLE=222.86	DENOTES WATER LEVEL ELEVATION (FEET ABOVE MEAN SEA LEVEL)
222	GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
	INDICATES INFERRED DIRECTION OF GROUNDWATER FLOW

BAR SCALE
60 0 30 60 120
1 inch = 60 ft.

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APPROVED:
DRAFTED : S.WUNSCH
CHECKED : J.FAVREAU
PROJ. NO: 05.5550
SCALE : 1"=60'
DATE : NOV 8, 2006

FIGURE 5
GROUNDWATER COUNTOUR MAP - SEPTEMBER 1, 2006

ENVIRONMENTAL RESTORATION PROGRAM INVESTIGATION
LOWER BROADWAY PARKING LOT/312 BROADWAY

CITY OF SCHENECTADY — SCHENECTADY COUNTY, NY.

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SHEET 5 OF 9
DWG. NO: 07–140

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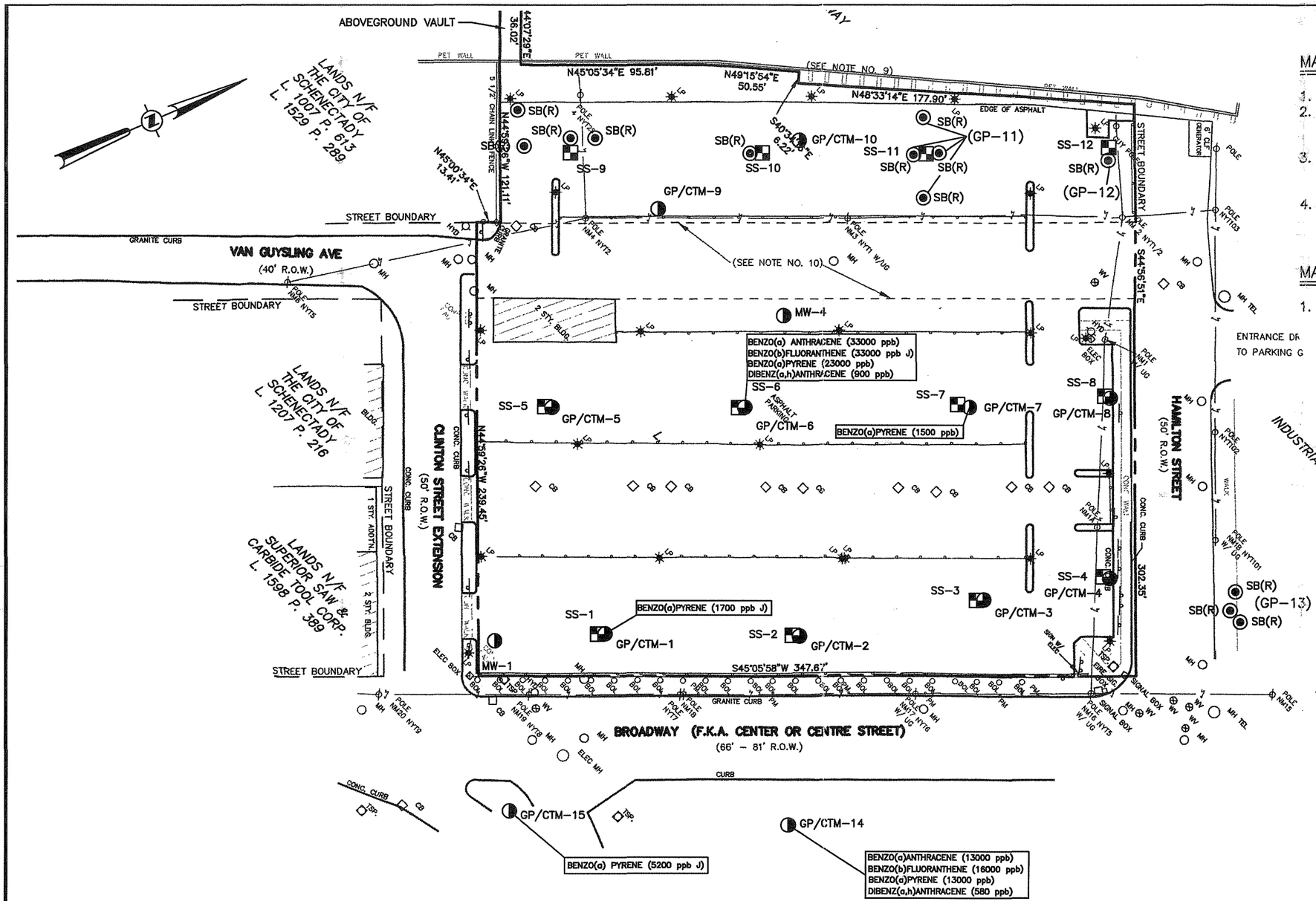

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LEGEND

BOL	BOLLARD
CB	CATCH BASIN
GV	GAS VALVE
HYD	HYDRANT
LP	LIGHT POLE
MH	MISCELLANEOUS MANHOLE
NM15	UTILITY POLE
WV	WATER VALVE
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MW–1	MONITORING WELL LOCATION (WELLS INSTALLED BY C.T. MALE APRIL/MAY 2004)
SB(R)	SOIL BORING WHERE REFUSAL WAS ENCOUNTERED AT APPROX. 4 FEET (C.T. MALE MAY 2004)
SS	NEAR–SURFACE SOIL SAMPLE LOCATION (SAMPLES COLLECTED BY C.T. MALE MAY 2006)
PPB	PARTS PER BILLION
J	ESTIMATED CONCENTRATION

BAR SCALE

60 0 30 60 120

1 inch = 60 ft.

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APPROVED:

DRAFTED : S.WUNSCH

CHECKED : J.FAVREAU

PROJ. NO: 05.5550

SCALE : 1"=60'

DATE : JAN 15, 2007

FIGURE 6
SVOCs ABOVE SCGs IN SUBSURFACE SOIL SAMPLES

ENVIRONMENTAL RESTORATION PROGRAM INVESTIGATION
LOWER BROADWAY PARKING LOT/312 BROADWAY

CITY OF SCHENECTADY — SCHENECTADY COUNTY, NY.

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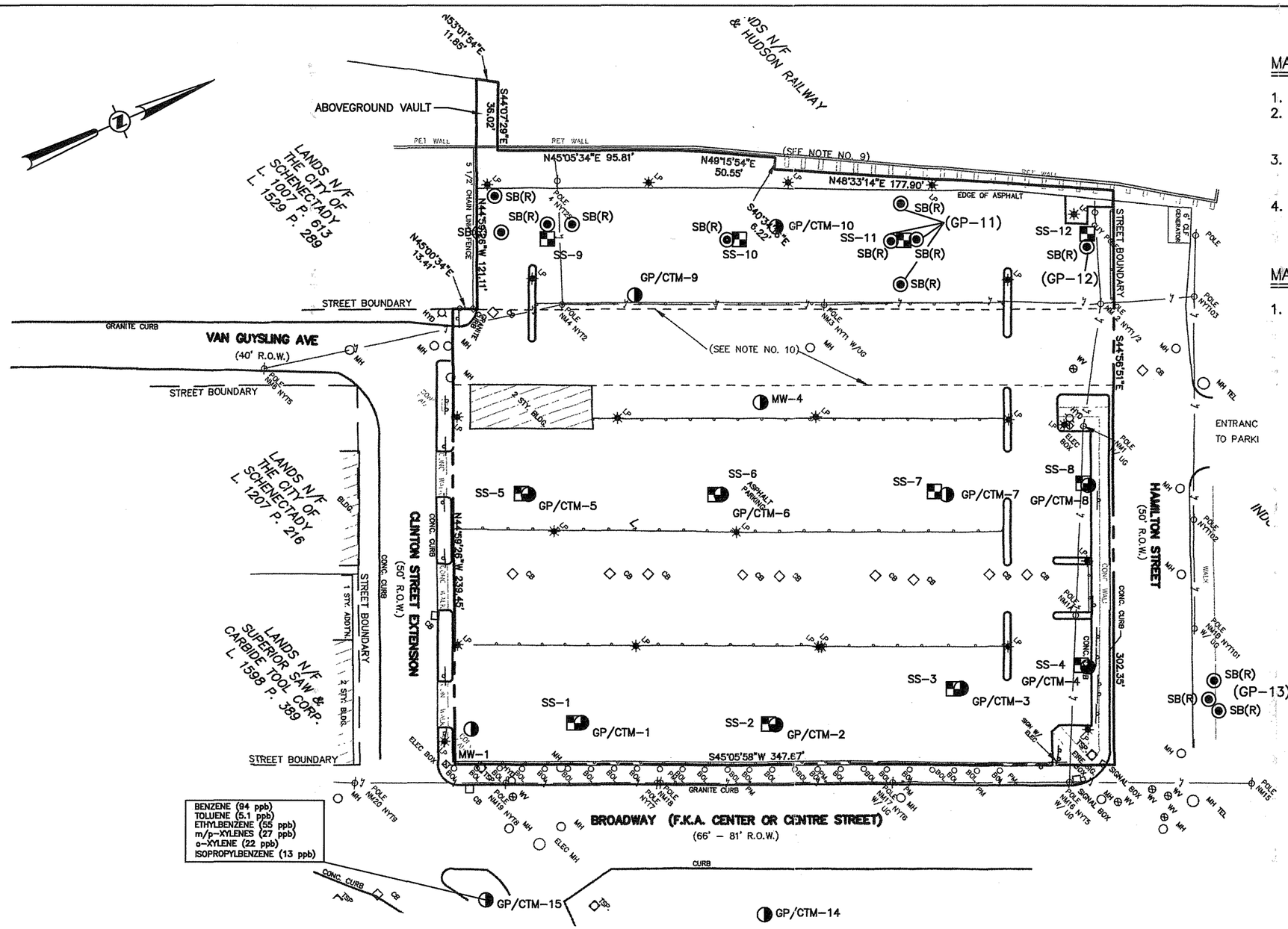
SHEET 6 OF 9

DWG. NO: 07–140

CAD DWG. FILE NAME:I_FINAL_HAMILTON.DWG



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PPB	PARTS PER BILLION

BAR SCALE
60 0 30 60 120
1 inch = 60 ft.

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APPROVED:
DRAFTED : S.WUNSCH
CHECKED : J.FAVREAU
PROJ. NO: 05.5550
SCALE : 1"=60'
DATE : SEPT 15, 2006

FIGURE 7
VOCs ABOVE SCGs IN GROUNDWATER SAMPLES

ENVIRONMENTAL RESTORATION PROGRAM INVESTIGATION
LOWER BROADWAY PARKING LOT/312 BROADWAY

CITY OF SCHENECTADY — SCHENECTADY COUNTY, NY.

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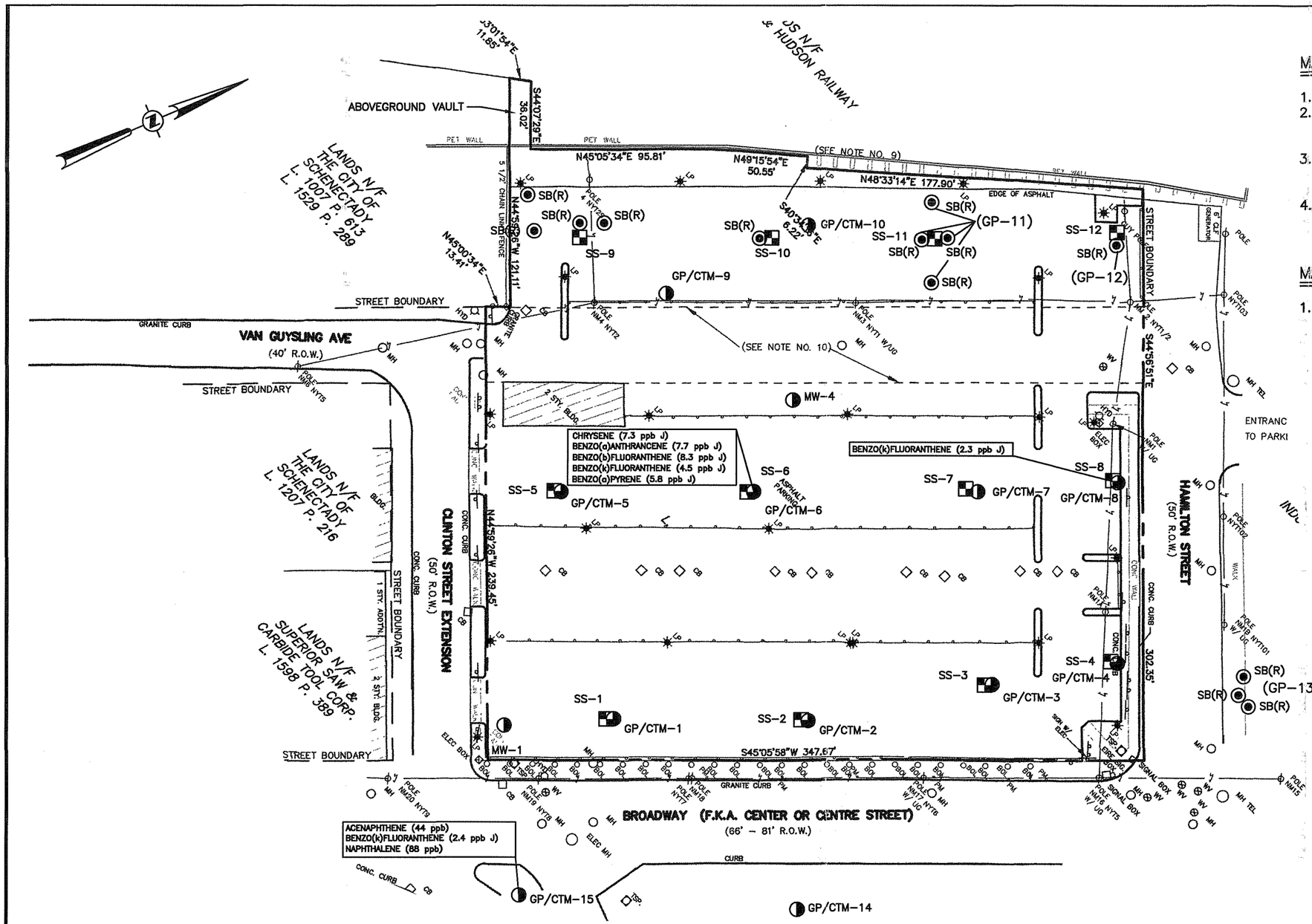
SHEET 7 OF 9
DWG. NO: 07-140

CAD DWG. FILE NAME: I_FINAL_HAMILTON.DWG



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PPB	PARTS PER BILLION
J	ESTIMATED CONCENTRATION

BAR SCALE

60 0 30 60 120

1 inch = 60 ft.

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTED	CHECK	APPR.
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APPROVED:

DRAFTED : S.WUNSCH

CHECKED : J.FAVREAU

PROJ. NO: 05.5550

SCALE : 1"=60'

DATE : SEPT 15, 2006

FIGURE 8
SVOCs ABOVE SCGs IN GROUNDWATER SAMPLES

ENVIRONMENTAL RESTORATION PROGRAM INVESTIGATION
LOWER BROADWAY PARKING LOT/312 BROADWAY

CITY OF SCHENECTADY — SCHENECTADY COUNTY, NY.

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SHEET 8 OF 9

DWG. NO: 07–140

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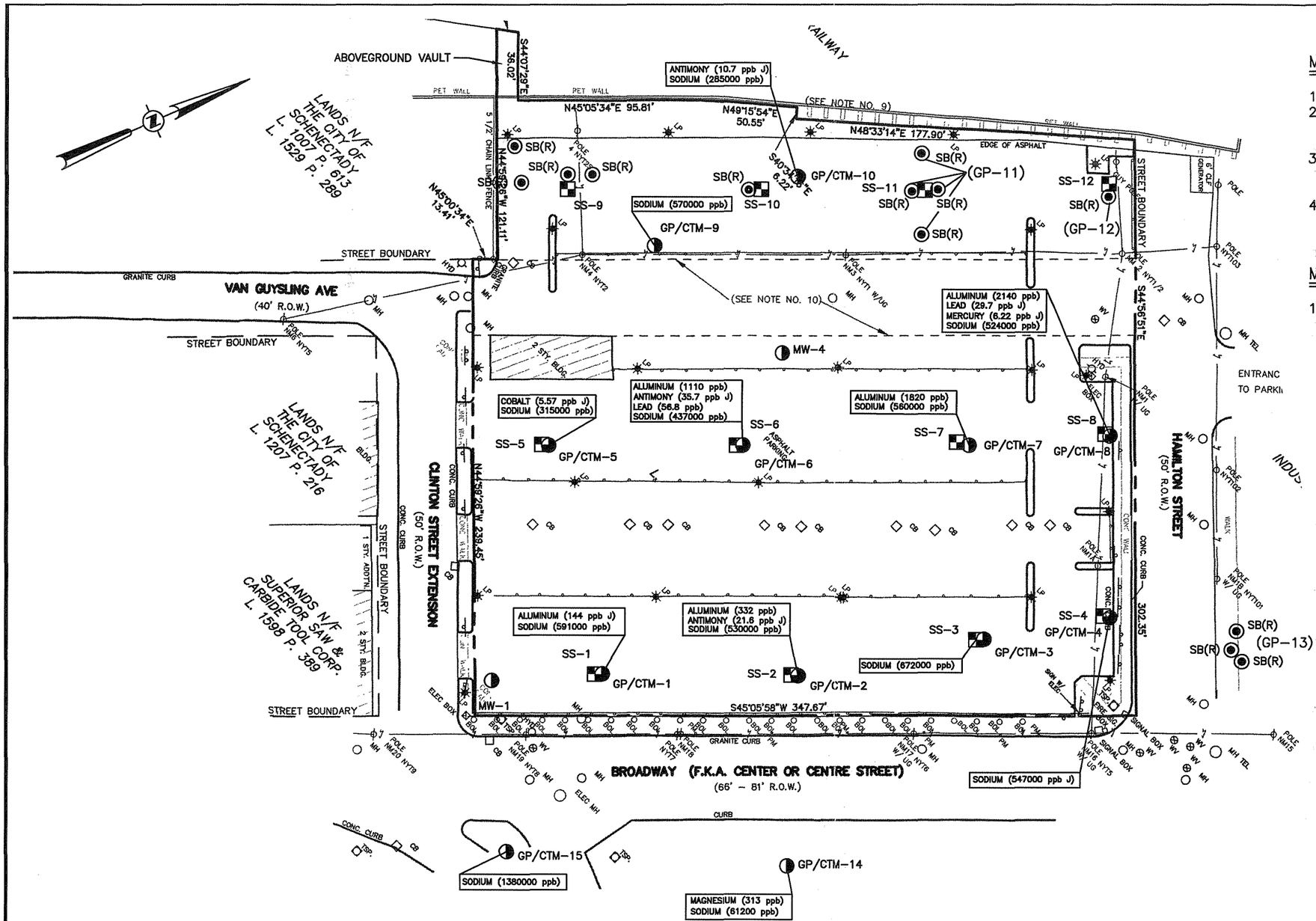

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PPB	PARTS PER BILLION
J	ESTIMATED CONCENTRATION

BAR SCALE

60 0 30 60 120

1 inch = 60 ft.

DATE	REVISIONS RECORD/DESCRIPTION	DRAFTED	CHECK	APPR.
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APPROVED:

DRAFTED : S.WUNSCH

CHECKED : J.FAVREAU

PROJ. NO: 05.5550

SCALE : 1"=60'

DATE : SEPT 15, 2006

FIGURE 9
TAL METALS ABOVE SCGs IN GROUNDWATER

ENVIRONMENTAL RESTORATION PROGRAM INVESTIGATION
LOWER BROADWAY PARKING LOT/312 BROADWAY

CITY OF SCHENECTADY — SCHENECTADY COUNTY, NY.

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SHEET 9 OF 9

DWG. NO: 07-140

CAD DWG. FILE NAME: RI_FINAL_HAMILTON.DWG

TABLES

TABLE 1
LOWER BROADWAY PARKING LOT / 312 BROADWAY
SCHENECTADY, NEW YORK

REMEDIAL INVESTIGATION
NEAR-SURFACE SOIL ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
(DETECTED COMPOUNDS ONLY)

Sample ID			SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	DUP-2	SS-9	SS-10	SS-11	SS-12	EQUIPBLANK-2
Lab Sample Number			**X2764-01**	**X2764-02**	**X2764-03**	**X2764-04**	**X2764-05**	**X2764-06**	**X2764-07**	**X2764-08**	**X2764-15**	**X2764-09**	**X2764-12**	**X2764-13**	**X2764-14**	**X2764-16**
Sampling Date			**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**	**05/11/06**
Matrix			**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**WATER**
Dilution Factor			**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
Units	**Unrestricted Use SCG (ug/Kg)**	**Commercial Use SCG (ug/Kg)**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/L**
COMPOUND																
Acetone	50	500,000	19 U	18 U	19 U	20 U	20 U	19 U	18 U	19 U	**63** J	20 U	19 U	18 U	19 U	2.3 U
Carbon Disulfide	n/a	n/a	2.1 U	7.7 J	2.1 U	2.2 U	2.2 U	2.1 U	2.0 U	2.0 U	2.1 U	2.1 U	2.1 U	2.0 U	2.0 U	0.40 UJ
Methylene Chloride	50	500,000	140 UJ	**170** B	**170** B	74 UJ	130 UJ	**130** B	68 UJ	130 UJ	100 UJ	100 UJ	150 UJ	88 UJ	120 UJ	0.43 UJ
Total Confident Conc. VOC			0	177.7	170	0	0	130	0	0	63	0	0	0	0	0

Qualifiers and Notes
U denotes that the compound was not detected at the indicated concentration.
UJ denotes that the data indicates the presence of a compound that meets the identification criteria; however the result is less than the quantitation limit but greater than zero.
J indicates an estimated value
B denotes that the analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
SCG denotes Standards, Criteria & Guidance levels (Reference: 6 NYCRR Part 375 Soil Cleanup Objectives)
Values in **BOLD** have exceeded the SCG for Unrestricted Use Sites.
Values in **BOLD** and shaded have exceeded the SCG for Restricted (Commercial) Use Sites.
n/a - Not Applicable (no established standard)
ug/Kg - Micrograms per Kilogram
ug/L - Micrograms per Liter

TABLE 2
LOWER BROADWAY PARKING LOT / 312 BROADWAY
SCHENECTADY, NEW YORK

REMEDIAL INVESTIGATION
NEAR-SURFACE SOIL ANALYTICAL RESULTS - SEMIVOLATILE ORGANIC COMPOUNDS
(DETECTED COMPOUNDS ONLY)

Sample ID			SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	DUP-2	SS-9	SS-10	SS-11	SS-12	EQUIPBLANK-2
Lab Sample Number			X2764-01	X2764-02	X2764-03	X2764-04	X2764-05	X2764-06	X2764-07	X2764-08	X2764-15	X2764-09	X2764-12	X2764-13	X2764-14	X2764-16
Sampling Date			05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06
Matrix			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER
Dilution Factor			10.0	1.0	1.0	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	1.0	5.0	1.0
Units	Unrestricted Use SCG (ug/Kg)	Commercial Use SCG (ug/Kg)	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L
COMPOUND																
Phenol	330	500,000	560 U	56 U	56 U	300 U	2900 U	280 U	75 J	56 U	55 U	57 U	56 U	53 U	280 U	1.3 U
Naphthalene	12,000	500,000	630 U	63 U	63 U	330 U	3200 U	320 U	62 U	63 U	63 U	120 J	140 J	60 U	310 U	1.4 U
Acenaphthylene	100,000	500,000	600 U	60 U	60 U	320 U	3100 U	300 U	59 U	60 U	59 U	88 J	200 J	72 J	300 U	1.3 U
Fluorene	30,000	500,000	620 U	63 U	62 U	330 U	3200 U	310 U	61 U	62 U	62 U	75 J	62 U	60 U	310 U	1.4 U
Phenanthrene	100,000	500,000	590 U	390	170 J	950 J	3000 U	300 U	69 J	170 J	230 J	710	490	190 J	290 U	1.5 U
Anthracene	100,000	500,000	560 U	60 J	56 U	300 U	2900 U	280 U	54 U	56 U	55 U	180 J	150 J	54 J	280 U	1.4 U
Carbazole	n/a	n/a	560 U	57 U	56 U	300 U	2900 U	280 U	55 U	56 U	56 U	60 J	56 U	54 U	280 U	1.3 U
Fluoranthene	100,000	500,000	550 U	550	220 J	1500 J	2800 U	280 U	130 J	230 J	310 J	820	1000	500	540 J	1.2 U
Pyrene	100,000	500,000	650 U	810	300 J	2100	3400 U	360 J	280 J	590	600	1500	1900	1200	850 J	1.5 U
Benzo(a)anthracene	1,000	5,600	520 U	320 J	130 J	810 J	2700 U	260 U	110 J	160 J	210 J	590	770	420	340 J	1.1 U
Chrysene	1,000	56,000	660 U	380	150 J	850 J	3400 U	330 U	120 J	200 J	240 J	610	800	430	420 J	1.7 U
bis(2-Ethylhexyl)phthalate	n/a	n/a	710 U	110 J	110 J	380 U	3700 U	360 U	89 J	76 J	70 U	100 J	100 J	140 J	350 U	1.6 U
Benzo(b)fluoranthene	1,000	5,600	410 UJ	500 J	170 J	**1200** J	2100 UJ	230 J	160 J	280 J	290 J	**1100** J	**1500** J	710 J	530 J	0.770 U
Benzo(k)fluoranthene	800	56,000	810 UJ	210 J	84 J	520 J	4200 UJ	410 UJ	79 UJ	100 J	140 J	450 J	680 J	320 J	400 UJ	1.9 UJ
Benzo(a)pyrene	1,000	1,000	590 UJ	330 J	130 J	870 J	3000 UJ	300 UJ	100 J	180 J	210 J	590 J	840 J	460 J	360 J	1.2 U
Indeno(1,2,3-cd)pyrene	500	5,600	470 U	47 UJ	47 U	250 U	2400 U	240 U	46 U	47 UJ	46 U	120 J	110 J	49 J	230 U	0.850 UJ
Benzo(g,h,i)perylene	100,000	500,000	610 UJ	85 J	61 UJ	320 UJ	3100 UJ	310 UJ	60 UJ	82 J	87 J	320 J	400 J	210 J	300 UJ	1.1 UJ
Total Confident Conc. SVOC			0	3745	1464	8800	0	590	1133	2068	2317	7433	9080	4755	3040	0

Qualifiers and Notes
U denotes that the compound was not detected at the indicated concentration.
UJ denotes the data indicates the presence of a compound that meets the identification criteria; however the result is less than the quantitation limit but greater than zero.
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SCG denotes Standards, Criteria & Guidance levels (Reference: 6 NYCRR Part 375 Soil Cleanup Objectives)
Values in **BOLD** have exceeded the SCG for Unrestricted Use Sites.
Values in **BOLD** and shaded have exceeded the SCG for Restricted (Commercial) Use Sites.
n/a - Not Applicable (no established standard)
ug/Kg - Micrograms per Kilogram
ug/L - Micrograms per Liter

TABLE 3
LOWER BROADWAY PARKING LOT / 312 BROWADWAY
SCHENECTADY, NEW YORK

REMEDIAL INVESTIGATION
NEAR-SURFACE SOIL ANALYTICAL RESULTS - TAL METALS
(DETECTED METALS ONLY)

Sample ID			SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	DUP-2	SS-9	SS-10	SS-11	SS-12	EQUIPBLANK-2
Lab Sample Number			X2764-01	X2764-02	X2764-03	X2764-04	X2764-05	X2764-06	X2764-07	X2764-08	X2764-15	X2764-09	X2764-12	X2764-13	X2764-14	X2764-16
Sampling Date			05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06	05/11/06
Matrix			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER
Dilution Factor			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units	Unrestricted Use SCG (mg/kg)	Commercial Use SCG (mg/kg)	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/L
COMPOUND																
Aluminum	n/a	n/a	8440	8060	5520	4470	7340	4710	8130	4550	4330	4130	4920	4550	3930	0.0166 J
Antimony	n/a	n/a	0.369 U	13.2 U	0.360 U	0.381 U	0.383 U	0.371 U	11.8 U	15.9 J	0.363 U	0.379 UJ	0.369 U	0.347 U	12.0 U	0.0524 J
Barium	350	400	132	89.9	43.6	75.9	150	128	52.3	155	168	86.3	81.1	62.6	40.0	0.0039 J
Beryllium	7.2	590	0.366 U	0.447 U	0.333 U	0.296 U	0.356 U	0.300 U	0.438 U	0.292 UJ	0.263 U	0.277 U	0.322 U	0.305 U	0.259 U	0.001 J
Cadmium	2.5	9.3	0.037 U	0.037 U	0.036 U	0.146 J	0.038 U	0.037 U	0.035 U	0.062 J	0.037 UJ	0.038 U	0.142 J	0.041 J	0.771	0.00033 U
Calcium	n/a	n/a	60500	18900	31100	30400	75200	39900	41700	19500 J	35700 J	40700 J	35700	47800	20800	0.0531 J
Cobalt	n/a	n/a	3.680 U	12.4	6.950 U	5.290 U	3.860 U	4.280 U	10.4	4.700 U	3.790 U	11.6 J	6.420 U	6.100 U	4.070 U	0.0154 J
Copper	50	270	11.7	28.2	23.6	**55.9**	19.0	17.6	27.8	**106** J	**69.6** J	33.4	35.4	28.1	30.8	0.0044 J
Iron	n/a	n/a	8130 J	16700 J	11200 J	10700 J	7790 J	8150 J	15800 J	10200 J	10000 J	17400 J	14100 J	11800 J	10500 J	0.03 UJ
Lead	63	1,000	17.6	61.3	38.9	**270**	26.2	35.2	41.5	**222** J	**446** J	**89.2** J	**99.2**	**74.3**	**64.3**	0.0028 U
Magnesium	n/a	n/a	7510	3650	5140	2540	4600	2440	4930	2990 J	8460 J	11500 J	2970	19900	8040	0.0443 J
Manganese	1,600	10,000	293	432	263	222	240	138	344	209	241	180 J	264	325	219	0.0096 J
Mercury	0.18	2.8	0.040 UJ	0.143 J	**0.333** J	**0.453** J	0.081 J	0.082 J	**0.191** J	**0.245** J	**0.226**	**0.311** J	0.008	**0.198**	0.132	0.00023 J
Nickel	30	310	8.060	21.0	14.0	10.1	8.450	10.2	17.6	9.620	8.190	23.4 J	13.0	12.5	13.2	0.0122 J
Potassium	n/a	n/a	977	1110	1170	1010	1010	702	1310	837	817	909 J	923	1010	695	0.226 J
Selenium	3.9	1,500	0.383 U	0.654 J	0.374 U	1.200	0.398 U	0.386 U	0.366 U	0.384 UJ	0.564 J	0.523 J	0.552 J	0.361 U	0.375 U	0.003 U
Silver	2	1,500	1.450	**3.130**	1.960	1.940	1.150 J	1.350	**2.890**	**2.030**	1.780	**3.290** J	**2.590**	**2.020**	**2.030**	0.0016 U
Sodium	n/a	n/a	1780 J	576 UJ	1020 UJ	540 UJ	496 UJ	575 UJ	381 UJ	364 UJ	288 UJ	416 UJ	1220 UJ	176 UJ	261 UJ	2.35 J
Vanadium	n/a	n/a	14.1	17.9	14	14.2	15.5	13.1	17.2	13.2	11.6	12.5	13.5	11.8	12.3	0.01 J
Zinc	109	10,000	32.3	56.9	45.4	**175**	42.1	32.2	54.4	**157**	62.4	104	74.2	**112**	**138**	0.0341

Qualifiers and Notes
U denotes that the compound was not detected at the indicated concentration.
UJ denotes that the data indicates the presence of a compound that meets the identification criteria; however the result is less than the quantitation limit but greater than zero.
J indicates an estimated value
B denotes that the analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
SCG denotes Standards, Criteria & Guidance levels (Reference: 6 NYCRR Part 375 Soil Cleanup Objectives)
Values in **BOLD** have exceeded the SCG for Unrestricted Use Sites.
Values in **BOLD** and shaded have exceeded the SCG for Restricted (Commercial) Use Sites.
n/a - Not Applicable (no established standard)
mg/Kg - Miligrams per Kilogram
ug/L - Micrograms per Liter

TABLE 4
LOWER BROADWAY PARKING LOT
SCHENECTADY, NEW YORK

REMEDIAL INVESTIGATION
SUBSURFACE SOIL ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
(DETECTED COMPOUNDS ONLY)

Sample ID			GP-1(4-6)	DUP-1	GP-2(4-6)	GP-3(4-8)	GP-4(4-6)	GP-5(10-12)	GP-6(4-6)	GP-7(4-6)	GP-8(4-6)	GP-9(4-6)	GP-10(4-6)	GP-14(4-8)	GP-15(8-12)	EQUIPBLANK-1
Lab Sample Number			X2731-01	X2731-08	X2731-02	X2731-05	X2731-06	X2731-07	X2731-09	X2731-10	X2731-11	X2731-12	X2747-03	X2747-04	X2747-05	X2747-06
Sampling Date			05/08/06	05/08/06	05/08/06	05/08/06	05/08/06	05/08/06	05/09/06	05/09/06	05/09/06	05/09/06	05/10/06	05/10/06	05/10/06	05/10/06
Matrix			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER
Dilution Factor			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units	Unrestricted Use SCG (ug/Kg)	Commercial Use SCG (ug/Kg)	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L
COMPOUND																
Acetone	50	500,000	18 UJ	**100** J	20 UJ	**95** J	18 UJ	320 UJ	**69** J	21 UJ	18 U	20 U	**130** J	**51** J	540 UJ	2.3 U
2-Butanone (MEK)	120	500,000	15 U	17 U	17 U	31 J	15 U	120 J	17 U	17 U	15 U	17 U	31 J	17 U	460 U	1.1 U
Methylcyclohexane	n/a	n/a	2.3 U	2.5 U	2.5 U	2.5 U	2.3 U	2.9 U	2.5 U	2.6 U	2.3 U	2.5 U	2.4 U	2.6 U	200 J	0.34 U
Benzene	60	44,000	2.2 U	2.4 U	2.4 U	2.4 U	2.2 U	43 UJ	2.3 U	27 J	2.2 U	2.4 U	2.3 U	2.5 U	**1900**	0.39 U
Ethyl Benzene	1,000	390,000	1.9 U	2.1 U	2.1 U	2.1 U	1.9 U	250 J	2.1 U	2.2 U	1.9 U	2.1 U	2.1 U	2.2 U	**5800**	0.45 U
m/p-Xylenes	260	500,000	4.7 U	5.2 U	5.2 U	5.1 U	4.7 U	**350** J	11 J	5.3 U	4.7 U	5.2 U	5.0 U	5.4 U	**3900**	1.2 U
Isopropylbenzene	n/a	n/a	2.3 U	2.5 U	2.5 U	2.5 U	2.3 U	130 J	2.4 U	2.6 U	2.3 U	2.5 U	2.4 U	2.6 U	1700	0.44 U
Total Confident Conc. VOC			0	100	0	126	0	1409	141	33.7	20	0	257	181	17970	0

Qualifiers and Notes
U denotes that the compound was not detected at the indicated concentration.
UJ denotes that the data indicates the presence of a compound that meets the identification criteria; however the result is less than the quantitation limit but greater than zero.
J indicates an estimated value
B denotes that the analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
SCG denotes Standards, Criteria & Guidance levels (Reference: 6 NYCRR Part 375 Soil Cleanup Objectives)
Values in **BOLD** have exceeded the SCG for Unrestricted Use Sites.
Values in **BOLD** and shaded have exceeded the SCG for Restricted (Commercial) Use Sites.
n/a - Not Applicable (no established standard)
ug/Kg - Micrograms per Kilogram
ug/L - Micrograms per Liter

TABLE 5
LOWER BROADWAY PARKING LOT / 312 BROADWAY
SCHENECTADY, NEW YORK

REMEDIAL INVESTIGATION
SUBSURFACE SOIL ANALYTICAL RESULTS - SEMIVOLATILE ORGANIC COMPOUNDS
(DETECTED COMPOUNDS ONLY)

Sample ID			GP-1(4-6)	DUP-1	GP-2(4-6)	GP-3(4-8)	GP-4(4-6)	GP-5(10-12)	GP-6(4-6)	GP-7(4-6)	GP-8(4-6)	GP-9(4-6)	GP-10(4-6)	GP-14(4-8)	GP-15(8-12)	EQUIPBLANK-1
Lab Sample Number			X2731-01	X2731-08	X2731-02	X2731-05	X2731-06	X2731-07	X2731-09	X2731-10	X2731-11	X2731-12	X2747-03	X2747-04	X2747-05	X2747-06
Sampling Date			05/08/06	05/08/06	05/08/06	05/08/06	05/08/06	05/08/06	05/09/06	05/09/06	05/09/06	05/09/06	05/10/06	05/10/06	05/10/06	05/10/06
Matrix			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER
Dilution Factor			1.0	2.0	5.0	1.0	1.0	1.0	10.0	1.0	1.0	1.0	10.0	10.0	10.0	1.0
Units	Unrestricted Use SCG (ug/Kg)	Commercial Use SCG (ug/Kg)	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L
COMPOUND																
Naphthalene	12,000	500,000	89 J	130 UJ	330 U	67 U	64 U	**13000**	11000	120 J	61 U	69 U	680 U	**13000**	6000	1.5 U
2-Methylnaphthalene	n/a	n/a	63 U	130 U	330 U	66 U	63 U	1000	5200	68 U	60 U	68 U	660 U	3000 J	1600 J	1.1 U
1,1-Biphenyl	n/a	n/a	62 U	130 U	320 U	65 U	62 U	180 J	1800 J	67 U	59 U	67 U	650 U	1600 J	710 U	1.5 U
Acenaphthylene	100,000	500,000	300 J	130 J	320 U	64 U	61 U	150 J	3300 J	180 J	58 U	66 U	640 U	6000	700 U	1.4 U
Acenaphthene	20,000	500,000	72 J	140 UJ	350 U	70 U	67 U	1500	14000	120 J	64 U	72 U	710 U	2000 J	3300 J	1.4 U
Dibenzofuran	n/a	n/a	210 J	130 UJ	320 U	65 U	62 U	740	15000	98 J	59 U	67 U	660 U	5600	1900 J	1.4 U
Fluorene	30,000	500,000	410 UJ	130 UJ	330 U	66 U	63 U	850	20000	180 J	60 U	68 U	670 U	6200	3300 J	1.5 U
Phenanthrene	100,000	500,000	2700 J	670 J	310 U	520	130 J	3100	**110000**	1800	57 U	65 U	760 J	33000	8000	1.5 U
Anthracene	100,000	500,000	950 J	290 J	300 U	110 J	57 U	830	27000	500	54 U	61 U	600 U	9000	3200 J	1.5 U
Carbazole	n/a	n/a	120 J	120 UJ	300 U	60 U	57 U	420 J	16000	120 J	55 U	62 U	610 UJ	8300 J	650 UJ	1.3 U
Fluoranthene	100,000	500,000	3900 E	2200	290 U	810	280 J	2400	88000	2400	71 J	60 U	1000 J	30000	4700	1.3 U
Pyrene	100,000	500,000	3800 J	2700 J	350 U	750	330 J	2100	**110000**	6600	80 J	72 U	1700 J	40000	11000	1.5 U
Benzo(a)anthracene	1,000	5,600	**2200** J	**1300** J	270 U	370 J	160 J	900	**33000**	**2000**	50 U	57 U	560 U	**13000**	**4600**	1.2 U
Chrysene	1,000	56,000	**1800** J	**1200** J	350 U	330 J	150 J	740	**31000**	**1600**	64 U	73 U	710 U	**13000**	**4300**	1.8 U
Benzo(b)fluoranthene	1,000	5,600	**1900** J	**1600** J	220 UJ	410 J	280 J	790 UJ	**33000** J	**1700** J	110 J	45 UJ	440 UJ	**16000** J	**5100** J	0.790 U
Benzo(k)fluoranthene	800	56,000	800 J	650 J	430 UJ	160 J	140 J	360 J	**14000** J	680 J	93 J	89 UJ	870 UJ	**5400** J	**1400** J	2.0 U
Benzo(a)pyrene	1,000	1,000	**1700** J	**1100** J	310 UJ	260 J	150 J	710	**23000**	**1500**	57 UJ	65 U	630 UJ	**13000** J	**5200** J	1.2 U
Indeno(1,2,3-cd)pyrene	500	5,600	410 J	240 J	250 UJ	190 J	48 U	460	**4700**	490	45 U	52 U	500 UJ	**3200** J	**1000** J	0.870 UJ
Dibenz(a,h)anthracene	330	560	71 J	96 UJ	250 UJ	49 U	47 UJ	57 U	**900** J	64 J	45 UJ	51 U	500 UJ	**580** J	**540** UJ	0.910 U
Benzo(g,h,i)perylene	100,000	500,000	410 J	360 J	320 UJ	140 J	62 UJ	360 J	8000 J	450	59 UJ	67 U	660 UJ	8700 J	2900 J	1.1 UJ
Total Confident Conc. SVOC			21842	30440	0	4050	1620	32590	693750	19002	354	0	3460	243580	67500	0

Qualifiers and Notes
U denotes that the compound was not detected at the indicated concentration.
UJ denotes that the data indicates the presence of a compound that meets the identification criteria; however the result is less than the quantitation limit but greater than zero.
J indicates an estimated value
E indicates a compound whose concentration exceeds the calibration range of the instrument for this analysis.
SCG denotes Standards, Criteria & Guidance levels (Reference: 6 NYCRR Part 375 Soil Cleanup Objectives)
Values in **BOLD** have exceeded the SCG for Unrestricted Use Sites.
Values in **BOLD** and shaded have exceeded the SCG for Restricted (Commercial) Use Sites.
n/a - Not Applicable (no established standard)
ug/Kg - Micrograms per Kilogram
ug/L - Micrograms per Liter

TABLE 6
LOWER BROADWAY PARKING LOT / 312 BROADWAY
SCHENECTADY, NEW YORK

REMEDIAL INVESTIGATION
SUBSURFACE SOIL ANALYTICAL RESULTS - TAL METALS
(DETECTED METALS ONLY)

Sample ID			GP-1(4-6)	DUP-1	GP-2(4-6)	GP-3(4-8)	GP-4(4-6)	GP-5(10-12)	GP-6(4-6)	GP-7(4-6)	GP-8(4-6)	GP-9(4-6)	GP-10(4-6)	GP-14(4-8)	GP-15(8-12)	EQUIPBLANK-1
Lab Sample Number			X2731-01	X2731-08	X2731-02	X2731-05	X2731-06	X2731-07	X2731-09	X2731-10	X2731-11	X2731-12	X2747-03	X2747-04	X2747-05	X2747-06
Sampling Date			05/08/06	05/08/06	05/08/06	05/08/06	05/08/06	05/08/06	05/09/06	05/09/06	05/09/06	05/09/06	05/10/06	05/10/06	05/10/06	05/10/06
Matrix			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER
Dilution Factor			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units	Unrestricted Use SCG (mg/kg)	Commercial Use SCG (mg/kg)	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	ug/L
COMPOUND																
Aluminum	n/a	n/a	3780	4070	6510 J	4570	4470	8340	4860	4060	4520	4170	3900	4650	5160	21.5 J
Antimony	n/a	n/a	5.9 J	3.5 J	8.8 J	6.2 J	0.37 U	1.9 J	3.3 J	13.3	6.7	8.7	0.387 U	9.400 U	0.427 U	27.8 J
Arsenic	13	16	3.2 J	4.1 J	1.6 J	2.4	3.3	6.2	8.1	3.7	3.9	3.0	4.610	9.430	2.680	3.3 U
Barium	350	400	29.1	32.4	24.9	32.4	33.2	52.7	53.3	35.3	52.5	12.0 J	55.8	60.9	53.5	1.0 J
Beryllium	7.2	590	0.16 J	0.17 J	0.23 J	0.14 J	0.12 U	0.34 J	0.32 J	0.22 J	0.19 J	0.17 J	0.237 U	0.309 U	0.516 J	0.84 J
Calcium	n/a	n/a	14100	16700	5180 J	6810	7280	14300	15700	26300	9790	5940	18600	18500	10300	119 J
Chromium	30	1,900	6.3	6.9	8.7	8.9	6.1	10.8	9.1	9.5	8.5	7.2	11.3	6.630	5.960	2.0 J
Cobalt	n/a	n/a	3.4 J	3.5 J	4.9 J	4.4 J	2.5 J	6.3 J	5.0 J	5.0 J	4.0 J	5.4 J	3.440 U	5.160 U	3.480 U	10.3 J
Copper	50	270	12.8	10.8	19.5 J	31.6	**56.0**	16.6	35.5	22.4	40.5	9.3	35.4	**56.4**	14.3	5.7 J
Iron	n/a	n/a	9240 J	8860 J	11800 J	12800 J	11200 J	18600 J	11700 J	12800 J	8530 J	11300 J	9540	15700	13100	37.9 J
Lead	63	1,000	27.7 J	55.9 J	35.9 J	**142**	**125**	22.8	**110**	**172**	**139**	7.5	**125**	**240**	41.7	2.8 U
Magnesium	n/a	n/a	2230	1960	2290 J	1680	1810	4910	1310	3270	1870	1830	4160	2570	1320	8.3 U
Manganese	1,600	10,000	190	161	132	203	168	345	124	305	119	363	179	318	161	10.4 J
Mercury	0.18	2.8	0.095 J	0.117 J	**0.195** J	**0.201** J	**0.539** J	0.061 J	**0.302** J	**0.533** J	**0.426** J	0.032 J	**0.325**	**0.719**	0.133	0.1400 J
Nickel	30	310	6.4	6.3	9.2	6.7	7.4	13.7	11.7	7.0	6.1	8.1	7.540	9.690	7.650 U	12.2 J
Potassium	n/a	n/a	656	730	817 J	577 J	687	992	553 J	884	657	797	641 J	642 J	450 J	85.4 J
Selenium	3.9	1,500	1.5 U	1.6 U	0.40 U	3.7	1.2 U	1.3 U	1.8 U	0.70 U	1.2 U	1.0 U	0.795 J	0.543 J	0.831 J	3.0 U
Silver	2	1,500	0.09 U	0.09 U	0.09 UJ	0.09 U	0.10 J	0.29 J	0.20 J	0.11 J	0.09 U	0.10 U	1.340 J	**2.290** J	1.750 J	1.6 U
Sodium	n/a	n/a	419 J	611 J	831 J	608 J	60.9 J	285 J	649 J	809 J	505 J	644 J	442 U	361 U	525 U	427 J
Vanadium	n/a	n/a	10.7	12.5	14.0	10.6	10.3	18.9	27.8	9.6	10.7	9.3	14.2	16.0	13.0	10.8 J
Zinc	109	10,000	25.9 J	35.0 J	50.2 J	70.7	94.0	51.2	**182**	87.5	80.0	28.1	**250**	**134**	28.8	30.0

Qualifiers and Notes
U denotes that the compound was not detected at the indicated concentration.
UJ denotes the data indicates the presence of a compound that meets the identification criteria; however the result is less than the quantitation limit but greater than zero.
J indicates an estimated value
B denotes that the analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
SCG denotes Standards, Criteria & Guidance levels (Reference: 6 NYCRR Part 375 Soil Cleanup Objectives)
Values in **BOLD** have exceeded the SCG for Unrestricted Use Sites.
Values in **BOLD** and shaded have exceeded the SCG for Restricted (Commercial) Use Sites.
n/a - Not Applicable (no established standard)
mg/Kg - Miligrams per Kilogram
ug/L - Micrograms per Liter

TABLE 7
LOWER BROADWAY PARKING LOT / 312 BROADWAY
SCHENECTADY, NEW YORK

REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
(DETECTED COMPOUNDS ONLY)

Sample ID		CTM-1	CTM-2	CTM-3	CTM-4	CTM-5	CTM-6	CTM-7	CTM-8	G.W.DUPLICATE	CTM-9	CTM-10	CTM-14	CTM-15	EQUIPBLANK
Lab Sample Number		X3264-01	X3264-02	X3317-01	X3317-02	X3317-05	X3317-06	X3317-07	X3358-01	X3358-07	X3358-02	X3358-03	X3358-04	X3358-05	X3317-09
Sampling Date		06/13/06	06/13/06	06/14/06	06/14/06	06/14/06	06/14/06	06/14/06	06/15/06	06/15/06	06/15/06	06/15/06	06/15/06	06/15/06	06/14/06
Matrix		WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Dilution Factor		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
COMPOUND	SCG (ug/L)														
Cyclohexane	n/a	0.36 U	0.36 U	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.36 UJ	1.1 J	0.36 UJ
Benzene	1	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 UJ	0.39 UJ	**94**	0.39 U
Toluene	5	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	**5.1**	0.36 U
Ethyl Benzene	5	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	**55**	0.45 U
m/p-Xylenes	5	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	**27**	1.2 U
o-Xylene	5	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	**22**	0.46 U
Isopropylbenzene	5	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	**13**	0.44 U
Total Confident Conc. VOC		0	0	0	0	0	0	0	0	0	0	0	0	313.2	

Qualifiers and Notes
U - The compound was not detected at the indicated concentration.
UJ - Data indicates the presence of a compound that meets the identification criteria; however the result is less than the quantitation limit but greater than zero.
J - Indicates an estimated 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.
SCG - Standards, Criteria & Guidance levels (Reference: 6 NYCRR part 703 - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
Values in **BOLD** denote exceedence of SCG
ug/L - Micrograms per Liter
n/a - Not Appliable (no established standard)

TABLE 8
LOWER BROADWAY PARKING LOT / 312 BROADWAY
SCHENECTADY, NEW YORK

REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - SEMIVOLATILE ORGANIC COMPOUNDS
(DETECTED COMPOUNDS ONLY)

Sample ID		CTM-1	CTM-2	CTM-3	CTM-4	CTM-5	CTM-6	CTM-7	EQUIPBLANK	CTM-8	G.W.DUPLICATE	CTM-9	CTM-10	CTM-14	CTM-15
Lab Sample Number		X3264-01	X3264-02	X3317-01	X3317-02	X3317-05	X3317-06	X3317-07	X3317-09	X3358-01	X3358-07	X3358-02	X3358-03	X3358-04	X3358-05
Sampling Date		06/13/06	06/13/06	06/14/06	06/14/06	06/14/06	06/14/06	06/14/06	06/14/06	06/15/06	06/15/06	06/15/06	06/15/06	06/15/06	06/15/06
Matrix		WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Dilution Factor		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
COMPOUND	SCG (ug/L)														
Naphthalene	10	3.3 J	3.0 U	1.4 U	1.4 U	1.5 U	4.1 J	1.4 U	1.6 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	**88**
2-Methylnaphthalene	4.7**	1.2 U	2.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.7 J
Acenaphthene	20**	8.7 J	3.2 J	1.4 U	1.4 U	1.4 U	3.0 J	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	**44**
Dibenzofuran	n/a	2.3 J	2.8 U	1.3 U	1.3 U	1.4 U	2.7 J	1.3 U	1.5 U	1.3 U	1.3 U	1.3 U	1.3 U	2.0 J	26
Fluorene	50**	5.5 J	3.1 U	1.4 U	1.4 U	1.5 U	3.6 J	1.4 U	1.6 U	1.4 U	1.4 U	1.4 U	1.4 U	2.5 J	28
Phenanthrene	50**	9.4 J	3.1 U	1.5 U	1.5 U	1.5 U	22	1.5 U	1.6 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	16
Anthracene	50**	1.6 J	3.0 U	1.4 U	1.4 U	1.5 U	6.6 J	1.4 U	1.6 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	5.3 J
Carbazole	n/a	1.4 U	2.8 U	1.3 U	1.3 U	1.3 U	4.2 J	1.3 U	1.4 U	1.3 U	1.3 U	1.3 U	1.3 U	6.2 J	35
Di-n-butylphthalate	n/a	1.4 U	2.8 U	1.4 J	1.7 J	1.4 U	1.4 U	1.3 U	1.5 U	1.3 UJ	1.4 J	1.3 U	1.3 U	1.3 U	1.3 U
Fluoranthene	50**	1.7 J	2.6 U	1.2 U	1.2 U	1.3 U	20	1.2 U	1.4 U	1.2 U	1.2 U	1.2 U	1.2 U	1.8 J	6.5 J
Pyrene	50**	1.6 U	3.2 U	1.5 U	1.5 U	1.5 U	17	1.5 U	1.6 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 J	4.3 J
Benzo(a)anthracene	0.002**	1.2 UJ	2.4 U	1.1 U	1.1 U	1.2 U	**7.7** J	1.1 U	1.3 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Chrysene	0.002**	1.8 U	3.6 U	1.7 U	1.7 U	1.8 U	**7.3** J	1.7 U	1.9 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Benzo(b)fluoranthene	0.002**	0.810 U	1.6 U	0.770 U	0.770 U	0.790 U	**8.3** J	0.770 U	0.850 U	0.770 U	0.770 U	0.770 U	0.770 U	0.770 U	0.770 U
Benzo(k)fluoranthene	0.002**	2.0 U	4.1 U	1.9 U	1.9 U	2.0 U	**4.5** J	1.9 U	2.1 U	**2.3** J	1.9 UJ	1.9 U	1.9 U	1.9 U	**2.4** J
Benzo(a)pyrene	ND	1.3 U	2.5 U	1.2 U	1.2 U	1.2 U	**5.8** J	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Benzo(g,h,i)perylene	n/a	1.2 U	2.4 U	1.1 U	1.1 U	1.1 U	2.3 J	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Total Confident Conc. SVOC		32.5	3.2	1.4	1.7	0	119.1	0	0	2.3	1.4	0	0	14	266.2
Total TICs		22.9	52.6	59	75	64	20	69	73	60	69	76	64	63	240.3

Qualifiers and Notes
U - The compound was not detected at the indicated concentration.
UJ - Data indicates the presence of a compound that meets the identification criteria; however the result is less than the quantitation limit but greater than zero.
J - Indicates an estimated 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.
SCG - Standards, Criteria & Guidance levels (Reference: 6 NYCRR part 703 - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
Values in **BOLD** denote exceedence of SCG
** - Indicates guidance values
n/a - Not Applicable (no established standard or guidance value)

TABLE 9
LOWER BROADWAY PARKING LOT / 312 BROADWAY
SCHENECTADY, NEW YORK

REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS - TAL METALS
(DETECTED METALS ONLY)

Sample ID		CTM-1	CTM-2	CTM-3	CTM-4	CTM-5	CTM-6	CTM-7	CTM-8	G.W.DUPLICATE	CTM-9	CTM-10	CTM-14	CTM-15
Lab Sample Number		X3264-01	X3264-02	X3317-01	X3317-02	X3317-05	X3317-06	X3317-07	X3358-01	X3358-07	X3358-02	X3358-03	X3358-04	X3358-05
Sampling Date		06/13/06	06/13/06	06/14/06	06/14/06	06/14/06	06/14/06	06/14/06	06/15/06	06/15/06	06/15/06	06/15/06	06/15/06	06/15/06
Matrix		WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Dilution Factor		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
COMPOUND	SCG (ug/L)													
Aluminum	100	**144** J	**332**	70.4 U	45.0 U	22.2 U	**1110**	**1820**	**2140**	**2240**	253 U	219 U	**313**	61.6 U
Antimony	3	3.170 U	**21.6** J	3.17 U	3.17 U	3.17 U	**35.7** J	3.17 U	3.17 U	3.170 U	3.170 U	**10.7** J	3.170 U	3.170 U
Arsenic	25	4.880 J	18.7	11.3	16.8	3.32 U	3.32 U	17.7	3.970 J	3.850 J	3.320 U	3.320 U	3.320 U	3.320 U
Barium	1,000	253	222	239	347	472	377	304	279	278	93.7 J	265	88.8 J	321
Calcium	n/a	218000	219000	197000	266000	179000	243000	234000	243000	238000	521000	409000	133000	252000
Chromium	50	0.343 U	10.7	1.54 U	1.58 U	1.14 U	3.85 U	2.26 U	3.740 U	3.880 U	1.580 U	3.220 U	1.930 U	2.180 U
Cobalt	5	0.370 U	0.370 U	0.37 U	0.37 U	**5.57** J	0.59 U	0.37 U	0.370 U	0.660 U	2.460 U	1.980 U	0.370 U	0.370 U
Copper	200	3.640 U	3.640 U	3.64 U	3.64 U	4.93 J	66.8	9.08 J	7.120 J	9.720 J	4.970 J	3.640 U	8.760 J	3.640 U
Iron	300	**28400**	**38800**	**32300**	**43800**	**1300**	**35300**	**45400**	**40600**	**39900**	**866**	**15600**	**3010**	**3150**
Lead	25	2.180 U	2.180 U	2.18 U	2.18 U	2.18 U	**56.8**	6.58	**29.7** J	**41.6**	2.180 U	7.530	2.180 U	2.180 U
Magnesium	35,000	17000	19900	22800 U	25500	13400 U	17600 U	26900 U	26300	25700	21000	22600	12700	23000
Manganese	300	**1260**	**3390**	**906**	**1390**	**1030**	**1210**	**1200**	**1550**	**1510**	**418**	**2180**	**368**	**731**
Mercury	0.7	0.0300 UJ	0.0300 U	0.21 J	0.05 J	0.03 UJ	0.29 J	0.03 UJ	**6.22** J	0.0400 J	0.0300 UJ	0.1900 J	0.0300 UJ	0.0300 UJ
Nickel	100	1.560 U	3.190 J	1.56 U	1.56 U	2.57 J	1.56 U	1.56 U	1.560 U	1.560 U	1.560 U	1.560 U	1.560 U	1.560 U
Potassium	n/a	20300	19800	36200 J	33900 J	18700 J	25300 J	39900 J	37400 J	36900 J	125000 J	48600 J	26700 J	55000 J
Sodium	20,000	**591000**	**530000**	**672000**	**547000** J	**315000**	**437000**	**560000**	**524000**	**520000**	**570000**	**285000**	**61200**	**1380000**
Vanadium	14	2.200 J	3.260 J	4.43 U	4.66 U	2.52 U	7.79 U	7.76 U	9.980 J	10.6 J	1.070 U	3.870 U	3.880 U	1.140 U
Zinc	2,000	12.5 J	12.0 J	16.6 U	21.2 U	595	73.6 U	35.2 U	41.2	39.7	22.8	40.6	26.5	15.5 J

Qualifiers and Notes
U - The compound was not detected at the indicated concentration.
UJ - Data indicates the presence of a compound that meets the identification criteria; however the result is less than the quantitation limit but greater than zero.
J - Indicates an estimated value
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
SCG - Standards, Criteria & Guidance levels (Reference: 6 NYCRR part 703 - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.)
Values in **BOLD** denote exceedence of SCG
n/a - Not Applicable (no established standard or guidance value)
ug/L - Micrograms per Liter

APPENDIX A

GEOPROBE SUBSURFACE EXPLORATION LOGS

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-1
ELEV.: **DATUM:**
START DATE: 5/8/06 **FINISH DATE: 5/8/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	2.4	3" ASPHALT Fill: Brown fine to coarse SAND, Some Silt, Gravel and concrete	Moist
8		2	3.8	Fill: Gray fine to coarse SAND, Some Gravel, trace silt and red brick	Wet
12		3	4.0	Brown fine to coarse SAND, little silt and gravel	
				becomes Gray/Black fine to coarse SAND, little silt	Wet
16		4	4.0	Brown SILT and fine SAND, Some Organics (in sample tip)	Wet
20				Boring Terminated at 16'	
24					
28					

DRILLING CONTRACTOR: Precision Env, GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-2
ELEV.: **DATUM:**
START DATE: 5/8/06 **FINISH DATE: 5/8/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	3.0	5" ASPHALT and 6" SUB-BASE (sand and gravel) Fill: Brown fine to coarse SAND, Some Silt, trace red brick	Moist
8		2	4.0	Brown fine to coarse SAND, Some Silt	Wet
				becomes Gray fine to coarse SAND and SILT, Some Organics	
12		3	3.8	Gray fine to coarse SAND, Some Silt, trace organics	Wet
				becomes Gray SILT, Some fine Sand and Organics (wood and rootlets)	
16		4	NR	Boring Terminated at 14'	
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-3
ELEV.: **DATUM:**
START DATE: 5/8/06 **FINISH DATE: 5/8/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	3.0	5" ASPHALT Fill: Brown/Gray fine to coarse SAND and GRAVEL, Some Silt, trace glass and red brick	
8		2	2.0	Gray fine to coarse SAND, trace silt	Wet
12		3	2.7		Wet
16		4	0.6	Boring Terminated at 14'	
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-4
ELEV.: **DATUM:**
START DATE: 5/8/06 **FINISH DATE: 5/8/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	3.0	5" ASPHALT Fill: Brown/Black SAND and GRAVEL, Some Cinder, trace red brick	
8		2	3.0	Gray fine to coarse SAND, Some Silt	Wet
12		3	4.0	becomes Brown SILT, Some fine Sand, trace organics	Wet
16		4	3.0	Gray fine to coarse SAND, Some Silt Brown SILT and fine SAND, trace organics Boring Terminated at 15'	Wet (formation collapse)
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-5
ELEV.: **DATUM:**
START DATE: 5/8/06 **FINISH DATE: 5/8/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
		1	2.0	6" ASPHALT Fill: Brown and Black CINDER, Some fine to coarse Gravel, little brick	
4		2	1.0	Fill: Coarse GRAVEL and CONCRETE, Some fine to coarse sand	Wet
8		3	4.0	Gray fine to coarse SAND, trace silt	Wet
12				Brown/Black SILT, Some fine Sand	Cresote type odor
16		4	NR		
				Boring Terminated at 16'	
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-6
ELEV.: **DATUM:**
START DATE: 5/9/06 **FINISH DATE: 5/9/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	3.0	5" ASPHALT Fill: White ASH, Black CINDER, Red BRICK, Some Glass and Gravel (Black Asphalt type material in sample shoe)	
8		2	3.0		Wet
				becomes Gray fine to coarse SAND, Some Silt	
12		3	4.0	becomes Gray SILT, Some fine Sand and organics	Wet
16		4	NR	Boring Terminated at 15'	
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-7
ELEV.: **DATUM:**
START DATE: 5/9/06 **FINISH DATE: 5/9/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	3.1	6" ASPHALT Fill: Brown fine to coarse SAND and GRAVEL, Some Cinder, Red Brick, Ash and Concrete	
8		2	3.0	Fill: Brown fine to coarse SAND, Some Silt, trace gravel and ash	Wet
				becomes Brown/Gray fine to coarse SAND, Some Silt	
12		3	4.0	Gray fine to coarse SAND, Some Silt	Wet
				becomes Gray SILT, Some fine Sand	
16		4	4.0	Gray fine to coarse SAND, trace silt and fine gravel	Wet
				Gray SILT, little fine sand	
20				Boring Terminated at 16'	
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-8
ELEV.: **DATUM:**
START DATE: 5/9/06 **FINISH DATE: 5/9/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	2.0	5" ASPHALT Fill: Brown fine to coarse SAND and GRAVEL, Some Cinder, Ash, Wood and Brick	
8		2	2.8	Fill: Gray fine to coarse SAND, Some Silt, trace gravel, ash, and brick	Wet
12		3	3.0	Gray fine to coarse SAND, Some Silt Gray SILT and fine SAND	Wet
16		4	NR	becomes Gray fine to coarse SAND, trace silt	Wet
20				Boring Terminated at 16'	
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE ASSESSMENT PURPOSES. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T.MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-9
ELEV.: **DATUM:**
START DATE: 5/9/06 **FINISH DATE: 5/9/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	1.5	4" ASPHALT Fill: Black SILT, SAND and GRAVEL (Stone in sample shoe)	
8		2	4.0	Fill: Brown fine to medium SAND, Some Silt, trace black cinders	Wet
12		3	4.0	Gray fine to coarse SAND, Some Silt	Wet
		4	NR		
16				Boring Terminated at 14'	
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-10
ELEV.: **DATUM:**
START DATE: 5/10/06 **FINISH DATE: 5/10/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
		1	3.6	4" ASPHALT	
				Fill: Brown fine to coarse SAND and GRAVEL, some silt, Black Cinder, Concrete and Brick	Moist
4					
		2	3.0		
				Fill: becomes Black SILT, Some Cinder, Ash, Wood and fine to coarse Sand	Wet
8					
		3	2.0	Gray fine to coarse SAND, trace silt, little fine gravel	Wet
12					
		4	0.6	Cave-in. Black CINDER/ASH, some fine to coarse sand, silt	Wet
				Gray fine to coarse SAND, trace silt, little fine gravel	
16				Boring Terminated at 15'	
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-11
ELEV.: **DATUM:**
START DATE: 5/10/06 **FINISH DATE: 5/10/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	2.6	4" Asphalt Fill: Brown fine to coarse SAND, some silt, concrete in sampler shoe Termination depth of boring (refusal)	Total of four attempts made to advance boring in this area. On the first, second and fourth attempts, encountered refusal at 1', 1' and 2' below grade, respectivley.
8					
12					
16					
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-12
ELEV.: **DATUM:**
START DATE: 5/10/06 **FINISH DATE: 5/10/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	2.6	4" Asphalt Fill: Brown fine to coarse SAND, some silt, concrete in sampler shoe Termination depth of boring (refusal)	Refusal encountered on concrete at 3' below grade.
8					
12					
16					
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY:
N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-13
ELEV.: **DATUM:**
START DATE: 5/10/06 **FINISH DATE: 5/10/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
4		1	2.0	4" Concrete Fill: Brown fine to coarse SAND & GRAVEL, some concrete, little red brick	Total of three attempts made to advance boring in this area. On first and second attempts, refusal was encountered at 0.5' and 3' below grade, respectively. No samples collected at the first and second locations.
8				Termination depth of boring (refusal)	
12					
16					
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE ASSESSMENT PURPOSES. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T.MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-14
ELEV.: **DATUM:**
START DATE: 5/10/06 **FINISH DATE: 5/10/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
		1	3.0	6" Topsoil	
				Fill: Brown fine to coarse SAND and GRAVEL,	
4				Some Silt, trace cinder, ash and brick	Moist
		2	2.0	Fill: Brown fine to coarse SAND, Some Silt and Gravel,	
8				trace brick	Wet
		3	4.0	Fill: Gray fine SAND, Some Silt	
				Fill: becomes white ASH, Some fine to coarse Sand	Wet
12				becomes Black fine SAND, Some Silt	Tar Odor
		4	NR		
16				Boring Terminated at 15'	
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR C.T. MALE ASSESSMENT PURPOSES. IT IS MADE AVAILABLE TO AUTHORIZED USERS ONLY THAT THEY MAY HAVE ACCESS TO THE SAME INFORMATION AVAILABLE TO C.T.MALE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATION OR JUDGMENT OF SUCH AUTHORIZED USERS.

SAMPLE CLASSIFICATION BY:
N. Freeman

C.T. MALE ASSOCIATES, P.C.

GEOPROBE SUBSURFACE EXPLORATION LOG

BORING NO.: GP-15
ELEV.: **DATUM:**
START DATE: 5/10/06 **FINISH DATE: 5/10/06**
SHEET 1 OF 1

PROJECT: 312 Broadway CTM PROJECT NO.: 05.5550

LOCATION: Schenectady, NY CTM OBSERVER: N. Freeman

DEPTH (FT.)	SAMPLE INTERVAL	SAMPLE NO.	SAMPLE RECOVERY (FT)	SAMPLE CLASSIFICATION	NOTES
		1	3.2	4" Topsoil	
				Fill: Brown fine to coarse SAND and SILT, Some Gravel, little brick, cinder and ash	Moist
4					
		2	4.0	Fill: White ASH	
				becomes Black fine to coarse SAND and GRAVEL	Wet Tar Odor
8					
		3	2.0	Black fine to coarse SAND and GRAVEL	Wet (Sheen on sample water)
12					
		4	0.6	Gray fine SAND and SILT, Some Organics	
16				Boring Terminated at 15'	
20					
24					
28					

DRILLING CONTRACTOR: Precision Env. GEOPROBE TYPE: Bobcat-Mounted
METHOD OF SAMPLING: 2" by 4' Macrocore Sampler

GROUNDWATER LEVEL READINGS

DATE	LEVEL	REFERENCE MEASURING POINT

SAMPLE CLASSIFICATION BY: N. Freeman

APPENDIX B

ORGANIC VAPOR HEADSPACE ANALYSIS LOGS

ORGANIC VAPOR HEADSPACE ANALYSIS LOG

PROJECT:	312 Broadway		**PROJECT #:**	05.5550	**PAGE 1 OF 5**
CLIENT:	Schenectady Metroplex Development Authority				**DATE**
LOCATION:	Schenectady, NY				**COLLECTED: 5/8/06**
INSTRUMENT USED:	Photovac	**LAMP**	10.6	**eV**	**DATE**
DATE INSTRUMENT CALIBRATED:	5/8/2006	**BY:**	NF		**ANALYZED: 5/8/06**
TEMPERATURE OF SOIL:	Ambient				**ANALYST: N.Freeman**

EXPLORATION NUMBER	SAMPLE NUMBER	DEPTH (FT.)***	SAMPLE TYPE	SAMPLE READING (PPM)**	BACKGROUND READING (PPM)**	REMARKS
GP-1		0-4'	SOIL	1.3	0.4	No odor or stains
GP-1 (Dup#1)		4-6'	SOIL	1.3	0.3	No odor or stains
GP-1		6-8'	SOIL	0.6	0.3	No odor or stains
GP-1		8-10'	SOIL	0.5	0.3	No odor or stains
GP-1		10-12'	SOIL	1.1	0.3	No odor or stains
GP-1		12-14'	SOIL	0.5	0.3	No odor or stains
GP-1		14-16'	SOIL	1.3	0.4	No odor or stains
GP-2		0-2'	SOIL	0.7	0.4	No odor or stains
GP-2		2-4'	SOIL	0.8	0.4	No odor or stains
GP-2 (ms/msd)		4-6'	SOIL	1.5	0.4	No odor or stains
GP-2		6-8'	SOIL	1	0.5	No odor or stains
GP-2		8-10'	SOIL	1.6	0.5	No odor or stains
GP-2		10-12'	SOIL	1.3	0.4	No odor or stains
GP-3		0-2'	SOIL	53.4	0.5	Petro odor / No stains
GP-3		2-4'	SOIL	2.4	0.4	No odor or stains
GP-3		4-8'	SOIL	2.7	0.4	No odor or stains
GP-3		8-10'	SOIL	2.3	0.4	No odor or stains
GP-3		10-12'	SOIL	2.3	0.4	No odor or stains
GP-3		12-14'	SOIL	3.8	0.4	No odor or stains

*Instrument was calibrated in accordance with manufacturer's recommended procedure using a calibration gas supplied by the manufacturer.
**PPM represents concentration of detectable volatile and gaseous compounds in parts per million of air.

ORGANIC VAPOR HEADSPACE ANALYSIS LOG

PROJECT:	312 Broadway		**PROJECT #:**	05.5550	**PAGE 2 OF 5**
CLIENT:	Schenectady Metroplex Development Authority				**DATE**
LOCATION:	Schenectady, NY				**COLLECTED: 5/8/06**
INSTRUMENT USED:	Photovac	**LAMP**	10.6	**eV**	**DATE**
DATE INSTRUMENT CALIBRATED:	5/8/2006	**BY:**	NF		**ANALYZED: 5/8/06**
TEMPERATURE OF SOIL:	Ambient				**ANALYST: N.Freeman**

EXPLORATION NUMBER	SAMPLE NUMBER	DEPTH (FT.)***	SAMPLE TYPE	SAMPLE READING (PPM)**	BACKGROUND READING (PPM)**	REMARKS
GP-4		0-2'	SOIL	12.5	0.1	Asphalt odor / No stains
GP-4		2-4'	SOIL	3.3	0.6	No odor or stains
GP-4		4-6'	SOIL	8.5	0.5	No odor or stains
GP-4		6-8'	SOIL	3.2	0.6	No odor or stains
GP-4		8-10'	SOIL	2.8	0.6	No odor or stains
GP-4		10-12'	SOIL	1.9	0.6	No odor or stains
GP-4		12-15'	SOIL	1.4	0.6	No odor or stains
GP-5		0-4'	SOIL	1.6	0.5	No odor or stains
GP-5		4-8'	SOIL	1.5	0.5	No odor or stains
GP-5		8-10'	SOIL	1.3	0.5	No odor or stains
GP-5		10-12'	SOIL	20.7	0.5	Tar/creosote odor/no staining

*Instrument was calibrated in accordance with manufacturer's recommended procedure using a calibration gas supplied by the manufacturer.
**PPM represents concentration of detectable volatile and gaseous compounds in parts per million of air.

ORGANIC VAPOR HEADSPACE ANALYSIS LOG

PROJECT:	312 Broadway		**PROJECT #:**	05.5550	**PAGE 3 OF 5**
CLIENT:	Schenectady Metroplex Development Authority				**DATE**
LOCATION:	Schenectady, NY				**COLLECTED: 5/9/06**
INSTRUMENT USED:	Photovac	**LAMP**	10.6	**eV**	**DATE**
DATE INSTRUMENT CALIBRATED:	5/9/2006	**BY:**	NF		**ANALYZED: 5/9/06**
TEMPERATURE OF SOIL:	Ambient				**ANALYST: N.Freeman**

EXPLORATION NUMBER	SAMPLE NUMBER	DEPTH (FT.)***	SAMPLE TYPE	SAMPLE READING (PPM)**	BACKGROUND READING (PPM)**	REMARKS
GP-6		0-2'	SOIL	0.8	0.4	No odor or stains
GP-6		2-4'	SOIL	1.6	0.4	No odor or stains
GP-6		4-6'	SOIL	2.1	0.5	No odor or stains
GP-6		6-8'	SOIL	0.7	0.4	No odor or stains
GP-6		8-10'	SOIL	0.7	0.5	No odor or stains
GP-6		10-12'	SOIL	0.5	0.4	No odor or stains
GP-7		0-2'	SOIL	2.6	0.7	No odor or stains
GP-7		2-4'	SOIL	1.8	0.6	No odor or stains
GP-7		4-6'	SOIL	2	0.6	No odor or stains
GP-7		6-8'	SOIL	1	0.6	No odor or stains
GP-7		8-10'	SOIL	1	0.6	No odor or stains
GP-7		10-12'	SOIL	0.8	0.6	No odor or stains
GP-7		12-14'	SOIL	0.7	0.6	No odor or stains
GP-7		14-16'	SOIL	0.9	0.6	No odor or stains
GP-8		0-4'	SOIL	1.6	0.4	No odor or stains
GP-8		4-6'	SOIL	1	0.6	No odor or stains
GP-8		6-8'	SOIL	0.9	0.6	No odor or stains
GP-8		8-10'	SOIL	3.2	0.6	No odor or stains
GP-8		10-12'	SOIL	2.6	0.6	No odor or stains

*Instrument was calibrated in accordance with manufacturer's recommended procedure using a calibration gas supplied by the manufacturer.
**PPM represents concentration of detectable volatile and gaseous compounds in parts per million of air.

ORGANIC VAPOR HEADSPACE ANALYSIS LOG

PROJECT:	312 Broadway		**PROJECT #:**	05.5550	**PAGE 4 OF 5**
CLIENT:	Schenectady Metroplex Development Authority				**DATE**
LOCATION:	Schenectady, NY				**COLLECTED: 5/9/06**
INSTRUMENT USED:	Photovac	**LAMP**	10.6	**eV**	**DATE**
DATE INSTRUMENT CALIBRATED:	5/9/2006	**BY:**	NF		**ANALYZED: 5/9/06**
TEMPERATURE OF SOIL:	Ambient				**ANALYST: N.Freeman**

EXPLORATION NUMBER	SAMPLE NUMBER	DEPTH (FT.)***	SAMPLE TYPE	SAMPLE READING (PPM)**	BACKGROUND READING (PPM)**	REMARKS
GP-9		0-4'	SOIL	2.2	0.6	No odor or stains
GP-9		4-6'	SOIL	3.1	0.6	No odor or stains
GP-9		6-8'	SOIL	3.6	0.5	No odor or stains
GP-9		8-10'	SOIL	2.5	0.6	No odor or stains
GP-9		10-12'	SOIL	4.1	0.6	No odor or stains

*Instrument was calibrated in accordance with manufacturer's recommended procedure using a calibration gas supplied by the manufacturer.
**PPM represents concentration of detectable volatile and gaseous compounds in parts per million of air.

ORGANIC VAPOR HEADSPACE ANALYSIS LOG

PROJECT:	312 Broadway		**PROJECT #:**	05.5550	**PAGE 5 OF 5**
CLIENT:	Schenectady Metroplex Development Authority				**DATE**
LOCATION:	Schenectady, NY				**COLLECTED: 5/10/06**
INSTRUMENT USED:	Photovac	**LAMP**	10.6	**eV**	**DATE**
DATE INSTRUMENT CALIBRATED:	5/10/2006	**BY:**	NF		**ANALYZED: 5/10/06**
TEMPERATURE OF SOIL:	Ambient				**ANALYST: N.Freeman**

EXPLORATION NUMBER	SAMPLE NUMBER	DEPTH (FT.)***	SAMPLE TYPE	SAMPLE READING (PPM)**	BACKGROUND READING (PPM)**	REMARKS
GP-10		0-2'	SOIL	2.6	0.6	No odor or stains
GP-10		2-4'	SOIL	2.4	0.6	No odor or stains
GP-10		4-6'	SOIL	2.2	0.7	No odor or stains
GP-10		6-8'	SOIL	2.4	0.6	No odor or stains
GP-10		8-12'	SOIL	2.4	0.6	No odor or stains
GP-13		0-4'	SOIL	3.2	0.8	No odor or stains
GP-14		0-2'	SOIL	4	0.7	No odor or stains
GP-14		2-4'	SOIL	3.8	0.7	No odor or stains
GP-14		6-8'	SOIL	4.6	0.8	No odor or stains
GP-14		8-10'	SOIL	26.8	0.7	Tar/cresote odor - white ash
GP-14		10-12'	SOIL	6.2	0.7	Tar/cresote odor - black sand
GP-15		0-2'	SOIL	5.6	0.8	No odor or stains
GP-15		2-4'	SOIL	5.2	0.8	No odor or stains
GP-15		4-6'	SOIL	15.1	0.8	Tar/cresote odor - black stained
GP-15		6-8'	SOIL	25.6	0.9	Tar/cresote odor - black stained
GP-15		8-12'	SOIL	52.6	0.9	Tar/cresote odor - black stained
GP-15		12-15'	SOIL	80.4	1	Tar/cresote odor - black stained

*Instrument was calibrated in accordance with manufacturer's recommended procedure using a calibration gas supplied by the manufacturer.
**PPM represents concentration of detectable volatile and gaseous compounds in parts per million of air.

APPENDIX C

MONITORING WELL CONSTRUCTION LOGS

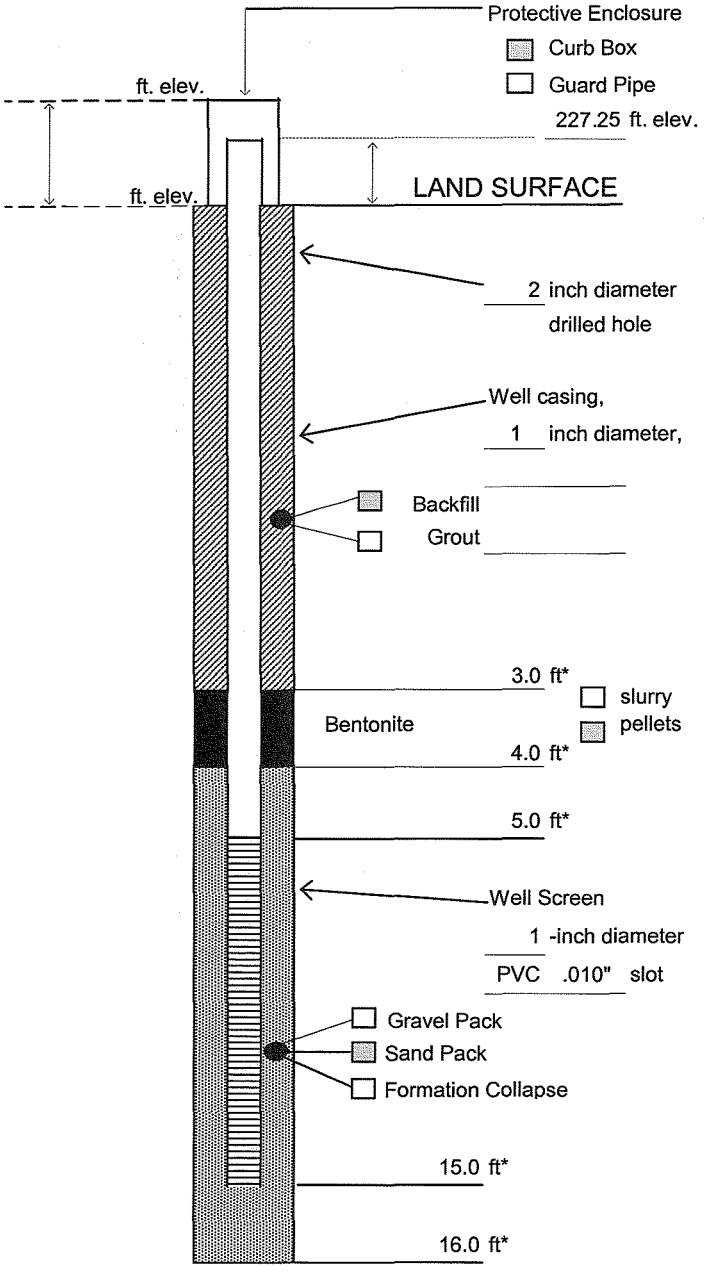
APPENDIX C

MONITORING WELL CONSTRUCTION LOGS

Well No. CTM-1

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-1 Boring No. GP-1

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.8.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

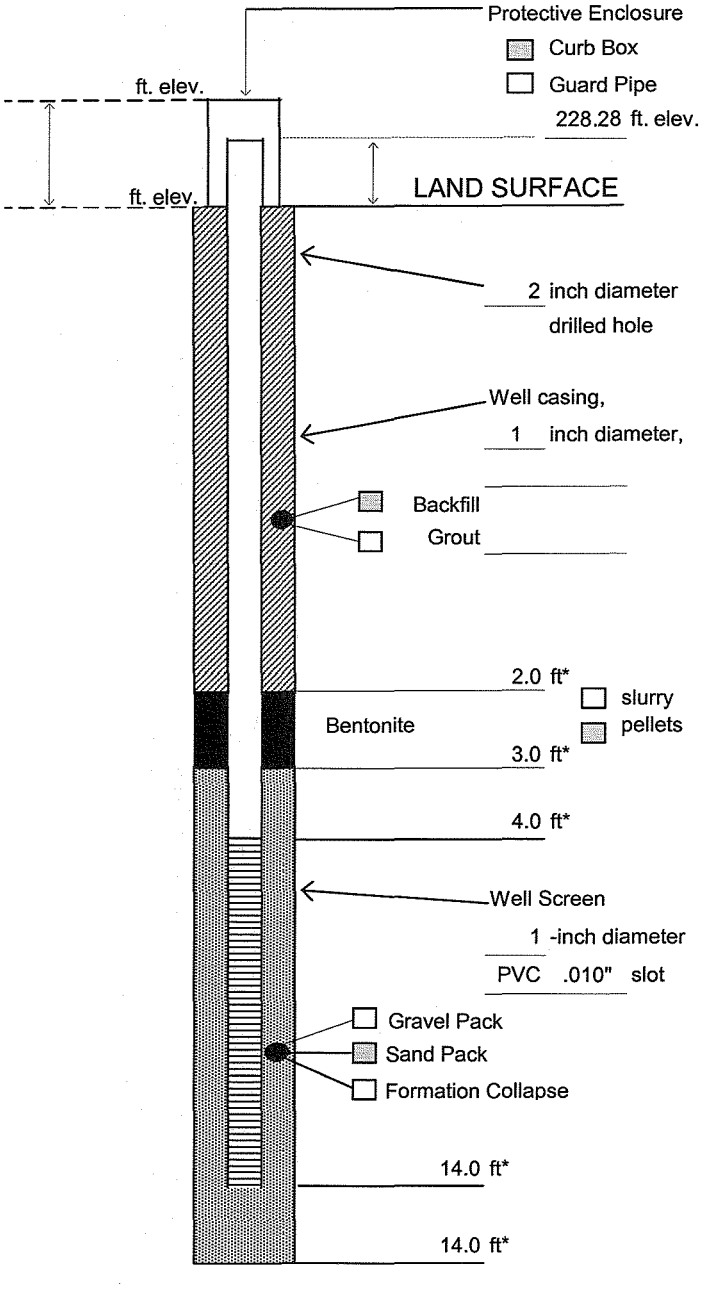
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-2

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-2 Boring No. GP-2

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.8.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

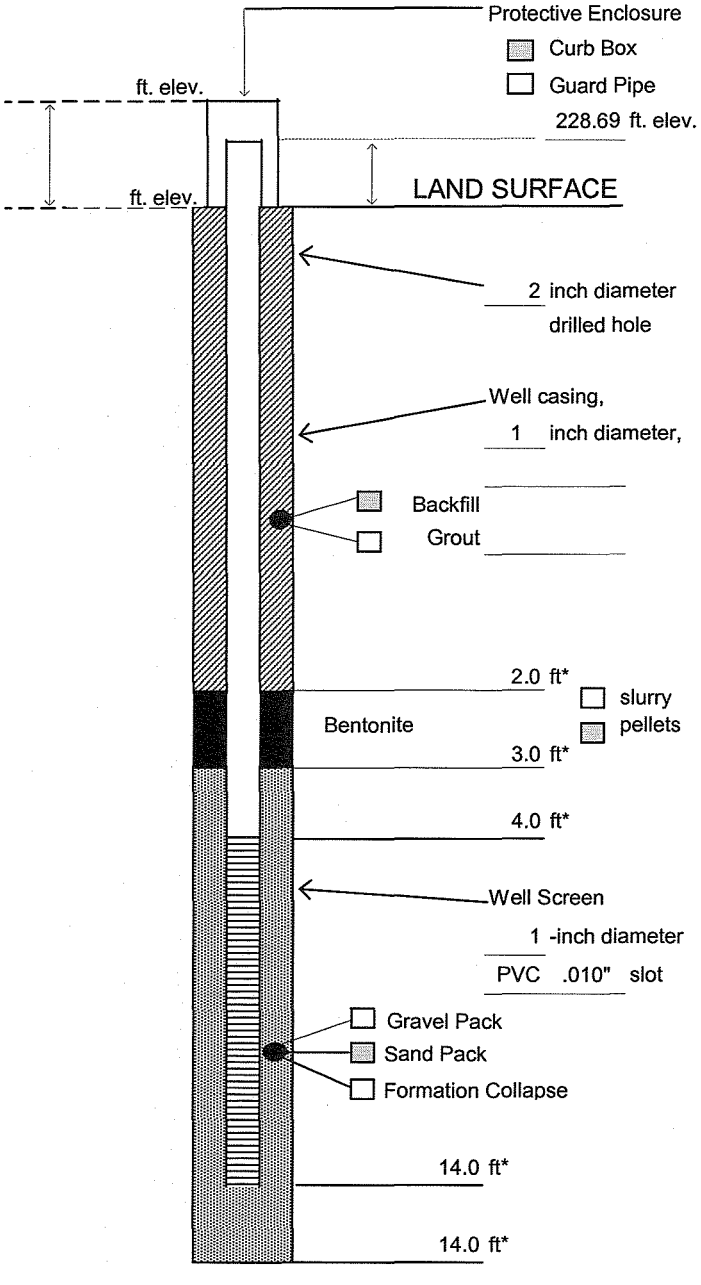
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-3

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM- Boring No. GP-

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.8.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

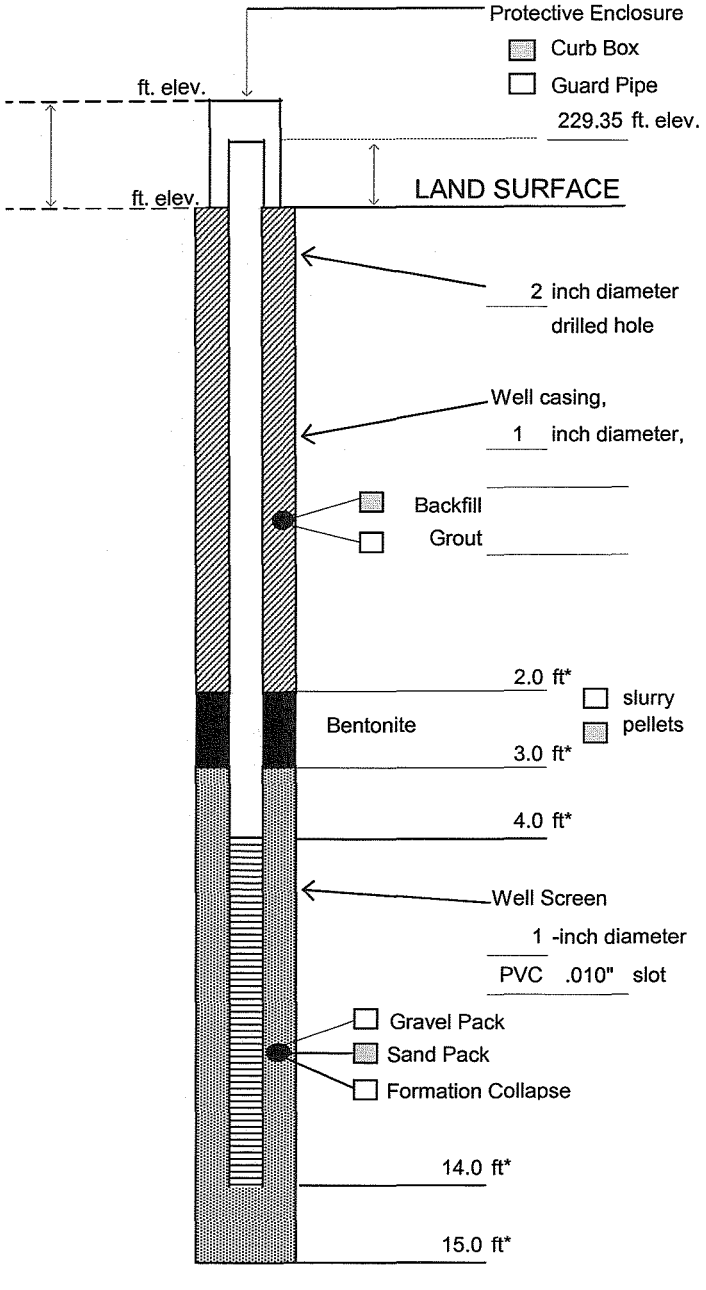
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-4

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-4 Boring No. GP-4

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.8.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

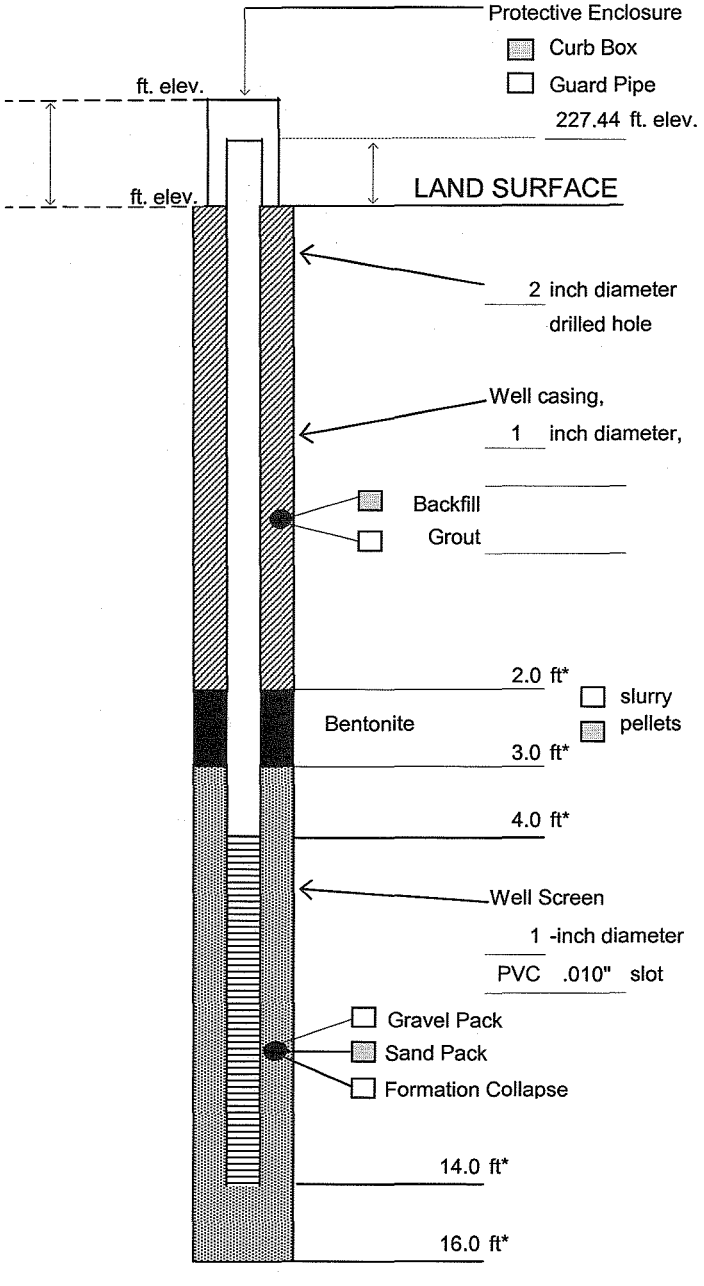
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-5

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-5 Boring No. GP-5

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.8.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

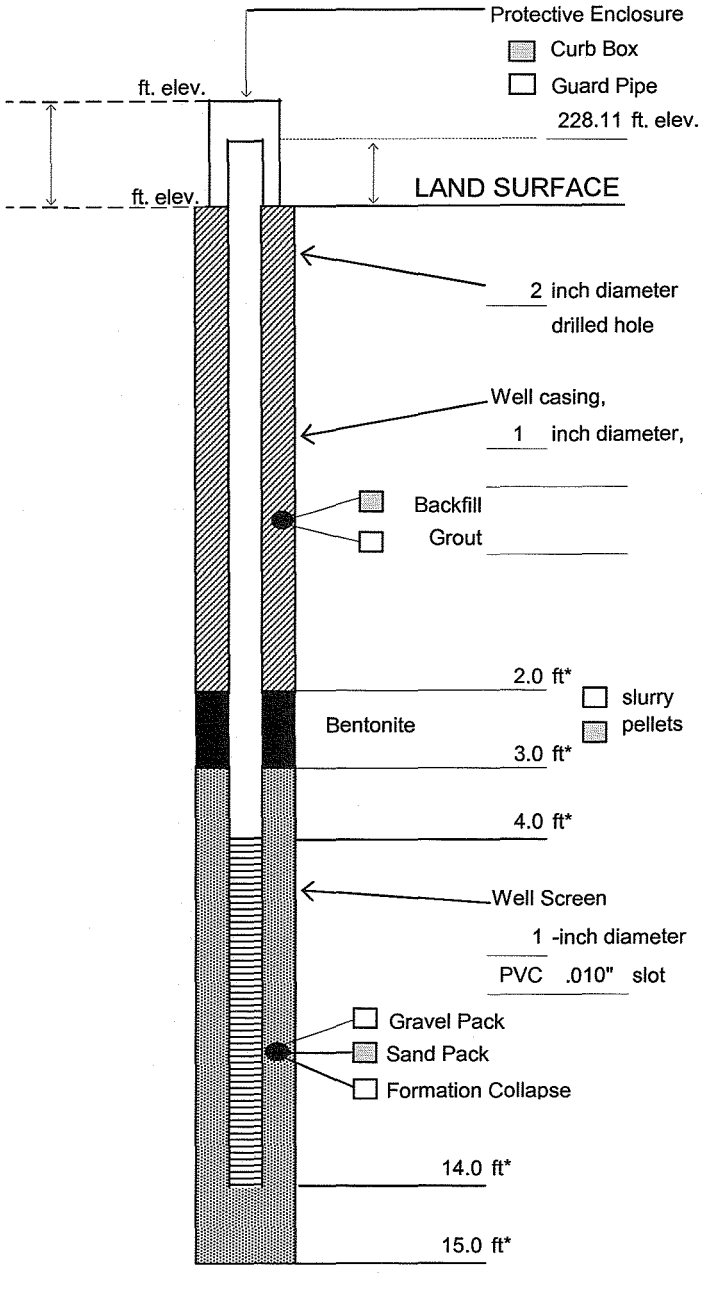
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-6

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-6 Boring No. GP-6

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.9.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

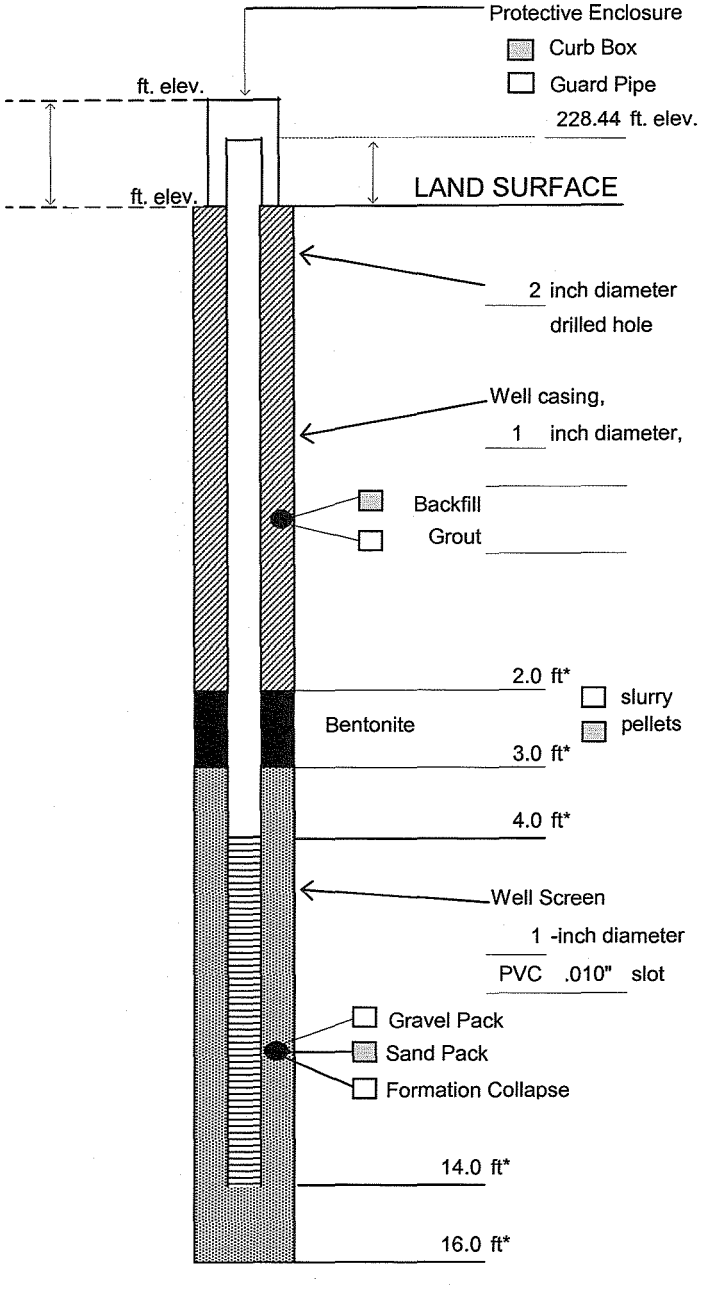
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-7

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-7 Boring No. GP-7

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.9.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

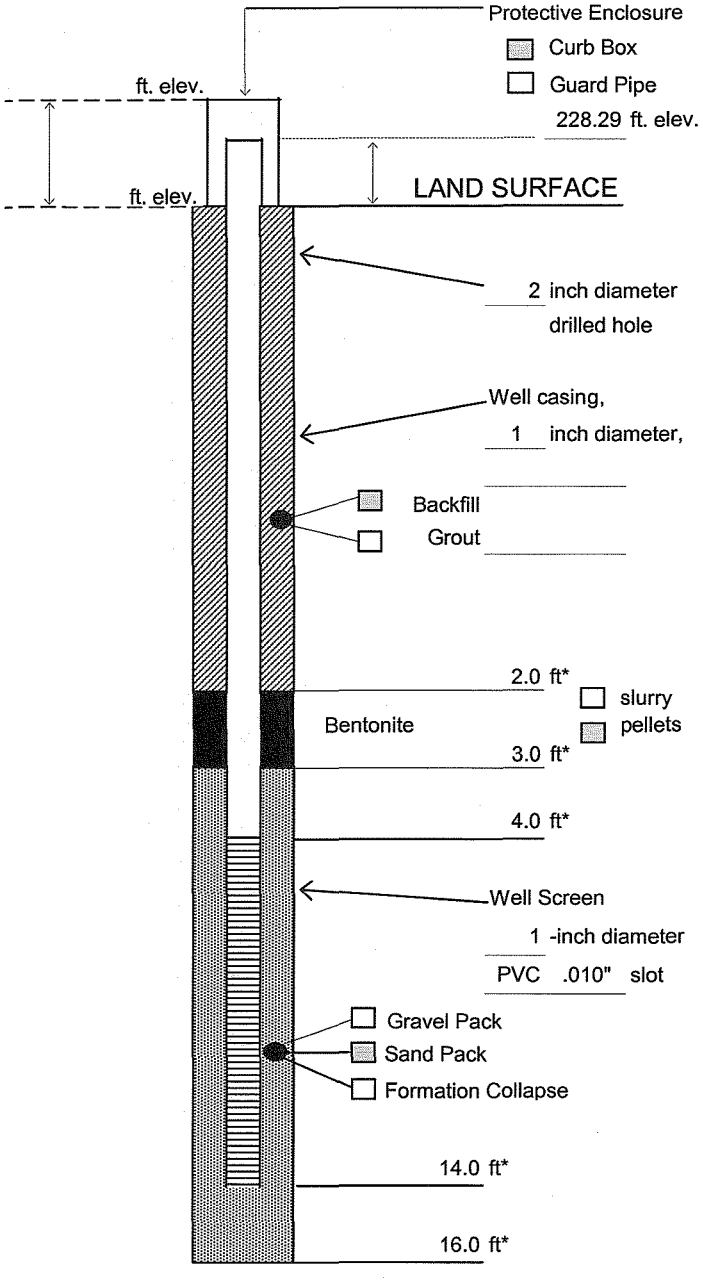
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-8

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-8 Boring No. GP-8

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.9.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

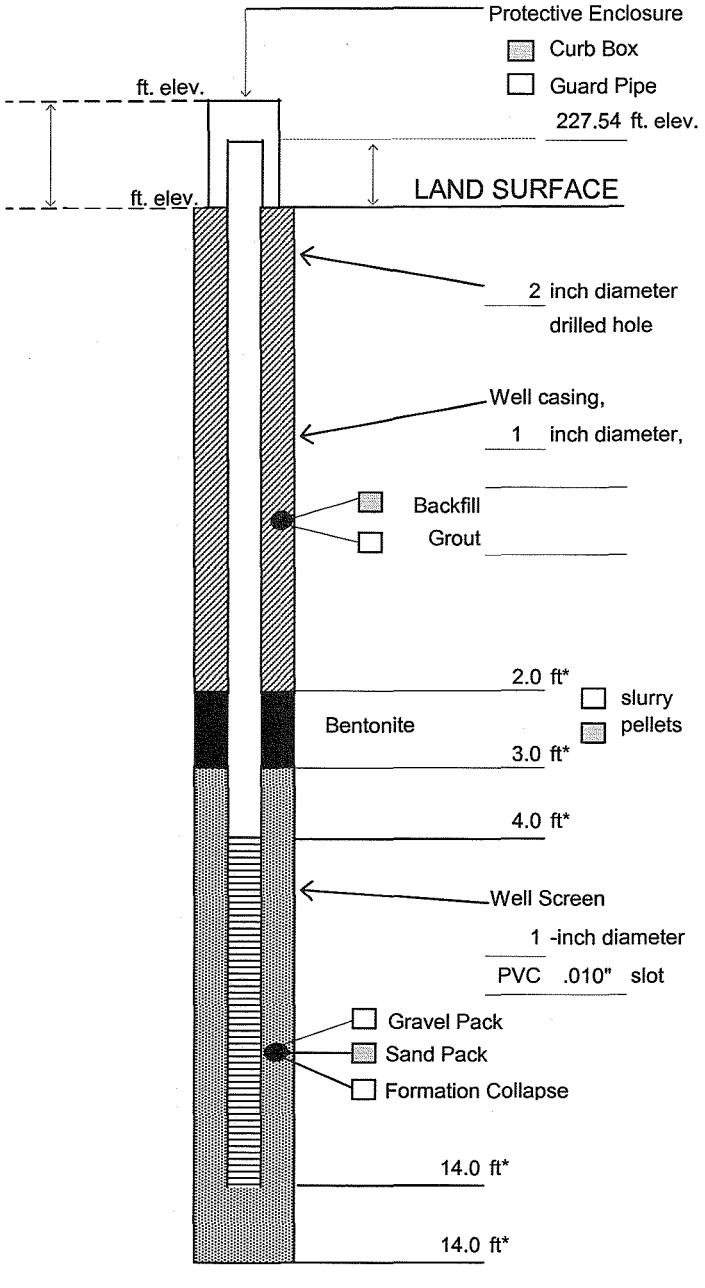
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-9

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-9 Boring No. GP-9

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.9.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

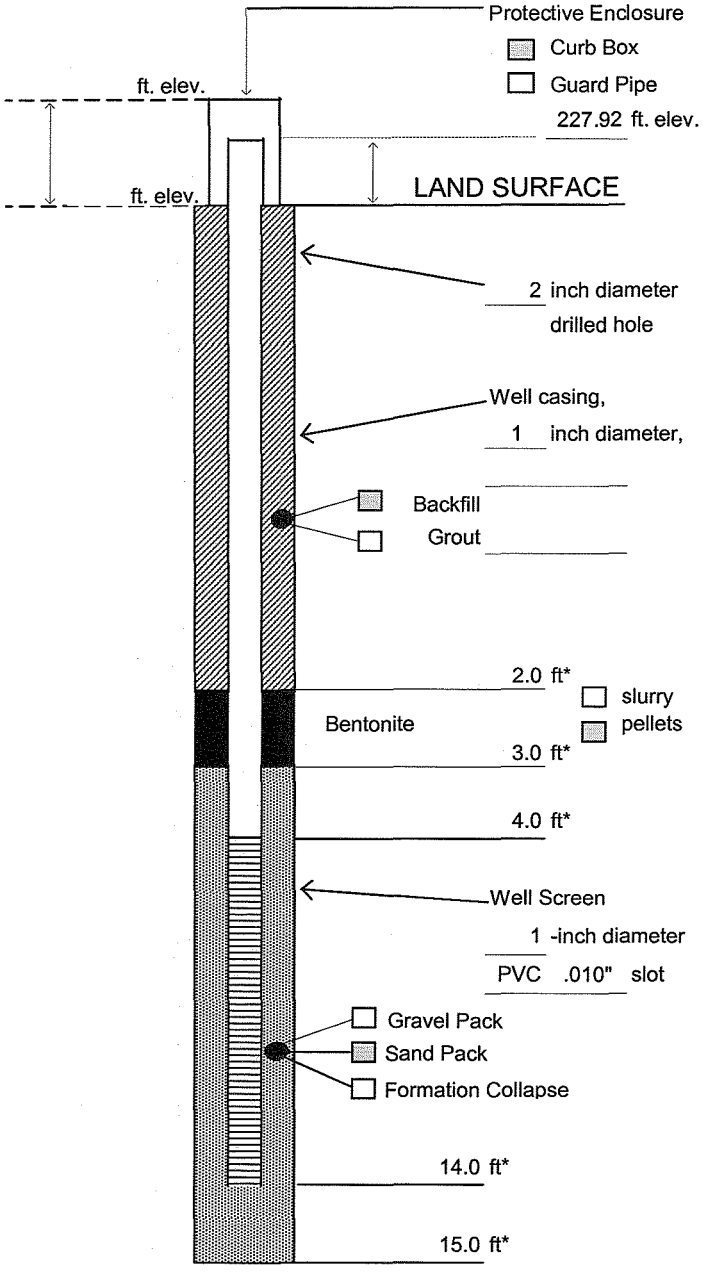
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-10

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-10 Boring No. GP-10

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.10.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

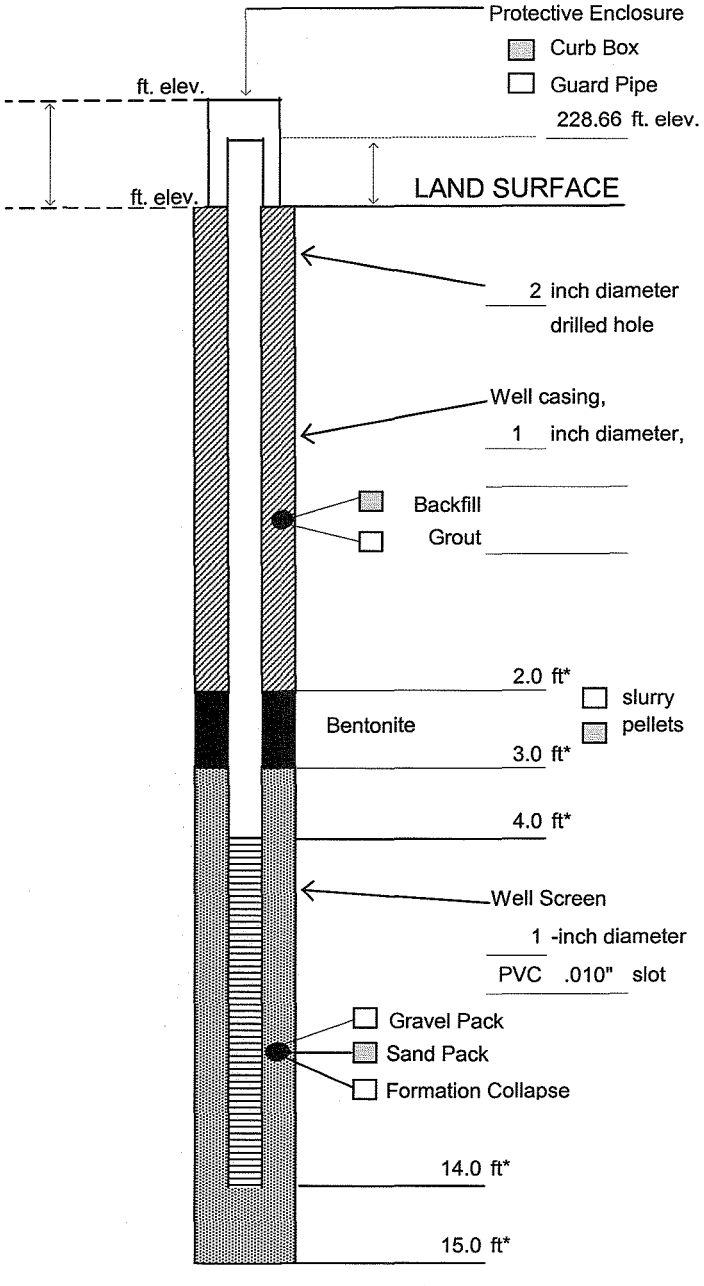
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-14

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-14 Boring No. GP-14

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.10.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

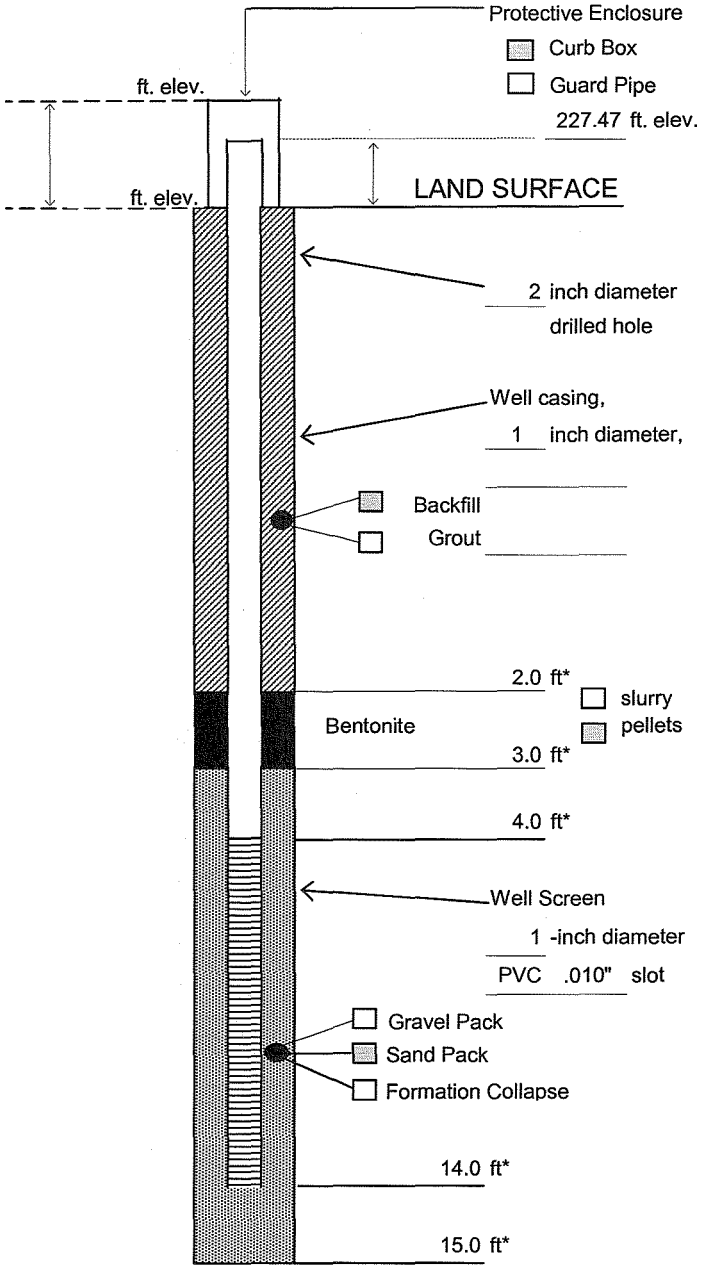
C.T. Male Observer N. Freeman

Notes:

Well No. CTM-15

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 05.5550

Project Name 312 Broadway

Well No. CTM-15 Boring No. GP-15

Town/City Schenectady

County Schenectady State NY

Installation Date(s) 5.10.06

Drilling Contractor Precision Environmental Services

Drilling Method 4' Macro Core Sampler

C.T. Male Observer N. Freeman

Notes:

APPENDIX D

WASTE DISPOSAL DOCUMENTATION

MCES
MC ENVIRONMENTAL SERVICES, Inc.

526 Queensbury Avenue
Queensbury, NY 12804

518-615-0349 Fax: 615-0355

Fax Transmittal

Date: 9-7-06

# of Pages: 5
(including cover sheet)

To: Brian Baulsir
CT Male Associates, PC

From: DeeDee Dicicco-Craft

Re: BOL, weight Tickets

Message:

Per your request, I'm faxing copies of:

1) BOL for Gasoline / Water

2) weight Ticket + Non Haz Waste manifest for Soil

3) weight ticket for drums that went to Scrap metal dealer.

Please let us know if you need anything else. We appreciate the opportunity to be of service!

This Memorandum is an acknowledgment that a Bill of Lading has been issued and is not Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper No. _____

Carrier No. SA-175

Page 1 of 1

MC Environmental Services, Inc.
(Name of carrier) (SCAC)

Date 9/7/06

On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec.1.

TO:
Consignee Norlite Corporation
Street 628 South Saratoga Rd
City Cohoes State NY Zip Code

FROM:
Shipper Metro Plex
Street 312 Broadway
City Schenectady State NY Zip Code
24 hr. Emergency Contact Tel. No. (800) 451-8984

Route Best Way

Vehicle Number 051

No. of Units & Container Type	HM	BASIC DESCRIPTION Proper Shipping Name, Hazard Class UN or NA Number, Packing Group or UN or NA Number, Proper Shipping Name, Hazard Class, Packing Group	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
1TT		Gasoline & Water Mixture	742	gallons		
		3 NA1203 PG III				

PLACARDS TENDERED: YES ☐ NO ☐

Note — (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____."
(2) Where the applicable tariff provisions specify a limitation of the carrier's liability absent a release or a value declaration by the shipper and the shipper does not release the carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172.
(3) Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation. See Section 2(a) of Item 360, Bills of Lading, Freight Bills and Statements of Charges and Section 1(a) of the Contract Terms and Conditions for a list of such articles.

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

_____ Signature

REMIT C.O.D. TO: ADDRESS

COD , Amt: $

C.O.D. FEE: PREPAID ☐ COLLECT ☐ $

TOTAL CHARGES $

FREIGHT CHARGES
FREIGHT PREPAID Check box if charges except when box at right is checked ☐ are to be collect

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

_____ (Signature of Consignor)

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.

Shipper hereby certifies that he is familiar with all the lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER James D Kilcoyne

PER

CARRIER MCES

PER A Shaw

DATE 7/7/06

3

Permanent post-office address of shipper.

ESMI OF NEW YORK
304 TOWPATH ROAD
FORT EDWARD, NEW YORK 12828

(518)747-5500

TICKET NO : 2025257
DATE : 9/7/2006

MAX. ACCEPTABLE SOIL: 150.00

CUSTOMER: MCE10
MC ENVIRONMENTAL SERVICES
526 QUEENSBURY AVE.

QUEENSBURY, NY 12804

JOB NO :7720
MULTIPLEX
314 CLINTON ST
SCHENECTADY NY
RUNNING TONNAGE: 4.59

TRUCKER:
MC-001 MC ENVIRONMENTAL

GROSS : 39820 SCALE 1 IN 3:01:53PM
TARE : 30640 STORED OUT

NET : 9180 LB
4.590

MX01 02 MIX GAS & DIESEL

WEIGH MASTER: KIM MATTESON #530022

DRIVER:

REMARKS:

MATERIAL $
DELIVERY $
MISC $
TAX $

TOTAL $

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A

Manifest Document No.:

2. Page 1 of 1

3. Generator's Name and Mailing Address: Metro Pk, 312 Broadway, Schuylerville, NY

4. Generator's Phone ( )

5. Transporter 1 Company Name: M C ENVIRONMENTAL SERVICES, INC.

6. US EPA ID Number: NYR000021071

A. State Transporter's ID: 5A-175

B. Transporter 1 Phone: (518) 747-3050

7. Transporter 2 Company Name:

8. US EPA ID Number:

C. State Transporter's ID: 10E-0349

D. Transporter 2 Phone:

9. Designated Facility Name and Site Address:
ESMI OF NEW YORK
304 TOWPATH ROAD
FORT EDWARD, NY 12828

10. US EPA ID Number:

E. State Facility's ID:

F. Facility's Phone: (518) 747-5500

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. PETROLEUM CONTAMINATED SOIL	XX1	DT	4/59	T
b.				
c.				
d.				

GENERATOR

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

NON-HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date Month	Day	Year
JAMIE B LAHUT	Jamie B Lahut	9	7	06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
[illegible]	[illegible]	9	7	06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date Month	Day	Year
[illegible]	[illegible]	9	7	06

Phone: 518-346-3445
Fax: 518-346-5393

T. A. PREDEL & CO., INC.

DEALERS IN WASTE MATERIALS
PAPER - HYGRADES - IRON - METALS
RECYCLING CENTER

201 Edison Ave. Schenectady, N. Y. 12301

ID# 7002768

Customer's Order No. ______ Phone No. ______ Date 9-7-06

Name MCES

Address Drums - CT Mate - Metroplex Job

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RETD.	PAID OUT	

QUAN.	DESCRIPTION	PRICE	AMOUNT
780	Tin		
	Thank You!		
		Tax	
		Total	

ALL claims and returned goods MUST be accompanied by this bill.

093260 Rec'd by ______

NATIONAL ASSOCIATION SUPPLY COOP., INC. NEW PHILADELPHIA, OH 189501-BB

APPENDIX E

SCALE HOUSE ACM/LBP SAMPLING RESULTS (JULY 11, 2006 LETTER)

C.T. MALE ASSOCIATES, P.C.

50 Century Hill Drive, P.O. Box 727, Latham, New York 12110-0727
518.786.7400 FAX 518.786.7299 ctmale@ctmale.com

July 11, 2006

Mr. Jayme B. Lahut,
Executive Director
Schenectady Metroplex Development Authority
433 State Street, Suite 401
Schenectady, NY 12305

Re: Asbestos Containing Materials and Lead-Based Paint
Survey and Sampling Services
The Scale House – 312 Broadway

Dear Mr. Lahut;

C.T. Male has performed sample collection and analysis of materials suspected to contain either asbestos or lead from the Scale House building prior to demolition activities. The Scale House building is a two story structure with two equal sides divided by an arched drive, built in a concrete slab. The roof is ceramic tile, the siding is a concrete like stucco in two layers, the lower floor is concrete and the upper floor is wood. Suspect materials included the exterior stucco, interior plasters and window glazings. Paint in the structure was deteriorated and mainly limited to remaining trimwork. The following are results of the current sample analysis. (See attached for lab results):

ASBESTOS

Sample #	Location	Material	Results
070506MS01	Exterior	Textured Concrete (outer)	No Asbestos Detected
070506MS02	Exterior	Textured Concrete (inner)	No Asbestos Detected
070506MS03	Exterior	Textured Concrete (outer)	No Asbestos Detected
070506MS04	Exterior	Textured Concrete (inner)	No Asbestos Detected
070506MS05	Exterior	Textured Concrete (outer)	No Asbestos Detected
070506MS06	Exterior	Textured Concrete (inner)	No Asbestos Detected
070506MS07	Exterior	Window Glazing	1.4% Chrysotile
070506MS08	Interior	Plasters (finish)	No Asbestos Detected
070506MS09	Interior	Plasters (scratch)	No Asbestos Detected
070506MS10	Interior	Plasters (finish)	No Asbestos Detected
070506MS11	Interior	Plasters (scratch)	No Asbestos Detected
070506MS12	Interior	Plasters (finish)	No Asbestos Detected
070506MS13	Interior	Plasters (scratch)	No Asbestos Detected
070506MS14	Exterior	Window Glazing	2.1% Chrysotile

ASBESTOS (cont.)

Sample #	Location	Material	Results
070506MS15	Interior	Plasters (finish)	No Asbestos Detected
070506MS16	Interior	Plasters (scratch)	No Asbestos Detected
070506MS17	Interior	Plasters (finish)	No Asbestos Detected
070506MS18	Interior	Plasters (scratch)	No Asbestos Detected

LEAD-BASED PAINT

Sample #	Sample Location	Substrate	Color	% Lead	(ppm)
021506MS01	Interior	Door Frame*	Green	2.10	21,000

ND – Not Detected * Positive for lead

CONCLUSIONS

ASBESTOS CONTAINING MATERIALS

Based on this survey and sample analysis the following materials are considered asbestos containing.

Exterior – Remaining glazings associated with 8 small windows and 4 larger windows. (Some of these are boarded over so the presence of actual windows is unknown.) Quantity of asbestos containing glazing materials is approximately 16 Sq. Ft.

The estimated cost to abate these windows is $3500.00.

LEAD-BASED PAINT

The paint sample results were positive for lead. Based on the sample result and the age of the structure, all painted surfaces should be assumed to be lead containing.

The following is a brief overview of the regulatory requirements that will be triggered by normal renovation or demolition activities.

- The main determinant of concern is the fact that the building will be undergoing renovation/demolition activities, therefore the paint is *not* being removed in such a way that will trigger lead "abatement" regulations. New York State has adopted the HUD federal guidelines when lead based paint is to be *abated.* This regulation should not be triggered under normal renovation or demolition activities.
- Any contractor performing the actual renovation activities WILL be required to follow 29 CFR 1926.62 OSHA's Lead Construction Standard. This standard is designed to protect workers from lead exposures above those deemed acceptable. This requirement should be noted in any bid documents or specifications.

- Disposal of construction debris containing lead-based paint is governed by the NYS DEC. There are separate disposal issues. Metals with lead-based paint can be recycled under a DEC exemption. All other demolition debris can be disposed of as C&D debris in a municipal landfill as long as TCLP analysis (Toxic Chemical Leaching Properties) is acceptable.

Please call me with any questions at (518) 786-7480.

Sincerely,

C.T. MALE ASSOCIATES, P.C.

Michael F. Sawyer
Senior Industrial Hygienist

Table I
Summary of Bulk Asbestos Analysis Results

05.5550; 312 Broadway

AmeriSci Sample #	Client Sample# Location	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	070506MS01 Bulk Sample		---	---	---	---	NAD	NA
02	070506MS02 Bulk Sample		---	---	---	---	NAD	NA
03	070506MS03 Bulk Sample		---	---	---	---	NAD	NA
04	070506MS04 Bulk Sample		---	---	---	---	NAD	NA
05	070506MS05 Bulk Sample		---	---	---	---	NAD	NA
06	070506MS06 Bulk Sample		---	---	---	---	NAD	NA
07	070506MS07 Bulk Sample		0.409	13.0	72.9	12.8	NAD	Chrysotile 1.4
08	070506MS08 Bulk Sample		---	---	---	---	NAD	NA
09	070506MS09 Bulk Sample		---	---	---	---	NAD	NA
10	070506MS10 Bulk Sample		---	---	---	---	NAD	NA
11	070506MS11 Bulk Sample		---	---	---	---	NAD	NA
12	070506MS12 Bulk Sample		---	---	---	---	NAD	NA
13	070506MS13 Bulk Sample		---	---	---	---	NAD	NA

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results

05.5550; 312 Broadway

AmeriSci Sample #	Client Sample# Location	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
14	070506MS14 Bulk Sample		0.395	12.4	73.7	13.9	Chrysotile 2.1	NA
15	070506MS15 Bulk Sample		----	----	----	----	NAD	NA
16	070506MS16 Bulk Sample		----	----	----	----	NAD	NA
17	070506MS17 Bulk Sample		----	----	----	----	NAD	NA
18	070506MS18 Bulk Sample		--	----	----	----	NAD	NA

Analyzed by: Marik Peysakhov_____; Date Analyzed 7/9/06

Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by EPA 600/M4-82-020 per 40 CFR (NVLAP Lab#200546-0); TEM (Semi/Full) by EPA 600/R-93/116 (not covered by NVLAP

for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or 'NVA = No Visible Asbestos' represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses); AIHA Lab#102843. NVLAP# 200546-0

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

Reviewed By:_____

AMERISCI NEW YORK
117 East 30th Street
New York, NY 10016
Toll Free (800) 705-5227
Phone (212) 679-8600
Fax (212) 679-9392

AMERISCI
www.amerisci.com

CHAIN OF CUSTODY RECORD

AMERISCI JOB #: 06071574

COMPANY:	ADDRESS:	P.O.#:
C.T. Male Associates	50 Century Hill Dr. Latham	

PROJECT INFORMATION	ANALYSIS TYPE	TURNAROUND TIME (X)							AIR FILTER INFORMATION:	
		6-8 HR	12 HR	24 HR	48 HR	72 HR	5 DAY	OTHER		
JOB NAME: 312 Broadway	TEM/AHERA								MCE	
	TEM/LEVEL II								PC	
JOB NUMBER: 05.5550	TEM/BULK								25 mm	
	TEM/DUST								37 mm	
JOB MANAGER: Mike Sawyer	TEM/WATER								0.45 um	
	PCM	RUSH							0.80 um	
JOB DESCRIPTION:	PLM	RUSH				X			TEMP:	
	OTHER:								OTHER:	

RESULTS TO: Mike Sawyer	RETURN SAMPLES YES_____ NO X
EMAIL TO:	PHONE: 518-786-7480
INVOICE TO: Mike Sawyer	FAX: 518-786-7299
COMMENTS: pob as needed	SITE FAX:
	PAGER/CELL:

SAMPLE ID	SAMPLE LOCATION	START TIME	STOP TIME	TOTAL TIME	X LITERS /MIN.	= TOTAL VOLUME	DATE COLLECTED
Blank							
070506MS01							
070506MS18							

SAMPLED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
MS	5/15/06		7/6/06 12:55
RELINQUISHED BY	DATE/TIME:	RECEIVED IN LAB BY:	DATE/TIME:
MS	11		

AmeriSci Boston
Eight School Street
Weymouth, MA 02189
781-337-9334

Laboratory Report

Report Date 07/11/2006
Workorder No. 0607-00022

Customer: C.T. Male Associates
50 Century Hill Drive
P.O. Box 727
Latham, NY 12110

Attention: M. Sawyer

Subject: 312 BROADWAY: LEAD IN PAINT

Sample: 001 070506MS01
Collection Date: 07/05/2006
Matrix: CHIP

Received Date: 07/06/2006 **Time:** 10:15:00AM

Parameter	Method	Results	Units	PQL	Tech	Analysis Date/Time	Qual
Lead, Chip	7420, SW-846	2.10	%	0.209	JS	07/11/2006 / 14:22	

To the best of my knowledge this report is true and accurate.

Authorized By: _____ Date: 7-11-06

Robert Bell, Environmental Laboratory Manager

NOTE: All solid results are reported on a dry weight basis unless otherwise noted.

Certifications: MA: MA069 NY:10982 CT: PH0119 RI:A45 NJ: 59744

ND = Not Detected PQL= Practical Quantitation Limit

AMERI SCI

www.amerisci.com

CHAIN OF CUSTODY RECORD

AMERISCI BOSTON
8 School Street ~Weymouth, MA 02189
888.724.5221 Toll Free
781.337.9334 Phone~781.337.7642 Fax

AMERISCI JOB NO:

PAGE _____ OF _____

DUE DATE:

TEMP UPON RECEIPT:

☐ 1 DAY ☐ 2 DAY ☐ 3 DAY ☐ 5 DAY ☐ 7 DAY ☐ 10 DAY

DATA PACKAGE: 0607-022

P.O.#

COMPANY: C.T. Male Associates P.C.

ADDRESS: 50 Century Hill Drive, Latham NY

PHONE: 518-786-7480 FAX 1: 518-265-3119 FAX 2: —

CLIENT CONTACT:

EMAIL: M.Sawyer@CTMALE.COM

PROJECT NAME: 312 Broadway

PROJECT NUMBER: 05.5550

PROJECT STATE:

MATRIX: A-WATER S-SOIL/SOLIDS SL-SLUDGE OIL-OIL CH-CHIPS
WI-WIPES CA-CASSETTES WA-WASTE O-OTHER

CONTAINER: P-PLASTIC G-GLASS V-VOA

LAB ID	CLIENT SAMPLE IDENTIFICATION	MATRIX	CONTAINER SIZE	CONTAINER TYPE	CONTAINER #	SAMPLING INFORMATION DATE	SAMPLING INFORMATION TIME	SAMPLING INFORMATION TECH	GRAB (G) OR COMPOSITE (C)	PRESERVATIVES	SAMPLE PH AT LOGIN	AAS for Lead	Notes:
	070506MS01	Clt											

SAMPLED BY: (PRINT) Mike Sawyer	DATE: 7/5/06	RECEIVED BY: (PRINT)	DATE:
(SIGN) MJS	TIME:	(SIGN)	TIME:
RELINQUISHED BY: (PRINT) Mike Sawyer	DATE:	RECEIVED BY: (PRINT)	DATE:
(SIGN) MJS	TIME: ↓	(SIGN)	TIME:
RELINQUISHED BY: (PRINT)	DATE:	RECEIVED FOR LABORATORY BY: Martha Porta	DATE: 7/6/06
(SIGN)	TIME:	(SIGN)	TIME: 10:15

APPENDIX F

GROUNDWATER SERVICES FIELD LOGS

Groundwater Services Field Log

DATE: 6/13/06

PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550

PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-1

NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 5.15′ FROM: Tpvc

BAILER ID: NA

DEPTH TO BOTTOM: 14.55′ FROM: Tpvc

BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 9.60′

BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

1″ = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

2" = 0.16 GALLONS 6" = 1.47 GALLONS

WELL CASING DIAMETER

WELL VOLUME: .614 GALLONS

VOLUMES PURGED: 7.0 GALLONS

PURGE METHOD: Peristaltic Pump

TIME STARTED: 1107 ; TIME FINISHED: 1335

OBSERVATIONS: COLOR Gray brown to clear ; ODOR none

SHEEN none ; TURBIDITY 1 NTU

OTHER NA

WATER RECOVERY HEIGHT: Continuous ; RECOVERY TIME IN MINUTES: Cont.

FIELD PARAMETERS: pH 6.83 SU , TEMPERATURE 16.7 Celsius

CONDUCTIVITY 3.75 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1320

NOTES: Negative Numbers obtained with turbidity monitor. After recalibration, negative numbers still obtained. All other parameters have stabilized.

Groundwater Services Field Log

DATE: 6/13/06 PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550 PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-2 NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 5.56′ FROM: Tpvc BAILER ID: NA

DEPTH TO BOTTOM: 13.60′ FROM: Tpvc BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 7.69′ BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

1″ = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

2" = 0.16 GALLONS 6" = 1.47 GALLONS

WELL CASING DIAMETER

WELL VOLUME: .32 GALLONS

VOLUMES PURGED: 3.5 / DRY GALLONS PURGE METHOD: Peristaltic Pump

TIME STARTED: 1420 ; TIME FINISHED: 1450

OBSERVATIONS: COLOR Yellow Brown to Clear ; ODOR None

SHEEN None ; TURBIDITY 11.83 NTU

OTHER NA

WATER RECOVERY HEIGHT: 5.69 ; RECOVERY TIME IN MINUTES: 8 minute

FIELD PARAMETERS: pH 6.82 SU , TEMPERATURE 18.3 Celsius

CONDUCTIVITY 3.27 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1435

NOTES:

Groundwater Services Field Log

DATE: 6/15/06 PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550 PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-2 NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 5.56' FROM: Tpvc BAILER ID: NA

DEPTH TO BOTTOM: 13.60' FROM: Tpvc BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 8.04' BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

WELL CASING DIAMETER

1" = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

WELL VOLUME: .33 GALLONS 2" = 0.16 GALLONS 6" = 1.47 GALLONS

VOLUMES PURGED: 1.5 GALLONS PURGE METHOD: Peristaltic Pump

TIME STARTED: 1510 ; TIME FINISHED: 1536

OBSERVATIONS: COLOR Light Brown to clear ; ODOR None

SHEEN None ; TURBIDITY 25 NTU

OTHER NA

WATER RECOVERY HEIGHT: 5.73' ; RECOVERY TIME IN MINUTES: Cont.

FIELD PARAMETERS: pH 6.68 SU , TEMPERATURE 17.5 Celsius

CONDUCTIVITY 4.27 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1530

NOTES:

Groundwater Services Field Log

DATE: 6/14/06

PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550

PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-3

NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 5.86' FROM: Tpvc

BAILER ID: NA

DEPTH TO BOTTOM: 13.9' FROM: Tpvc

BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 8.04'

BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

WELL CASING DIAMETER

1" = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

WELL VOLUME: .33 GALLONS

2" = 0.16 GALLONS 6" = 1.47 GALLONS

VOLUMES PURGED: 4.0 GALLONS

PURGE METHOD: Peristaltic Pump

TIME STARTED: 0835 ; TIME FINISHED: 0924

OBSERVATIONS: COLOR Yellow Brown to Clear ; ODOR Slight Sulfur odor

SHEEN None ; TURBIDITY 16.10 NTU

OTHER NA

WATER RECOVERY HEIGHT: 6.35' ; RECOVERY TIME IN MINUTES: 20 min.

FIELD PARAMETERS: pH 6.93 SU , TEMPERATURE 18.0 Celsius

CONDUCTIVITY 3.56 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 0915

NOTES:

Groundwater Services Field Log

DATE: 6/14/06 PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550 PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir and N.Freeman

MONITORING WELL ID#: CTM-4 (MS/MSD) NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 6.71′ FROM: Tpvc BAILER ID: NA

DEPTH TO BOTTOM: 13.8′ FROM: Tpvc BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 7.09 BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

WELL CASING DIAMETER

1″ = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

WELL VOLUME: .29 GALLONS 2" = 0.16 GALLONS 6" = 1.47 GALLONS

VOLUMES PURGED: 4.0 GALLONS PURGE METHOD: Peristaltic Pump

TIME STARTED: 0946 ; TIME FINISHED: 1050

OBSERVATIONS: COLOR Light gray to clear ; ODOR Slight Sulfur Odor

SHEEN None ; TURBIDITY 11.96 NTU

OTHER NA

WATER RECOVERY HEIGHT: 7.01′ ; RECOVERY TIME IN MINUTES: Cont.

FIELD PARAMETERS: pH 6.79 SU , TEMPERATURE 16.7 Celsius

CONDUCTIVITY 3.61 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1020

NOTES: MS/MSD obtained

Groundwater Services Field Log

DATE: 6/14/06

PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550

PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-5

NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 4.80′ FROM: Tpvc

BAILER ID: NA

DEPTH TO BOTTOM: 14.83′ FROM: Tpvc

BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 10.03′

BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

WELL CASING DIAMETER

1″ = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

WELL VOLUME: .41 GALLONS 2" = 0.16 GALLONS 6" = 1.47 GALLONS

VOLUMES PURGED: 3.75 GALLONS

PURGE METHOD: Peristaltic Pump

TIME STARTED: 1129 ; TIME FINISHED: 1159

OBSERVATIONS: COLOR Light brown to clear ; ODOR None

SHEEN None ; TURBIDITY 4.80 NTU

OTHER NA

WATER RECOVERY HEIGHT: 4.81′ ; RECOVERY TIME IN MINUTES: Cont.

FIELD PARAMETERS: pH 6.70 SU , TEMPERATURE 18.2 Celsius

CONDUCTIVITY 2.06 UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1150

NOTES:

Groundwater Services Field Log

DATE: 6/14/06 PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550 PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-6 NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 5. 41′ FROM: Tpvc BAILER ID: NA

DEPTH TO BOTTOM: 13.87′ FROM: Tpvc BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 8.46′ BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

WELL CASING DIAMETER

1″ = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

WELL VOLUME: .35 GALLONS 2" = 0.16 GALLONS 6" = 1.47 GALLONS

VOLUMES PURGED: 4.0 GALLONS PURGE METHOD: Peristaltic Pump

TIME STARTED: 1214 ; TIME FINISHED: 1305

OBSERVATIONS: COLOR Gray Brown to Clear ; ODOR None

SHEEN None ; TURBIDITY 31.7 NTU

OTHER NA

WATER RECOVERY HEIGHT: 5.62′ ; RECOVERY TIME IN MINUTES: Cont.

FIELD PARAMETERS: pH 6.75 SU , TEMPERATURE 17.6 Celsius

CONDUCTIVITY 2.74 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1255

NOTES:

Groundwater Services Field Log

DATE: 6/14/06 PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550 PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-7 NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 5.75' FROM: Tpvc BAILER ID: NA

DEPTH TO BOTTOM: 13.63' FROM: Tpvc BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 7.88' BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

WELL CASING DIAMETER

1" = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

WELL VOLUME: .32 GALLONS 2" = 0.16 GALLONS 6" = 1.47 GALLONS

VOLUMES PURGED: 4.0 GALLONS PURGE METHOD: Peristaltic Pump

TIME STARTED: 1353 ; TIME FINISHED: 1436

OBSERVATIONS: COLOR Yellow Brown to Clear ; ODOR None

SHEEN None ; TURBIDITY 6.03 NTU

OTHER NA

WATER RECOVERY HEIGHT: 7.00' ; RECOVERY TIME IN MINUTES: Cont.

FIELD PARAMETERS: pH 6.94 SU , TEMPERATURE 18.1 Celsius

CONDUCTIVITY 3.32 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1425

NOTES:

Groundwater Services Field Log

DATE: 6/15/06 PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550 PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-8 NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 6.23' FROM: Tpvc BAILER ID: NA

DEPTH TO BOTTOM: 13.90' FROM: Tpvc BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 7.67' BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

WELL CASING DIAMETER

1" = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

WELL VOLUME: .31 GALLONS 2" = 0.16 GALLONS 6" = 1.47 GALLONS

VOLUMES PURGED: 3.0 GALLONS PURGE METHOD: Peristaltic Pump

TIME STARTED: 0917 ; TIME FINISHED: 1010

OBSERVATIONS: COLOR Gray Brown to Clear ; ODOR None

SHEEN None ; TURBIDITY 20 NTU

OTHER NA

WATER RECOVERY HEIGHT: 6.62' ; RECOVERY TIME IN MINUTES: Cont.

FIELD PARAMETERS: pH 6.65 SU , TEMPERATURE 16.8 Celsius

CONDUCTIVITY 3.54 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 0945

NOTES:

Groundwater Services Field Log

DATE: 6/15/06

PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550

PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-9

NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 4.67' FROM: Tpvc

BAILER ID: NA

DEPTH TO BOTTOM: 13.77' FROM: Tpvc

BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 9.1'

BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

1" = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

2" = 0.16 GALLONS 6" = 1.47 GALLONS

WELL CASING DIAMETER

WELL VOLUME: .37 GALLONS

VOLUMES PURGED: 2.75 GALLONS

PURGE METHOD: Peristaltic Pump

TIME STARTED: 1032 ; TIME FINISHED: 1132

OBSERVATIONS: COLOR Brown Gray to Clear ; ODOR None

SHEEN None ; TURBIDITY 35 NTU

OTHER NA

WATER RECOVERY HEIGHT: 4.93' ; RECOVERY TIME IN MINUTES: Cont.

FIELD PARAMETERS: pH 6.88 SU , TEMPERATURE 17.6 Celsius

CONDUCTIVITY 6.01ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1115

NOTES:

Groundwater Services Field Log

DATE: 6/15/06 PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550 PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-10 NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 5.11' FROM: Tpvc BAILER ID: NA

DEPTH TO BOTTOM: 13.75' FROM: Tpvc BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 8.64' BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

WELL CASING DIAMETER

1" = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

WELL VOLUME: .35 GALLONS 2" = 0.16 GALLONS 6" = 1.47 GALLONS

VOLUMES PURGED: 4.5 GALLONS PURGE METHOD: Peristaltic Pump

TIME STARTED: 1205 ; TIME FINISHED: 1255

OBSERVATIONS: COLOR Dark Gray Brown ; ODOR Slight Sulfur Odor

SHEEN None ; TURBIDITY 14 NTU

OTHER NA

WATER RECOVERY HEIGHT: 5.32' ; RECOVERY TIME IN MINUTES: Cont

FIELD PARAMETERS: pH 6.84 SU , TEMPERATURE 18.2 Celsius

CONDUCTIVITY 3.38 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1240

NOTES:

Groundwater Services Field Log

DATE: 6/15/06 PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550 PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-14 NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 5.43' FROM: Tpvc BAILER ID: NA

DEPTH TO BOTTOM: 13.89' FROM: Tpvc BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 8.46' BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

WELL CASING DIAMETER

1" = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

WELL VOLUME: .35 GALLONS 2" = 0.16 GALLONS 6" = 1.47 GALLONS

VOLUMES PURGED: 4.0 GALLONS PURGE METHOD: Peristaltic Pump

TIME STARTED: 1345 ; TIME FINISHED: 1430

OBSERVATIONS: COLOR Yellow brown to clear ; ODOR None

SHEEN None ; TURBIDITY 40 NTU

OTHER NA

WATER RECOVERY HEIGHT: 5.83' ; RECOVERY TIME IN MINUTES: Cont.

FIELD PARAMETERS: pH 7.18 SU , TEMPERATURE 16.1 Celsius

CONDUCTIVITY .871 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1410

NOTES:

Groundwater Services Field Log

DATE: 6/15/06 PROJECT NAME: 312 Broadway

PROJECT NO.: 05.5550 PROJECT LOCATION: Schenectady, NY

SAMPLING PERSONNEL: B.Baulsir

MONITORING WELL ID#: CTM-15 NOTES TAKEN BY: B.Baulsir

DEPTH TO WATER: 4.71' FROM: Tpvc BAILER ID: NA

DEPTH TO BOTTOM: 13.73' FROM: Tpvc BAILER: LAB CLEANED / FIELD CLEANED

WATER COLUMN HEIGHT: 9.02' BAILER: STAINLESS STEEL NA

OTHER NA

CONVERSION FACTORS LINEAR FEET TO GALLONS

WELL CASING DIAMETER

1" = 0.041 GALLONS 3" = 0.38 GALLONS

1.25" = 0.064 GALLONS 4" = 0.66 GALLONS

WELL VOLUME: .37 GALLONS 2" = 0.16 GALLONS 6" = 1.47 GALLONS

VOLUMES PURGED: 2.5 GALLONS PURGE METHOD: Peristaltic Pump

TIME STARTED: 1610 ; TIME FINISHED: 1700

OBSERVATIONS: COLOR Dark Gray to clear ; ODOR Slight Petroleum odor

SHEEN Slight Sheen ; TURBIDITY 19 NTU

OTHER NA

WATER RECOVERY HEIGHT: 4.97' ; RECOVERY TIME IN MINUTES: Cont.

FIELD PARAMETERS: pH 7.07 SU , TEMPERATURE 17.6 Celsius

CONDUCTIVITY 6.98 ms/cm UMHO/CM, OTHER NA

SAMPLE COLLECTION TIME: 1645

NOTES:

APPENDIX G

CDs of LABORATORY ANALYTICAL DATA (UNVALIDATED)

EXHIBIT 1

NYSDEC WORK PLAN APPROVAL LETTER

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau D, 12th Floor
625 Broadway, Albany, New York 12233-7013
Phone: (518) 402-9818 • **FAX:** (518) 402-9819
Website: www.dec.state.ny.us

Denise M. Sheehan
Commissioner

APR 24 2006

Mr. Kirk Moline
C.T. Male Associates, P.C.
50 Century Hill Drive
Latham, New York 12110-0727

APR 2 0 2006

RE: Remedial Investigation/Alternatives Analysis Work Plan
April 7, 2006
312 Broadway, Site No. E447035
Schenectady (C), Schenectady County

Dear Mr. Moline:

I have reviewed the final Remedial Investigation/Alternatives Analysis Work Plan that you submitted based on comments of the draft work plan from the New York State Department of Environmental Conservation (Department) and New York State Department of Health (NYSDOH). I have also reviewed the proposed budget that was submitted with the final work plan. Both documents are acceptable and approved.

Please be aware the proposed budget is equal to the amount allowed under the State Assistance Contract (SAC) for this project. Without a contract amendment, the City of Schenectady (City) cannot be reimbursed for any additional costs.

I have asked that a copy of the contract between C.T. Male Associates, P.C., (C.T. Male) and the City be submitted to the Department. It is my understanding that the contract multiplier is 2.997. This multiplier accounts for direct and indirect costs as well as the fixed fee negotiated with the City. This figure is greater than 2.8, the maximum figure determined to be eligible for reimbursement by the Department. However, based on the information in a letter to Mr. Bernard Sisson, P.E., from the Department regarding the "714 Broadway" ERP project on September 26, 2005, I will allow the higher multiplier.

The work plan and budget will be incorporated into SAC No.C302802. Arrangements should be made to deposit the final work plans in the document repositories as outlined in the Citizen Participation Plan and noted in the project fact sheet.

If you have any questions regarding this letter or any other issues related to this project, please do not hesitate to contact me at (518) 402-9818.

Sincerely,

Ian Beilby, P.E.
Project Manager
Remedial Bureau D
Division of Environmental Remediation

cc. T. Girard, DOH
J. Lahut, Schenectady Metroplex
A. Goldberger, City of Schenectady

EXHIBIT 2

DATA USABILITY SUMMARY REPORTS

C.T. MALE ASSOCIATES, P.C.

SUBJECT: Data Usability Summary Report (DUSR)
Metroplex – 312 Broadway Surface Soil Investigation
Chemtech SDG No.: X2764
C.T. Male Project No.: 05.5550

DATE: June 15, 2006

On May 11, 2006, C.T. Male Associates, P.C. (C. T. Male) collected thirteen (13) surface soil samples from the Metroplex site at 312 Broadway. The samples were submitted, along with an equipment blank and a trip blank to Chemtech Laboratories (Chemtech) in Mountainside, NJ for the following analyses:

Parameter	Sample Date	VOC, SW-846 8260B	SVOC , SW-846 8270C	Pesticides, SW-846 8081A	PCBs, SW-846 8082	TAL Metals, SW-846 6010 and 7471
Sample Ids						
SS-1	5/11/2006	1	1	1	1	1
SS-2	5/11/2006	1	1	1	1	1
SS-3	5/11/2006	1	1	1	1	1
SS-4	5/11/2006	1	1	1	1	1
SS-5	5/11/2006	1	1	1	1	1
SS-6	5/11/2006	1	1	1	1	1
SS-7	5/11/2006	1	1	1	1	1
SS-8	5/11/2006	1	1	1	1	1
SS-9	5/11/2006	1	1	1	1	1
SS-10	5/11/2006	1	1	1	1	1
SS-11	5/11/2006	1	1	1	1	1
SS-12	5/11/2006	1	1	1	1	1
Dup #2[1]	5/11/2006	1	1	1	1	1
Equipment Blank #2	5/11/2006	1	1	1	1	1
Trip Blank	-	1	0	0	0	0
Total Samples		**15**	**14**	**14**	**14**	**14**

VOC – Volatile organic compounds
SVOC – Semi-volatile organic compounds
PCBs – Polychlorinated Biphenyls

C. T. Male evaluated the data reported by the laboratory to determine usability per Appendix 2B of the *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC, December 2002), with guidance from the *USEPA CLP National Functional Guidelines for Organic and Inorganic Data Review* (October 1999 and 2004, respectively). The following criteria were reviewed:

- Completeness of data package as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables;
- Holding time compliance for chemical analysis;

[1] Field duplicate of SS-8.

- Protocol required limits and specification compliance for quality control (QC) data (e.g., instrument tuning, calibration standards, blank results, spike results, duplicate results, etc);
- Contract compliance for analytical protocols;
- Omissions and transcription errors; and
- Data qualification.

Data Completeness

Documentation required by the project was included in the data package. There were no discrepancies found between the raw data and summary forms. The laboratory Case Narratives (Attachment A) identified deviations from laboratory analytical specifications. C.T. Male reviewed these QC results to determine if sample results should be qualified based on the criteria provided in Appendix 2B of the *Technical Guidance for Site Investigation and Remediation*. QC exceedences and data qualification recommendations are presented in the Data Evaluation Checklist (Attachment B). Qualified sample results are presented in the laboratory summary forms, which are located in Attachment C.

QC exceedences and data qualification recommendations are summarized below. It is recommended that results from the initial analyses of each sample be reported as the representative results for that sample except where noted below.

Sample Condition upon Receipt and Holding Times

Chemtech received all the samples listed on the chain of custody (COC) records intact and in good condition. The temperature of samples was within laboratory specification limits of 2 to 6°C upon receipt.

Project samples were prepared and analyzed within EPA-established holding times.

Volatile Organic Analysis (VOA) by SW-846 8260B

All samples were analyzed within 12 hours of the performance check standard, BFB. Percent relative abundance of all ions met the criteria specified in Table 4 of the EPA SW-846 Method 8260B. Laboratory specifications were met during the initial and continuing calibrations associated with the project samples. In addition the average relative response factor (RRF) was greater than or equal to 0.05 for target analytes during the initial and continuing calibrations. The percent relative standard deviation (%RSD) between RRF was less than or equal to 30% during the initial calibration, and the percent difference (%D) between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes except trichlorofluoromethane (31.58%RSD) during the initial calibration associated with the analyses of samples Trip Blank and Equipment Blank #2; methylene chloride (33.2%RSD) and trans-1,2-dichloroethene (33.4%RSD) during the initial calibration associated with the analyses of samples SS-1, SS-2RE, SS-3RE, SS-4, SS-5, SS-6RE, SS-7, SS-8, SS-9, SS-10, SS-11, SS-12 and Dup#2; carbon disulfide (32.8%D), methylene chloride (26.3%D) and trans-1,2-dichloroethene (26.3%D) during the continuing calibration associated with the analyses of samples Trip Blank and Equipment Blank #2; methylene chloride (47.9%D) during the continuing calibration associated with the analysis of sample SS-9; bromomethane (34.2%D), chloroethane (59.8%D) and methylene chloride (67.1%D) during the continuing calibration associated with the analysis of samples SS-1, SS-4, SS-5 and SS-10; and bromomethane (31.9%D), chloroethane (56.8%D) and methylene

chloride (78.2%D) during the continuing calibration associated with the analysis of samples SS-11, SS-12, Dup#2 and the reanalysis of samples SS-2, SS-3 and SS-6. The associated results have been qualified as estimated (J/UJ) due to poor correlation in the calibration standards.

Surrogate recovery and internal standard results met laboratory specifications for project samples except the percent recovery (%R) for the surrogate 4-bromofluorobenzene was below specifications during the initial analysis of samples SS-2 and SS-3, and the initial and reanalysis of SS-6. The associated results have been qualified as estimated (J/UJ) due to analytical inaccuracy. The internal standard 1,4-dichlorobenzene-d4 was below specifications during the initial and reanalysis of samples SS-2, SS-3 and SS-6. Also, the internal standard chlorobenzene-d5 was below specifications during the initial analysis of sample SS-6. The associated results have been qualified as estimated (J/UJ) due to low machine sensitivity. It is recommended that the reanalysis of samples SS-2, SS-3 and SS-6 be reported as the representative results for those samples.

The %R results for laboratory control sample (LCS) analyses were within laboratory specifications for the target analytes except methylene chloride exceeded specifications during the LCS analyses associated with the analyses of samples SS-2RE, SS-3RE, SS-6RE, SS-7, SS-8, SS-9, SS-11, SS-12 and Dup#2; methyl tert-butyl ether, methylene chloride, and trans-1,2-dichloroethene exceeded specifications and chloroethane was below specifications during the LCS associated with the analyses of samples SS-1, SS-4, SS-5 and SS-10. Associated detected results have been qualified as estimated (J) due to analytical inaccuracy.

A method blank was reported for each analytical batch. A trip blank and an equipment blank were also submitted to the laboratory for VOA. Target analytes and tentatively identified compounds (TICs) were not detected during the analysis of the trip blank. Target analytes were not detected during the analysis of the equipment blank, however the TIC methane,dibromfluoro- was detected at a concentration of 26 µg/L during the analysis of the equipment blank. Methylene chloride was detected during the anlayses of the method blanks associated with the project samples. An action level was developed by multiplying the highest concentration observed among the associated blanks by a factor of 10 for common laboratory contaminants (methylene chloride) and a factor of 5 for other analytes. Results in the associated samples reported below the action level have been have been qualified as non-detect (U) and the detection limit has been elevated to the amount detected in the sample.

Criteria for accuracy and precision were met during the matrix spike (MS) and MS duplicate (MSD) analysis of sample SS-9 for target analytes except the relative percent difference (%RPD) between MS and MSD results exceeded laboratory specifications for chloroethane and methyl acetate. The associated results have been qualified as estimated (J/UJ) due to analytical imprecision.

A field duplicate evaluation was performed on samples Dup#2 (blind field duplicate) and SS-8. Refer to Attachment B-3 for the duplicate evaluation. Toluene and m&p-xylenes were detected in Dup #2 and were not detected in SS-9, and tetrachloroethene was detected in SS-9 but was not detected in Dup#2. The associated results have been qualified as estimated (J/UJ) due to analytical imprecision.

SVOA by SW-846 8270C

Project samples were analyzed within 12 hours of the performance check standard, DFTPP. Percent relative abundance of ions met the criteria specified in Table 3 of the EPA SW-846 Method 8270C. Laboratory specifications were met during the initial and continuing calibrations associated with the

project samples. In addition the average RRF was greater than or equal to 0.05 for target analytes during the initial and continuing calibrations. The %RSD between RRF was less than or equal to 30% during the initial calibration, and the %D between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes except 2,4-dinitrophenol (31.9%RSD) during the initial calibration associated with the analyses of samples SS-1, SS-2, SS-3, SS-4, SS-5, SS-6, SS-7, SS-8, SS-9, SS-10, SS-11, SS-12 and Dup#2; benzaldehyde (36.94%RSD) and 2,4-dinitrophenol (44.32%RSD) during the initial calibration associated with the analysis of sample Equipment Blank #2; indeno(1,2,3-cd)pyrene (45.8%D), dibenz(a,h)anthracene (37.8%D) and benzo(g,h,i)perylene (47%D) during the continuing calibration associated with the analyses of samples SS-2, SS-3, SS-8, SS-10 and SS-11; and 2,2-oxybis(1-chloropropane) (33.3%D), n-nitroso-di-n-propylamine (26.1%D), caprolactam (25.7%D), 4-nitrophenol (77.1%D), indeno(1,2,3-cd)pyrene (42.9%D), dibenz(a,h)anthracene (29.3%D) and benzo(g,h,i)perylene (33.6%D) during the continuing calibration associated with the analysis of sample Equipment Blank #2. The associated results have been qualified as estimated (J/UJ) due to poor correlation in the calibration standards.

Surrogate recoveries and internal standard results met laboratory specifications for project samples except the %R for the surrogate terphenyl-d14 exceeded laboratory specifications during the analyses of samples SS-8, SS-11 and Dup#2. However, qualification was not warranted as the remaining surrogates were within specifications. The internal standard perylene-d12 was below laboratory specifications during the analyses of samples SS-1, SS-2, SS-3, SS-4, SS-5, SS-6, SS-7, SS-8, SS-9, SS-10, SS-11, SS-12 and Dup#2. The associated results have been qualified as estimated (J/UJ) due to low machine sensitivity.

The %R results for LCS analyses were within laboratory specifications for target analytes except caprolactam, 4-nitrophenol and benzo(k)fluoranthene were below specifications and pyrene exceeded specifications during the LCS associated with the analysis of Equipment Blank #2. The associated detected pyrene results have been qualified as estimated (J), and the associated caprolactam, 4-nitrophenol and benzo(k)fluoranthene results have been qualified as estimated (J/UJ) due to analytical inaccuracy.

A method blank was reported for each analytical batch. An equipment blank was also submitted to the laboratory for SVOA. Di-n-butylphthalate was detected during the analysis of a method blank associated with the analysis of the project samples. Several TICs were detected during the anlalyses of the method blanks and equipment blank associated with the analyses of the project samples with retention times ranging from 2.56 to 32.98. Action levels were developed by multiplying the highest concentration observed among the associated blank by a factor of 5. Results in the associated sample reported below the action level have been have been qualified as non-detect (U) and the detection limit has been elevated to the amount detected in the sample.

Criteria for accuracy and precision were met for target analytes during the MS and MSD analysis of sample SS-9 except the %R for hexachlorocyclopentadiene, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol and indeno(1,2,3-cd)pyrene were below specifications and bis(2-ethylhexyl)phthalate exceeded specifications during the MS and MSD analysis. Hexachlorocyclopentadiene, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol and indeno(1,2,3-cd)pyrene results have been qualified as estimated (J/UJ), and detected results for bis(2-ethylhexyl)phthalate have been qualified as estimated (J) in the associated sample due to analytical inaccuracy.

A field duplicate evaluation was performed on samples Dup#2 (blind field duplicate) and SS-8. Refer to Attachment B-3 for the duplicate evaluation. Phenanthrene and fluoranthene results have been qualified as estimated (J) in the associated samples due to analytical imprecision.

Pesticide Analysis by SW-846 8081

Laboratory specifications were met during the initial and continuing calibrations. The %RSD between RRF was less than or equal to 30% during the initial calibration, and the %D between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes except 4,4'-DDT (53%RSD) and methoxychlor (32%RSD) during the initial calibration associated with the analyses of the project samples and 4,4'-DDT (34%D) during the continuing calibration associated with the analysis of sample SS-10. The associated results have been qualified as estimated (J/UJ) due to poor correlation in the calibration standards.

Surrogate recoveries met laboratory specifications for project samples.

The %R results for LCS analysis were within laboratory specifications for target analytes.

A method blank was reported for each analytical batch. An equipment blank was also submitted to the laboratory for pesticide analysis. Target compounds were not detected during the analysis of the method blank or the equipment blank.

Criteria for accuracy and precision were met for target analytes during the MS and MSD analysis of sample SS-9.

A field duplicate evaluation was performed on samples Dup#2 (blind field duplicate) and SS-8. Criteria for precision was achieved as target analytes were not detected in the associated samples.

PCB Analysis by SW-846 8082

Laboratory specifications were met during the initial and continuing calibrations. The %RSD between RRF was less than or equal to 30% during the initial calibration, and the %D between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes.

Surrogate recoveries met laboratory specifications for project samples except the %R for decachlorobiphenyl was below specifications during the analyses of samples SS-7 and SS-8 and exceeded specifications during the diluted analysis of SS-10. Qualification was not warranted as the remaining surrogate was within specifications.

The %R results for LCS analysis were within laboratory specifications for the target analyte aroclor 1016 and aroclor 1260.

A method blank was reported for each analytical batch. An equipment blank was also submitted to the laboratory for PCB analysis. Target compounds were not detected during the analysis of the method blank or the equipment blank.

Criteria for accuracy and precision were met during the MS/MSD analysis of sample SS-9 for target analytes aroclor 1016 and aroclor 1260.

A field duplicate evaluation was performed on samples Dup#2 (blind field duplicate) and SS-8. Criteria for precision was achieved as target analytes were not detected in the associated samples.

Metals and Mercury Analysis by SW-846 6010B and 7471A

The inductively coupled plasma (ICP) instrument was calibrated according to the SW-846 Methods 6010B and 7471A. All samples were bracketed by ICV/CCV with recoveries that were within 80-120% for mercury and 90-110% of the true value for all other target metals.

Recovery of the ICP interference check sample fell within 80-120% of the true standard concentration for all target analytes.

Laboratory specifications (80-120%R) were met during the LCS analysis for target metals.

The %R of the contract required detection limit (CRDL) standard fell within 75-125% of the true value for target metals except the %R of mercury was below 75% during the analysis of the CRDL standard associated with the analysis of samples SS-1, SS-2, SS-3, SS-4, SS-5, SS-6, SS-7, SS-8 and SS-9 and exceeded 125% during the analysis of the CRDL standard associated with the analysis of sample Equipment Blank#2. The %R of iron and potassium were below 75% during the analysis of the CRDL standard associated with the analyses of sample Equipment Blank#2. The %R of iron and sodium were below 75% during the analysis of the CRDL standard associated with the analyses of samples SS-1, SS-2, SS-3, SS-4, SS-5, SS-6, SS-7, SS-8, SS-9, SS-10, SS-11, SS-12 and Dup#2. Associated detected results in Equipment Blank#2 for mercury have been qualified as estimated (J), and associated results for mercury, iron, potassium and sodium have been qualified as estimated (J/UJ) due to analytical inaccuracy.

A method blank was reported for each batch, and a calibration blank was analyzed at the beginning, after every 10 samples, and at the end of each batch. An equipment blank was also submitted to the laboratory for metals analysis. Refer to Attachment B-1 for an evaluation of blank contamination. Action levels were developed by multiplying the highest concentration observed among all associated blanks by a factor of 5. Samples with results reported below the action level have been have been qualified as non-detect (U) and the detection limit has been elevated to the amount detected in the sample.

Criteria for accuracy and precision were met during the MS/MSD analysis of sample SS-9 for target metals except the %R for antimony, cobalt, nickel and silver were below specifications during the MS and MSD analysis. The associated antimony, cobalt, nickel and silver results have been qualified as estimated (J/UJ) in the associated sample due to analytical inaccuracy.

Significant chemical and matrix interference were observed during the serial dilution analysis of sample SS-9. The %D between initial and serially diluted results was less than 10% for those target metals with results greater than fifty times the detection limit except calcium, iron, lead, magnesium, manganese and potassium. Calcium, iron, lead, magnesium, manganese and potassium results have been qualified as estimated (J) due to chemical and matrix interference.

A laboratory duplicate evaluation was performed on sample SS-9. Criteria for precision was achieved for detected results except selenium was detected in the sample and was not detected during the duplicate analysis. Refer to Attachment B-2 for the duplicate evaluation. Selenium results have been qualified as estimated (J) due analytical imprecision.

A field duplicate evaluation was performed on samples Dup#2 (blind field duplicate) and SS-8. Refer to Attachment B-3 for the duplicate evaluation. Antimony, cadmium, calcium, copper, lead, magnesium and selenium results have been qualified as estimated (J/UJ) in the associated samples due to analytical imprecision.

Summary

Overall, data quality objectives for the Metroplex site at 312 Broadway were met, as there were no data deficiencies that would indicate the need for re-sampling. The analytical results are usable with the qualification of results as described in this DUSR. No analytical data has been rejected.

Megan Drosky
Environmental Scientist

C.T. MALE ASSOCIATES, P.C.

SUBJECT: Data Usability Summary Report (DUSR)
Metroplex – 312 Broadway Subsurface Soil Investigation
Chemtech SDG Nos.: X2731 and X2747
C.T. Male Project No.: 05.5550

DATE: June 15, 2006

Between May 8 and 10, 2006, C.T. Male Associates, P.C. (C. T. Male) collected thirteen (13) subsurface soil samples from the Metroplex site at 312 Broadway The samples were submitted, along with an equipment blank and a trip blank to Chemtech Laboratories (Chemtech) in Mountainside, NJ for the following analyses:

Parameter	Sample Date	VOC, SW-846 8260B	SVOC , SW-846 8270C	Pesticides, SW-846 8081A	PCBs, SW-846 8082	TAL Metals, SW-846 6010 and 7471
Sample Ids						
GP-1 (4-6')	5/8/2006	1	1	1	1	1
GP-2 (4-6')	5/8/2006	1	1	1	1	1
GP-3 (4-8')	5/8/2006	1	1	1	1	1
GP-4 (4-6')	5/8/2006	1	1	1	1	1
GP-5 (10-12')	5/8/2006	1	1	1	1	1
GP-6 (4-6')	5/9/2006	1	1	1	1	1
GP-7 (4-6')	5/9/2006	1	1	1	1	1
GP-8 (4-6')	5/9/2006	1	1	1	1	1
GP-9 (4-6')	5/9/2006	1	1	1	1	1
GP-10 (4-6')	5/10/2006	1	1	1	1	1
GP-14 (4-6')	5/10/2006	1	1	1	1	1
GP-15 (8-12')	5/10/2006	1	1	1	1	1
Dup #1[1]	5/8/2006	1	1	1	1	1
Equipment Blank	5/10/2006	1	1	1	1	1
Trip Blank	-	1	0	0	0	0
Total Samples		**15**	**14**	**14**	**14**	**14**

VOC – Volatile organic compounds
SVOC – Semi-volatile organic compounds
PCBs – Polychlorinated Biphenyls

C. T. Male evaluated the data reported by the laboratory to determine usability per Appendix 2B of the *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC, December 2002), with guidance from the *USEPA CLP National Functional Guidelines for Organic and Inorganic Data Review* (October 1999 and 2004, respectively). The following criteria were reviewed:

- Completeness of data package as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables;
- Holding time compliance for chemical analysis;

[1] Field duplicate of GP-1 (4-6').

- Protocol required limits and specification compliance for quality control (QC) data (e.g., instrument tuning, calibration standards, blank results, spike results, duplicate results, etc);
- Contract compliance for analytical protocols;
- Omissions and transcription errors; and
- Data qualification.

Data Completeness

Documentation required by the project was included in the data package. The laboratory report for SDG X2731 did not include semivolatile organic analysis (SVOA) results for the diluted analysis of sample GP-6 (4-6'). The laboratory made the appropriate corrections and reissued the associated pages on June 15, 2006. The revised pages have been inserted in to the original laboratory report and copies are included in Attachment A. The laboratory Case Narratives (Attachment B) identified deviations from laboratory analytical specifications. C.T. Male reviewed these QC results to determine if sample results should be qualified based on the criteria provided in Appendix 2B of the *Technical Guidance for Site Investigation and Remediation*. QC exceedences and data qualification recommendations are presented in the Data Evaluation Checklists (Attachment C). Qualified sample results are presented in the laboratory summary forms, which are located in Attachment D.

QC exceedences and data qualification recommendations are summarized below. It is recommended that results from the initial analyses of each sample be reported as the representative results for that sample.

It is recommended that sample results which were reported by the laboratory as exceeding the calibration range (E-flagged), be reported from the analysis at the lowest dilution with results within calibration range.

Sample Condition upon Receipt and Holding Times

Chemtech received all the samples listed on the chain of custody (COC) records intact and in good condition. The temperature of samples was within laboratory specification limits of 2 to 6°C upon receipt.

Project samples were prepared and analyzed within EPA-established holding times.

Volatile Organic Analysis (VOA) by SW-846 8260B

All samples were analyzed within 12 hours of the performance check standard, BFB. Percent relative abundance of all ions met the criteria specified in Table 4 of the EPA SW-846 Method 8260B. Laboratory specifications were met during the initial and continuing calibrations associated with the project samples. In addition the average relative response factor (RRF) was greater than or equal to 0.05 for target analytes during the initial and continuing calibrations. The percent relative standard deviation (%RSD) between RRF was less than or equal to 30% during the initial calibration, and the percent difference (%D) between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes except methylene chloride (33.2%RSD) and trans-1,2-dichloroethene (33.4%RSD) during the initial calibration associated with the analysis of samples GP-1 (4-6'), GP-2 (4-6'), GP-3 (4-8'), GP-4 (4-6'), GP-6 (4-6'), GP-7 (4-6'), GP-8 (4-6'), GP-9 (4-6'), Dup#1,

GP-10 (4-6') and GP-14 (4-8'); trichlorofluoromethane (31.58%RSD) during the initial calibration associated with the analysis of samples GP-5 (10-12')RE, Trip Blank and Equipment Blank; trichlorofluoromethane (31%RSD) and acetone (31.5%RSD) during the initial calibration associated with the analysis of sample GP-15 (8-12'); chloroethane (41.2%D), acetone (25.7%D), methylene chloride (35.3%D) and trans-1,2-dichloroethene (31.9%D) during the continuing calibration associated with the analyses of samples GP-1 (4-6'), GP-2 (4-6'), GP-3 (4-8'), GP-4 (4-6'), GP-7 (4-6'), GP-9 (4-6') and Dup#1; chloroethane (55.4%D), methylene chloride (63.2%D), and tetrachloroethene (26.1%D) during the continuing calibration associated with the analyses of samples GP-6 (4-6') and GP-8 (4-6'); methylene chloride (25.8%D) and bromoform (25.8%D) during the continuing calibration associated with the reanalysis of sample GP-5 (10-12'); carbon disulfide (32.8%D) and methylene chloride (26.3%D) during the continuing calibration associated with the analyses of samples Trip Blank and Equipment Blank; Dichlorodifluoromethane (32.2%D) and tetrachloroethane (32.1%D) during the continuing calibration associated with the analysis of sample GP-15 (8-12'); and chloroethane (41.6%D), trichlorofluoromethane (38.2%D) and methylene chloride (57.4%D) during the continuing calibration associated with the analyses of samples GP-10 (4-6') and GP-14 (4-8'). The associated results have been qualified as estimated (J/UJ) due to poor correlation in the calibration standards.

Surrogate recovery and internal standard results met laboratory specifications for project samples except toluene-d8 and 4-bromofluorobenzene exceeded specifications during the initial analysis of GP-5 (10-12'). It is recommended that the reanalysis of sample GP-5 (10-12') be reported as the representative results for that sample.

The percent recovery (%R) results for laboratory control sample (LCS) analysis were within laboratory specifications for the target analytes except trichlorofluoromethane exceeded specifications and tetrachloroethene was below specifications during the LCS associated with the reanalysis of sample GP-5 (10-12'); the %R for acetone, methyl tert-butyl ether, methylene chloride and trans-1,2-dichloroethene exceeded specifications during the LCS associated with the analyses of samples GP-1 (4-6'), GP-2 (4-6'), GP-3 (4-8'), GP-4 (4-6'), GP-7 (4-6'), GP-9 (4-6') and Dup#1; the %R for methylene chloride exceeded specifications during the LCS associated with the analyses of samples GP-6 (4-6') and GP-8 (4-6'); the %R for methylene chloride and trans-1,2-dichloroethene exceeded specifications and chloroethane was below specifications during the LCS associated with the analyses of samples GP-10 (4-6') and GP-14 (4-8'); and the %R for acetone exceeded specifications and trichlorofluoromethane was below specifications during the LCS associated with the analysis of sample GP-15 (8-12'). Associated detected results have been qualified as estimated (J) for those analytes that exceeded specifications, and associated results have been qualified as estimated (J/UJ) for those analytes that were below specifications, due to analytical inaccuracy.

A method blank was reported for each analytical batch. A trip blank and an equipment blank were also submitted to the laboratory for VOA. Target analytes and tentatively identified compounds (TICs) were not detected during the analysis of the trip or equipment blanks. Methylene chloride was detected during the analysis of the method blank associated with the analyses of project samples. 2- Hexanone was detected in a method blank associated with the analyses of samples GP-1 (4-6'), GP-2 (4-6'), GP-3 (4-8'), GP-4 (4-6'), GP-7 (4-6'), GP-9 (4-6') and Dup#1. Action levels were developed by multiplying the highest concentration observed among the associated blanks by a factor of 5 or a factor of 10 for common laboratory contaminants, such as methylene chloride. Results in the associated samples reported below the action level have been have been qualified as non-detect (U) and the detection limit has been elevated to the amount detected in the sample.

Criteria for accuracy and precision were met for target analytes during the matrix spike (MS) and MS duplicate (MSD) analysis of sample GP-2 (4-6') except the %RSD between the MS and MSD exceeded specifications for chloroethene during the MS/MSD analysis. Chloroethene results have been qualified as estimated (UJ) in the associated sample due to analytical imprecision.

A field duplicate evaluation was performed on samples Dup #1 (blind field duplicate) and GP-1 (4-6'). Refer to Attachment C-3 for the duplicate evaluation. Acetone results have been qualified as estimated (J/UJ) in the associated samples due to analytical imprecision.

SVOA by SW-846 8270C

Project samples were analyzed within 12 hours of the performance check standard, DFTPP. Percent relative abundance of ions met the criteria specified in Table 3 of the EPA SW-846 Method 8270C. Laboratory specifications were met during the initial and continuing calibrations associated with the project samples. In addition the average RRF was greater than or equal to 0.05 for target analytes during the initial and continuing calibrations. The %RSD between RRF was less than or equal to 30% during the initial calibration, and the %D between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes except benzaldehyde (36.49%RSD) and 2,4-dinitrophenol (44.32%RSD) during the initial calibration associated with the analyses of samples GP-1 (4-6'), GP-2 (4-6'), GP-3 (4-8'), GP-4 (4-6'), GP-5 (10-12'), GP-6 (4-6'), GP-7 (4-6'), GP-8 (4-6'), GP-9 (4-6'), Dup#1, Trip Blank and Equipment Blank; benzaldehyde (38.53%RSD) and 2,4-dinitrophenol (40.21%RSD) during the initial calibration associated with the analyses of samples GP-10 (4-6'), GP-14 (4-8') and GP-15 (8-12'); 2,2-oxibis(1-chloropropane) (34.9%D), n-nitroso-di-n-propylamine (32.2%D), 2,4-dinitrophenol (54.8%D), 4-nitrophenol (73.3%D), 4,6-dinitro-2-methylphenol (28.1%D), benzo(b)fluoranthene (28.3%D) and benzo(k)fluoranthene (36.1%D) during the continuing calibration associated with the analyses of samples GP-1 (4-6'), GP-2 (4-6'), GP-3 (4-8'), GP-4 (4-6'), GP-5 (10-12'), GP-6 (4-6'), GP-7 (4-6'), GP-8 (4-6'), GP-9 (4-6') and Dup#1, as well as the diluted analysis of GP-6 (4-6'); benzaldehyde (32.4%D), 3-nitroanaline (45.4%D), 2,4-dinitrophenol (28.7%D), carbazole (27.8%D), 3,3-dichlorobenzidine (39.8%D), indeno(1,2,3-cd)pyrene (51.8%D), dibenz(a,h)anthracene (34.6%D) and benzo(g,h,i)perylene (40.5%D) during the continuing calibration associated with the analyses of samples GP-10 (4-6'), GP-14 (4-8') and GP-15 (8-12'); and 2,2-oxybis(1-chloropropane) (31.2%D), n-nitroso-di-n-propylamine (27.7%D), caprolactam (66.2%D), 2,4-dinitrophenol (30.4%D), 4-nitrophenol (75%D), indeno(1,2,3-cd)pyrene (28%D) and benzo(g,h,i)perylene (28.5%D) during the continuing calibration associated with the analysis of sample Equipment Blank. The associated results have been qualified as estimated (J/UJ) due to poor correlation in the calibration standards.

Surrogate recoveries and internal standard results met laboratory specifications for project samples except the internal standard perylene-d12 was below laboratory specifications during the initial and reanalysis of GP-1 (4-6'), GP-2 (4-6'), GP-4 (4-6'), GP-6 (4-6'), GP-8 (4-6'), Dup#1, GP-10 (4-6'), GP-14 (4-8') and GP-15 (8-12'). The associated results have been qualified as estimated (J/UJ) due to low machine sensitivity.

The percent recovery results for LCS analyses were within laboratory specifications for target analytes except 4-nitrophenol was below specifications during the LCS associated with the analysis of GP-1 (4-6'), GP-2 (4-6'), GP-3 (4-8'), GP-4 (4-6'), GP-5 (10-12'), GP-6 (4-6'), GP-7 (4-6'), GP-8 (4-6'), GP-9 (4-6') and Dup#1; the %R for 3-nitoanaline, 4-nitroanaline, carbazole and 3,3-dichlorobenzidine exceeded specifications and benzo(k)fluoranthene was below specifications during the LCS associated with the analyses of samples GP-10 (4-6'), GP-14 (4-8') and GP-15 (8-12'); and the %R for caprolactam

was below specifications during the LCS associated with the analysis of sample Equipment Blank. The associated detected 3-nitoanaline, 4-nitroanaline, carbazole and 3,3-dichlorobenzidine results have been qualified as estimated (J) and the associated benzo(k)fluoranthene and caprolactam results have been qualified as estimated (J/UJ) due to analytical inaccuracy.

A method blank was reported for each analytical batch. An equipment blank was also submitted to the laboratory for SVOA. Target analytes were not detected during the analysis of the method or equipment blanks. Several TICs were detected during the anlalysis of the method blanks and equipment blank associated with the analyses of the project samples with retention times ranging from 2.58 to 17.82. Action levels were developed by multiplying the highest concentration observed among the associated blanks by a factor of 5. Results in the associated sample reported below the action level have been have been qualified as non-detect (U) and the detection limit has been elevated to the amount detected in the sample.

Criteria for accuracy and precision were met for target analytes during the MS and MSD analysis of sample GP-2 (4-6') except the %R for hexachloroethane, 2-nitrophenol, 4-nitrophenol, 2,4-dinitrotoluene and indeno(1,2,3-cd)pyrene were below specifications during the MS and MSD analysis. The associated results have been qualified as estimated (J/UJ) in the associated sample due to analytical imprecision.

A field duplicate evaluation was performed on samples Dup #1 (blind field duplicate) and GP-1 (4-6'). Refer to Attachment C-3 for the duplicate evaluation. Naphthalene, acenaphthylene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, carbazole, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and dibenz(a,h)anthracene results have been qualified as estimated (J/UJ) in the associated samples due to analytical imprecision.

Pesticide Analysis by SW-846 8081

Laboratory specifications were met during the initial and continuing calibrations. The %RSD between RRF was less than or equal to 30% during the initial calibration, and the %D between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes except 4,4'-DDT (34.19%RSD) during the initial calibration associated with the analyses of samples GP-1 (4-6'), GP-2 (4-6'), GP-3 (4-8'), GP-4 (4-6'), GP-5 (10-12'), GP-6 (4-6'), GP-7 (4-6'), GP-8 (4-6'), GP-9 (4-6'), Dup#1, GP-10 (4-6'), GP-14 (4-8'), GP-15 (8-12') and Equipment Blank.

Surrogate recoveries met laboratory specifications for project samples except tetrachloro-m-xylene was below specifications during the analyses of samples GP-5 (10-12') and GP-15 (8-12'). Qualification was not warranted as the remaining surrogate was within specifications.

The percent recovery results for LCS analysis were within laboratory specifications for target analytes.

A method blank was reported for each analytical batch. Target compounds were not detected during the analysis of the method blank.

Criteria for accuracy and precision were met for target analytes during the MS and MSD analysis of sample GP-2 (4-6').

A field duplicate evaluation was performed on samples Dup #1 (blind field duplicate) and GP-1 (4-6'). Criteria for precision was achieved as target analytes were not detected in the associated samples.

PCB Analysis by SW-846 8082

Laboratory specifications were met during the initial and continuing calibrations. The %RSD between RRF was less than or equal to 30% during the initial calibration, and the %D between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes.

Surrogate recoveries met laboratory specifications for project samples.

The percent recovery results for LCS analysis were within laboratory specifications for the target analyte aroclor 1016 and aroclor 1260.

A method blank was reported for each analytical batch. An equipment blank was also submitted to the laboratory for PCB analysis. Target compounds were not detected during the analysis of the method blank or the equipment blank.

Criteria for accuracy and precision were met during the MS/MSD analysis of sample GP-2 (4-6') for target analytes aroclor 1016 and aroclor 1260 except the %R for aroclor 1016 was below specifications during the MS and MSD analysis. The associated results have been qualified as estimated (UJ) in the associated sample due to analytical imprecision.

A field duplicate evaluation was performed on samples Dup #1 (blind field duplicate) and GP-1 (4-6'). Criteria for precision was achieved as target analytes were not detected in the associated samples.

Metals and Mercury Analysis by SW-846 6010B and 7471A

The inductively coupled plasma (ICP) instrument was calibrated according to the SW-846 Methods 6010B and 7471A. All samples were bracketed by ICV/CCV with recoveries that were within 80-120% for mercury and 90-110% of the true value for all other target metals.

Recovery of the ICP interference check sample fell within 80-120% of the true standard concentration for all target analytes.

Laboratory specifications (80-120%R) were met during the LCS analysis for target metals.

The %R of the contract required detection limit (CRDL) standard fell within 75-125% of the true value for target metals except the %R for mercury, iron and sodium were below 75% during the CRDL standard associated with the analyses of samples GP-1 (4-6'), GP-2 (4-6'), GP-3 (4-8'), GP-4 (4-6'), GP-5 (10-12'), GP-6 (4-6'), GP-7 (4-6'), GP-8 (4-6'), GP-9 (4-6') and Dup#1; the %R for iron was below 75% during the CRDL standard associated with the analysis of sample Equipment Blank; and the %R for potassium and silver exceeded 125% during the CRDL standard associated with the analyses of samples GP-10 (4-6'), GP-14 (4-8') and GP-15 (8-12'). Associated results for mercury, iron and sodium have been qualified as estimated (J/UJ) and associated detected results for potassium and silver have been qualified as estimated (J) due to analytical inaccuracy.

A method blank was reported for each batch, and a calibration blank was analyzed at the beginning, after every 10 samples, and at the end of each batch. An equipment blank was also submitted to the laboratory for metals analysis. Refer to Attachments C-1 and C-4 for an evaluation of blank contamination. Action levels were developed by multiplying the highest concentration observed among all associated blanks by a factor of 5. Samples with results reported below the action level have been have been qualified as non-detect (U) and the detection limit has been elevated to the amount detected in the sample.

Criteria for accuracy and precision were met during the MS/MSD analysis of sample GP-2 (4-6') for target metals except the %R for copper, lead, mercury and zinc exceeded specifications and potassium and silver were below specifications during the MS and MSD analysis. The associated results have been qualified as estimated (J/UJ) in the associated sample due to analytical imprecision.

A laboratory duplicate evaluation was performed on sample GP-2 (4-6'). Refer to Attachment C-2 for the duplicate evaluation. Antimony, arsenic, cobalt and silver results have been qualified as estimated (J/UJ) in the associated sample due to analytical imprecision.

A field duplicate evaluation was performed on samples Dup#1 (blind field duplicate) and GP-1 (4-6'). Refer to Attachment C-3 for the duplicate evaluation. Antimony, arsenic, lead, mercury, sodium and zinc results have been qualified as estimated (J/UJ) in the associated samples due to analytical imprecision.

Summary

Overall, data quality objectives for the Metroplex site at 312 Broadway were met, as there were no data deficiencies that would indicate the need for re-sampling. The analytical results are usable with the qualification of results as described in this DUSR. No analytical data has been rejected.

Megan Drosky
Environmental Scientist

C.T. MALE ASSOCIATES, P.C.

SUBJECT: Data Usability Summary Report (DUSR)
Metroplex – 312 Broadway Groundwater
Chemtech SDG Nos.: X3264, X3317 and X3358
C.T. Male Project No.: 05.5550

DATE: July 28, 2006

Between June 13 and 15, 2006, C.T. Male Associates, P.C. (C. T. Male) collected fourteen (14) groundwater samples from the Metroplex site at 312 Broadway. The samples were submitted, along with an equipment blank and trip blanks to Chemtech Laboratories (Chemtech) in Mountainside, NJ for the following analyses:

SDG #	Parameter	Sample Date	VOC, SW-846 8260B	SVOC , SW-846 8270C	Pesticides, SW-846 8081A	PCBs, SW-846 8082	TAL Metals, SW-846 6010 and 7470
	Sample Ids						
X3264	CTM-1	6/13/2006	1	1	1	1	1
X3264	CTM-2	6/13/2006	1	1	0	1	1
X3317	CTM-3	6/14/2006	1	1	1	1	1
X3317	CTM-4	6/14/2006	1	1	1	1	1
X3317	CTM-5	6/14/2006	1	1	1	1	1
X3317	CTM-6	6/14/2006	1	1	1	1	1
X3317	CTM-7	6/14/2006	1	1	1	1	1
X3358	CTM-8	6/15/2006	1	1	1	1	1
X3358	CTM-9	6/15/2006	1	1	1	1	1
X3358	CTM-10	6/15/2006	1	1	1	1	1
X3358	CTM-14	6/15/2006	1	1	1	1	1
X3358	CTM-15	6/15/2006	1	1	1	1	1
X3358	CTM-2	6/15/2006	0	1	1	1	0
X3358	GW-Duplicate[1]	6/15/2006	1	1	1	1	1
X3317	Equipment Blank	6/14/2006	1	1	1	1	1
X3264	Trip Blank	-	1	0	0	0	0
X3317	Trip Blank	-	1	0	0	0	0
X3358	Trip Blank	-	1	0	0	0	0
Total Samples			**17**	**15**	**14**	**15**	**14**

VOC – Volatile organic compounds
SVOC – Semi-volatile organic compounds
PCBs – Polychlorinated Biphenyls

C. T. Male evaluated the data reported by the laboratory to determine usability per Appendix 2B of the *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC, December 2002), with guidance from the *USEPA CLP National Functional Guidelines for Organic and Inorganic Data Review* (October 1999 and 2004, respectively). The following criteria were reviewed:

- Completeness of data package as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables;

[1] Field duplicate of CTM-8.

- Holding time compliance for chemical analysis;
- Protocol required limits and specification compliance for quality control (QC) data (e.g., instrument tuning, calibration standards, blank results, spike results, duplicate results, etc);
- Contract compliance for analytical protocols;
- Omissions and transcription errors; and
- Data qualification.

Data Completeness

Documentation required by the project was included in the data package. There were no discrepancies found between the raw data and summary forms. The laboratory Case Narratives (Attachment A) identified deviations from laboratory analytical specifications. C.T. Male reviewed these QC results to determine if sample results should be qualified based on the criteria provided in Appendix 2B of the *Technical Guidance for Site Investigation and Remediation*. QC exceedences and data qualification recommendations are presented in the Data Evaluation Checklists (Attachment B). Qualified sample results are presented in the laboratory summary forms, which are located in Attachment C.

QC exceedences and data qualification recommendations are summarized below.

It is recommended that organic and inorganic sample results which were reported by the laboratory as exceeding the calibration range (E-flagged and OR-flagged, respectively), be reported from the analysis at the lowest dilution with results within calibration range.

Sample Condition upon Receipt and Holding Times

Chemtech received all the samples listed on the chain of custody (COC) records intact and in good condition except there was an insufficient amount of sample CTM-2, collected on June 13, 2006, to perform pesticide analysis, due to broken sample containers. CTM-2 was recollected on June 15, 2006 for the analyses of SVOCs, pesticides and PCBs. The temperature of samples were within laboratory specification limits of 2 to 6°C upon receipt.

Project samples were prepared and analyzed within EPA-established holding times.

Volatile Organic Analysis (VOA) by SW-846 8260B

All samples were analyzed within 12 hours of the performance check standard, BFB. Percent relative abundance of all ions met the criteria specified in Table 4 of the EPA SW-846 Method 8260B. Laboratory specifications were met during the initial and continuing calibrations associated with the project samples. In addition the average relative response factor (RRF) was greater than or equal to 0.05 for target analytes during the initial and continuing calibrations. The percent relative standard deviation (%RSD) between RRF was less than or equal to 30% during the initial calibration, and the percent difference (%D) between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes except the following:

- SDG X3264 – Chloromethane (41.2%D), chloroethane (69.4%D), trichlorofluoromethane (29.1%D), 1,1,2-trichlorotrifluoroethane (26.3%D), methyl acetate (30.8%D), methylene chloride (31.2%D), 2-butanone (42.8%D), methylcyclohexane (36.6%D), 4-methyl-2-pentanone (46.7%D), trans-1,3-dichloropropene (44.3%D), 2-hexanone (53.6%D), 1,2-dibromoethane

(59.9%D), tetrachloroethene (38.4%D) and 1,2,4-trichlorobenzene (43.5%D) during the continuing calibration associated with the analyses of the samples in this SDG.

- SDG X3317 – Chloroethane (55.6%D), trichlorofluoromethane (32.5%D), methyl acetate (63%D), cyclohexane (35.9%D), 2-butanone (52.1%D), carbon tetrachloride (32.9%D), methylcyclohexane (25.7%D), 1,2-dichloroethane (35.1%D), bromodichloromethane (30.6%D), 4-methyl-2-pentanone (50.5%D), trans-1,3-dichloropropene (38.7%D), 2-hexanone (55.7%D), 1,2-dibromoethane (36.5%D), tetrachloroethene (36.8%D) and 1,2,4-trichlorobenzene (36.8%D) during the continuing calibration associated with the analyses of samples CTM-3, CTM-4, CTM-5, CTM-6 and CTM-7; Bromomethane (30.9%D), chloroethane (55%D), trichlorofluoromethane (31.4%D), MTBE (25.7%D), methyl acetate (66.6%D), cyclohexane (30.3%D), 2-butanone (46.2%D), 1,2-dichloroethane (29.5%D), 4-methyl-2-pentanone (50.8%D), trans-1,3-dichloropropene (33%D), 2-hexanone (55.7%D), 1,2-dibromoethane (36.9%D), tetrachloroethene (37.5%D) and 1,2,4-trichlorobenzene (43.8%D) during the continuing calibration associated with the analyses of samples Equipment Blank and Trip Blank.
- SDG X3358 – Dichlorodifluoromethane (29.7%D), trichlorofluoromethane (46.4%D), acetone (40%D), methyl acetate (33.3%D), cyclohexane (60.3%D), 2-butanone (71.1%D), methylcyclohexane (25.8%D), 1,2-dichloroethane (26.2%D), bromodichloromethane (34.9%D) and tetrachloroethene (31.6%D) during the continuing calibration associated with the analyses of samples CTM-8, CTM-9, CTM-15, GW-Duplicate and Trip Blank; Chloromethane (27.7%D), vinyl chloride (29.2%D), bromomethane (26.3%D), chloroethane (58.7%D), 1,1,2-trichlorotrifluoroethane (34.4%D), acetone (47%D), carbon disulfide (53.2%D), methyl acetate (44.5%D), cyclohexane (36.8%D), 2-butanone (63.5%D), benzene (26.1%D), bromodichloromethane (32.2%D), 4-methyl-2-pentanone (32%D) and tetrachloroethene (46.8%D) during the continuing calibration associated with the analyses of samples CTM-10 and CTM-14.

The associated results have been qualified as estimated (J/UJ) due to poor correlation in the calibration standards.

Surrogate recovery and internal standard results met laboratory specifications for project samples.

The percent recovery (%R) results for laboratory control sample (LCS) analysis were within laboratory specifications for the target analytes except the following:

- SDG X3264 – Chloroethane, trichlorofluoromethane, 1,1,2-trichlorotrifluoroethane, methylene chloride, trans-1,3-dichloropropene, cis-1,3-dichloropropene and 1,2-dibromoethane exceeded specifications and 2-butanone, 4-methyl-2-pentanone, 2-hexanone and 1,2,4-trichlorobenzene were below specifications during the LCS associated with the analyses of the samples in this SDG.
- SDG X3317 – Chloromethane, 1,1-dichloroethene, carbon disulfide, trans-1,2-dichloroethene, 2-butanone, cis-1,2-dichloroethene, 4-methyl-2-pentanone, 2-hexanone, tetrachloroethene, 1,1,2,2-tetrachloroethane, 1,4-dichlorobenzene, 1,2-dibromo-3-chloropropane and 1,2,4-trichlorobenzene were below specifications during the LCS associated with the analyses of samples CTM-3, CTM-4, CTM-5, CTM-6 and CTM-7; Dichlorodifluoromethane, vinyl chloride, bromomethane, chloroethane, trichlorofluoromethane, acetone, methyl acetate, carbon tetrachloride, 1,2-dichloroethane, bromodichloromethane, trans-1,3-dichloropropene, cis-1,3-dichloropropene, 1,1,2-trichloroethane, dibromochloromethane and bromomethane exceeded specifications and 2-butanone, 4-methyl-2-pentanone, 2-hexanone, 1,2-dibromoethane, 1,2-dibromo-3-chloropropane

and 1,2,4-trichlorobenzene were below specifications during the LCS associated with the analyses of samples Equipment Blank and Trip Blank.

- SDG X3358 – Dichlorodifluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane, trichlorofluoromethane, acetone, cyclohexane and 2-butanone exceeded specifications and bromodichloromethane was below specifications during the LCS associated with the analyses of samples CTM-8, CTM-9, CTM-15, GW-Duplicate and Trip Blank; Chloroethane, vinyl chloride, bromomethane, chloroethane, 1,1,2-trichlorotrifluoroethane, acetone, cyclohexane, 2-butanone and 4-methyl-2-pentanone exceeded specifications during the LCS associated with the analyses of samples CTM-10 and CTM-14.

Associated detected results for those analytes which exceeded specifications for LCS %R have been qualified as estimated (J) and associated results for those analytes which were below specifications for LCS %R have been qualified as estimated (J/UJ) due to analytical inaccuracy.

A method blank was reported for each analytical batch. Trip blanks were also submitted to the laboratory for VOA with the samples in each SDG and an equipment blank was submitted to the laboratory for VOA with the samples in SDG X3317. Tentatively identified compounds (TICs) were not detected during the analyses of the method, trip or equipment blanks. Target analytes were not detected during the analyses of the method, trip or equipment blanks except acetone was detected during the analysis of the method blank associated with SDG X3317. An action level was developed by multiplying the highest concentration observed among the associated blank by a factor of 10 for this common laboratory blank contaminate. Results in the associated samples reported below the action level have been have been qualified as non-detect (U) and the detection limit has been elevated to the amount detected in the sample.

Criteria for accuracy and precision were met during the matrix spike (MS) and MS duplicate (MSD) analysis of sample CTM-4 for target analytes except the %R during the MS and MSD was below specifications for trichlorofluoromethane, cyclohexane, 1,2-dichloroethane, bromodichloroethane, 4-methyl-2-pentanone, 1,1,2-trichloroethane and 1,2,4-trichlorobenzene. The associated results have been qualified as estimated (J/UJ) due to analytical inaccuracy.

A field duplicate evaluation was performed on samples GW-Duplicate (blind field duplicate) and CTM-8. Criteria for precision was achieved as target analytes were not detected in the associated samples.

SVOA by SW-846 8270C

Project samples were analyzed within 12 hours of the performance check standard, DFTPP. Percent relative abundance of ions met the criteria specified in Table 3 of the EPA SW-846 Method 8270C. Laboratory specifications were met during the initial and continuing calibrations associated with the project samples. In addition the average RRF was greater than or equal to 0.05 for target analytes during the initial and continuing calibrations. The %RSD between RRF was less than or equal to 30% during the initial calibration, and the %D between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes except the following:

- SDG X3264 – 2,4-Dinitrophenol (43.02%RSD) and 4,6-dinitro-2-methylphenol (26.85%RSD) during the initial calibration associated with the analysis of the samples in this SDG. Benzo(a)anthracene (46.3%D) and indeno(1,2,3-cd)pyrene (33%D) during the continuing calibration associated with the analyses of the samples in this SDG.

- SDG X3317 – 2,4-Dinitrophenol (34.39%RSD) during the initial calibration associated with the analyses of the samples in this SDG. 2,4-Dinitrophenol (38.7%D) during the continuing calibration associated with the analyses of samples CTM-3, CTM-4, CTM-5 and CTM-7.
- SDG X3358 – 2,4-Dinitrophenol (34.39%RSD) during the initial calibration associated with the analyses of the samples in this SDG.

The associated results have been qualified as estimated (J/UJ) due to poor correlation in the calibration standards.

Surrogate recoveries and internal standard results met laboratory specifications for project samples.

The %R results for LCS analyses were within laboratory specifications for target analytes except the following:

- SDG X3264 – Phenol and carbazole exceeded specifications during the LCS associated with the analysis of the samples in this SDG.
- SDG X3317 – Caprolactam was below specifications during the LCS associated with the analysis of the samples in this SDG.
- SDG X3358 – Caprolactam was below specifications during the LCS associated with the analysis of the samples in this SDG.

Associated detected results for those analytes which exceeded specifications for LCS %R have been qualified as estimated (J) and associated results for those analytes which were below specifications for LCS %R have been qualified as estimated (J/UJ) due to analytical inaccuracy.

A method blank was reported for each analytical batch. An equipment blank was also submitted to the laboratory for SVOA with the samples in SDG X3317. Target analytes were not detected during the analyses of the method or equipment blanks. Several TICs were detected during the anlalyses of the method blanks and equipment blank associated with the analysis of the project samples. Action levels were developed by multiplying the highest concentration observed among the associated blank by a factor of 5. Results in the associated samples reported below the action level have been have been qualified as non-detect (U) and the detection limit has been elevated to the amount detected in the sample.

Criteria for accuracy and precision were met for target analytes during the MS and MSD analysis of sample CTM-4 except the %R during the MS and MSD was below specifications for phenol and caprolactam. The associated results have been qualified as estimated (UJ) due to analytical inaccuracy.

A field duplicate evaluation was performed on samples GW-Duplicate (blind field duplicate) and CTM-8. Refer to Attachment B-2 for the duplicate evaluation. Di-n-butylphthalate and benzo(k)fluoranthene results have been qualified as estimated (J/UJ) due to analytical imprecision.

Pesticide Analysis by SW-846 8081

Laboratory specifications were met during the initial and continuing calibrations. The %RSD between RRF was less than or equal to 30% during the initial calibration, and the %D between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes.

Surrogate recoveries met laboratory specifications for project samples except the %R exceeded specifications for tetrachloro-m-xylene during the analysis of sample CTM-15. Associated detected results have been qualified as estimated (J) due to inteference.

The %D between methoxychlor results from the first and second columns during the initial and diluted analysis of sample CTM-15 exceeded 25%D. High surrogate recoveries indicate interference was detected during the analysis. The associated methoxychlor results have been qualified as tentatively identified (N) due to matrix interference.

The %R results for LCS analysis were within laboratory specifications for target analytes.

A method blank was reported for each analytical batch. An equipment blank was also submitted to the laboratory for pesticide analysis with the samples in SDG X3317. Target compounds were not detected during the analysis of the method blanks or the equipment blank.

Criteria for accuracy and precision were met for target analytes during the MS and MSD analysis of sample CTM-4.

A field duplicate evaluation was performed on samples GW-Duplicate (blind field duplicate) and CTM-8. Criteria for precision was achieved as target analytes were not detected in the associated samples.

PCB Analysis by SW-846 8082

Laboratory specifications were met during the initial and continuing calibrations. The %RSD between RRF was less than or equal to 30% during the initial calibration, and the %D between the initial calibration average RRF and continuing calibration RRF was less than or equal to 25% for target analytes.

Surrogate recoveries met laboratory specifications for project samples except decachlorobiphenyl exceeded specifications during the analysis of CTM-14 and tetrachloro-m-xylene was below specifications during the analysis of CTM-15. Qualification was not warranted as the remaining surrogates were within specifications.

The %R results for LCS analysis were within laboratory specifications for the target analyte aroclor 1016 and aroclor 1260.

A method blank was reported for each analytical batch. An equipment blank was also submitted to the laboratory for PCB analysis with the samples in SDG X3317. Target compounds were not detected during the analysis of the method blank or the equipment blank.

Criteria for accuracy and precision were met during the MS/MSD analysis of sample CTM-4 for target analytes aroclor 1016 and aroclor 1260.

A field duplicate evaluation was performed on samples GW-Duplicate (blind field duplicate) and CTM-8. Criteria for precision was achieved as target analytes were not detected in the associated samples.

Metals and Mercury Analysis by SW-846 6010B and 7470A

The inductively coupled plasma (ICP) instrument was calibrated according to the SW-846 Methods 6010B and 7470A. All samples were bracketed by ICV/CCV with recoveries that were within 80-120% for mercury and 90-110% of the true value for all other target metals.

Recovery of the ICP interference check sample fell within 80-120% of the true standard concentration for all target analytes.

Laboratory specifications (80-120%R) were met during the LCS analysis for target metals.

The %R of the contract required detection limit (CRDL) standard fell within 70-130% of the true value for target metals except potassium and mercury were below 70% during the analysis of the CRDL standard associated with the analyses of the samples in SDGs X3317 and X3358. Associated results for potassium and mercury have been qualified as estimated (J/UJ) due to analytical inaccuracy.

A method blank was reported for each batch, and a calibration blank was analyzed at the beginning, after every 10 samples, and at the end of each batch. An equipment blank was also submitted to the laboratory for metals analysis with the samples in SDG X3317. Target metals were not detected in the associated blanks except the follwing:

- SDG X3264 – Beryllium and sodium were detected above the detection limit during the analysis of the blanks associated with this SDG.
- SDG X3317 – Aluminum, barium, beryllium, calcium, chromium, cobalt, iron, magnesium, silver, sodium, vanadium and zinc were detected above the detection limit during the analysis of the blanks associated with this SDG.
- SDG X3358 – Aluminum, beryllium, calcium, chromium, cobalt, magnesium, silver, sodium and vanadium were detected above the detection limit during the analysis of the blanks associated with this SDG.

Action levels were developed by multiplying the highest concentration observed among all associated blanks within the SDG by a factor of 5. Samples with results reported below the action level have been have been qualified as non-detect (U) and the detection limit has been elevated to the amount detected in the sample.

Criteria for accuracy and precision were met during the MS/MSD analysis of samples CTM-1 (mercury only) and CTM-4 for target metals except the %R during the MS, MSD and post digestion spike for CTM-4 exceeded specifications for potassium. The associated results have been qualified as estimated (J) due to analytical inaccuracy.

Significant chemical and matrix interference were not observed during the serial dilution analysis of sample CTM-1 (mercury only) and CTM-4. The %D between initial and serially diluted results was less than 10% for those target metals with results greater than fifty times the detection limit except potassium and sodium exceeded 10% during the serial dilution analysis of CTM-4. Potassium and sodium results have been qualified as estimated (J) due to chemical and matrix interference.

A laboratory duplicate evaluation was performed on samples CTM-1 (mercury only) and CTM-4. Refer to Attachment B-1 for the duplicate evaluation of CTM-4. Criteria for precision was achieved for

detected results in sample CTM-4 except results for mercury have been qualified as estimated (J) due to analytical imprecision. Results for mercury have been qualified as estimated (UJ) in sample CTM-1 due to analytical imprecision.

A field duplicate evaluation was performed on samples GW-Duplicate (blind field duplicate) and CTM-8. Refer to Attachment B-2 for the duplicate evaluation. Lead and mercury results have been qualified as estimated (J) in the associated samples due to analytical imprecision.

Summary

Overall, data quality objectives for the Metroplex site at 312 Broadway were met, as there were no data deficiencies that would indicate the need for re-sampling. The analytical results are usable with the qualification of results as described in this DUSR. No analytical data has been rejected.

Megan Drosky
Environmental Scientist