The electronic version of this file/report should have the file name:

Type of document . Site Number . Year-Month . File *Year-Year* or Report name . pdf

_____ . _____ - ____ . File _____ .pdf

example: *letter . Year-Month . File Year-Year . pdf*

report . VCP . V00195 . 2015-07-02 CM_COMPETION_REPORT_AECOM .pdf

example: *report . Site Number . Year-Month . Report Name . pdf*

Project Site numbers will be proceeded by the following:

Municipal Brownfields - B
Superfund - HW
Spills - SP
ERP - E
VCP - V
BCP - C

National Fuel

July 2, 2015

Mr. David Szymanski
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, NY 14203-2915

RE: National Fuel Gas
Corrective Measures Completion Report
Mineral Springs Works Former MGP Site

Dear Mr. Szymanski,

National fuel Gas is providing the Corrective Measures Completion Report prepared by AECOM for the Mineral Springs Road Former Manufactured Gas Plant (MGP) Site Fence Replacement Area, summarizing the work completed in the southwest corner of the National Fuel property. This report supplements the Corrective Measures Completion Report completed by GEI Consultants for the residential parcels along Calais Street, previously submitted to NYSDEC.

If you have any questions the Corrective Measures Completion Report, please don't hesitate to call me at 716-667-5559.

Sincerely,

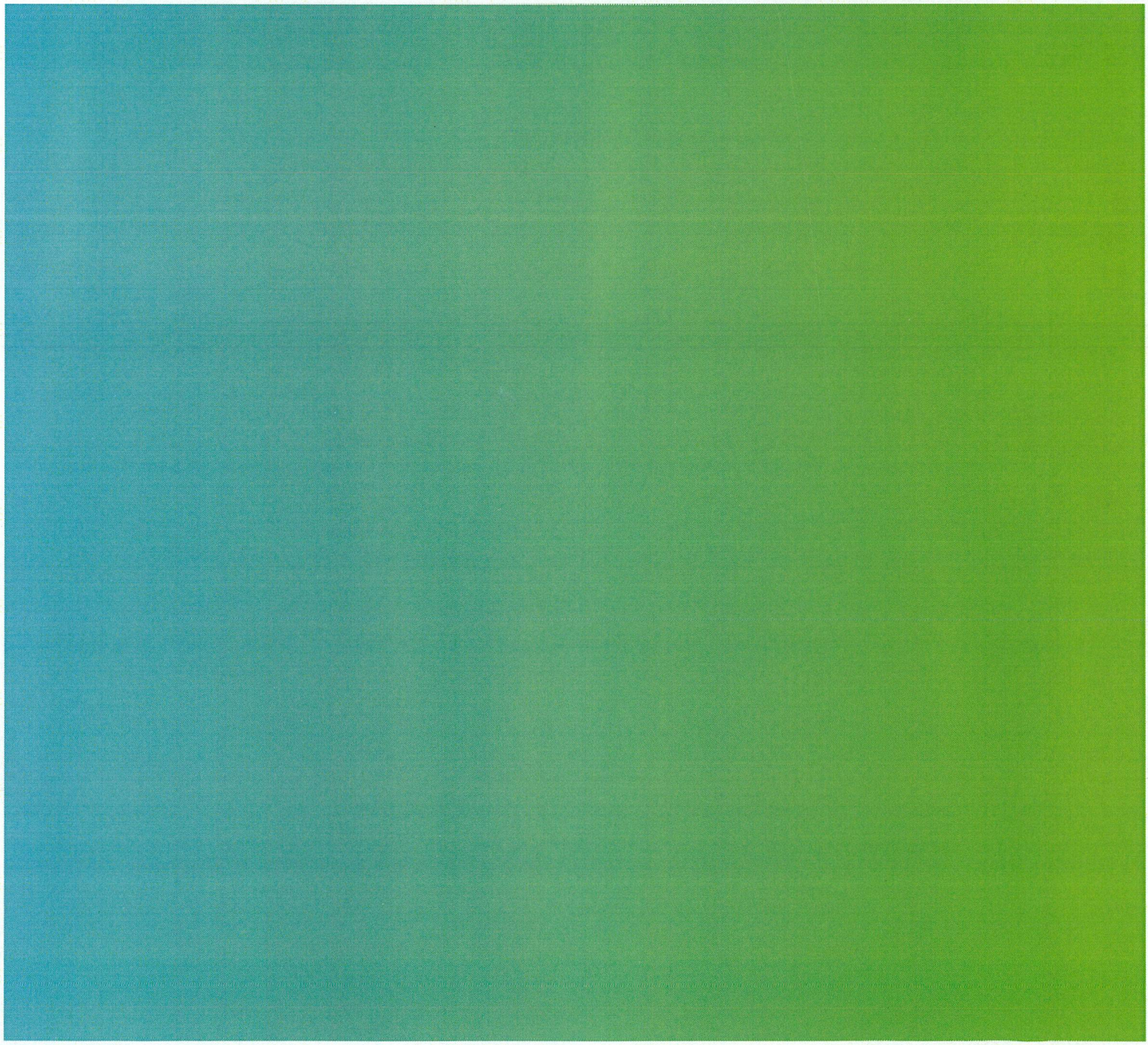
Brad Walker
Senior Environmental Analyst

AECOM Environment

Prepared for:
National Fuel Gas
Buffalo, NY

Prepared by:
AECOM
Chelmsford, MA
60250836
October 10, 2014

Corrective Measures Completion Report
Mineral Springs Road Former MGP



AECOM Environment

Prepared for:
National Fuel Gas
Buffalo, NY

Prepared by:
AECOM
Chelmsford, MA
60250836
October 10, 2014

Corrective Measures Completion Report Mineral Springs Road Former MGP

Prepared By Laura Townsend

Reviewed By Thomas P. Clark

Contents

List of Tables

List of Figures

List of Appendices

List of Acronyms

$\mu g/m^3$	micrograms per cubic meter
AECOM	AECOM Technical Services, Inc.
bgs	below ground surface
CAMP	Community Air Monitoring Plan
CCR	Construction Completion Report
CFR	Code of Federal Regulations
City Fence	City Fence, Inc.
CMWP	Corrective Measures Work Plan
DER-10	NYSDEC's Division of Environmental Remediation Technical Guide 10 - Technical Guidance for Site Investigation and Remediation
DNAPL	dense non-aqueous phase liquid
DPW	Department of Public Works
DUSR	Data Usability Summary Report
ELAP	Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency
FER	Final Engineering Report
HASP	Health and Safety Plan
LF	linear feet
MGP	Manufactured Gas Plant
N&C	Nussbaumer & Clarke, Inc.
National Fuel	National Fuel Gas Distribution Corporation
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation and Maintenance
OP-TECH	OP-TECH Environmental Services, Inc.
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PID	photoionization detector
PM-10	particulates with a diameter of 10 micrometers or less
PPE	personal protective equipment
ppm	parts per million
SCO	soil cleanup objective
SF	square feet
SVOC	semi-volatile organic compound
TAL	target analyte list
TCL	target compound list
TestAmerica	TestAmerica Laboratories, Inc.
VCA	Voluntary Cleanup Agreement
VOC	volatile organic compound

1.0 Introduction

AECOM Technical Services, Inc. (AECOM) has prepared this Corrective Measures Completion Report on behalf of National Fuel Gas Distribution Corporation (National Fuel) for the Mineral Springs Road Former Manufactured Gas Plant (MGP) Site Fence Replacement Area (Site). This document summarizes the corrective measures implemented to address suspected purifier box waste materials observed along the western property boundary during a perimeter fence replacement project in June 2013.

1.1 Background

The MGP was constructed in the early 1920's and operated until the 1960's. Coal and oil gasification wastes, specifically coal tar hydrocarbons and blue green-stained purifier residuals, were generated during plant operation. AECOM conducted environmental site investigations between 1990 and 1998. AECOM identified impacts from MGP residues to soil and groundwater, including organic constituents, dense non-aqueous phase liquids (DNAPL), and cyanide. National Fuel has conducted remedial activities since 1997 including the following:

- Excavation of contaminated soils;
- Installation of multiple engineered caps;
- Installation of a DNAPL recovery system; and
- Implementation of institutional controls.

A remedial action to address MGP residues in soil was completed in 2001. The locations of these remedial actions are shown on the Facility Site Plan (Figure 1).

In June 2013, as part of security upgrades at the facility, new perimeter chain-link fencing was installed along the western site boundary and southwestern corner. National Fuel hired an environmental contractor to drill fence post holes between June 24 and 28, 2013. On June 26, 2013 suspected purifier box wastes were encountered while advancing four of these post holes near the southwestern corner of the Site, in an area known to have purifier residuals remaining adjacent to the buried National Grid high voltage cable. National Fuel immediately notified New York State Department of Environmental Conservation (NYSDEC) of the materials encountered. Suspect materials were placed in a single new 55-gallon drum for subsequent sampling and disposal.

On July 19, 2013 and July 25, 2013, NYSDEC notified National Fuel of two citizen's complaints regarding the presence of blue green-stained soils on National Fuel property, located behind the residential properties on Calais Street. This material was brought to the surface during the removal of the old fence. National Fuel's spill response contractor responded to the Site, placed the suspect material in a single 55-gallon drum, and covered the area with plastic sheeting pending further evaluation. A NYSDEC representative was on site to observe this work.

As fence installation work continued, National Fuel later visually identified blue green-stained material along the western property boundary and the area around the National Grid electric transmission tower located in the southwest corner of the Site. The fence replacement area and the location of the

observed fencepost holes with visually identified impacts are shown on the Existing Conditions Plan (Figure 2).

AECOM carried out corrective measures on behalf of National Fuel in response to these events and consistent with the provisions of National Fuel's Voluntary Cleanup Agreement (VCA number B9-0538-98-08), 2002 Operations and Maintenance (O&M) Plan, Deed Restrictions, and Corrective Measures Work Plan (CMWP) (AECOM, 2013b). Implementation of the CMWP took place between November 4, 2013 and November 15, 2013.

1.2 Report Organization

NYSDEC's Division of Environmental Remediation Technical Guide 10 - Technical Guidance for Site Investigation and Remediation (DER-10) does not provide a specific format for corrective measure completion reports. However, as these corrective measures are similar to the following, this report has been prepared in accordance with DER-10 requirements for construction completion reports (CCRs) and final engineering reports (FERs). The organization of this report has also been made to match NYSDEC's Generic Template for Final Engineering Report to the extent possible.

2.0 Corrective Measures Implementation

2.1 Corrective Measures Work Plan and Addenda Summary

Corrective Measures Work Plan

The CMWP was submitted to the NYSDEC on September 26, 2013 and was approved on October 1, 2013. This work plan proposed to delineate and excavate, to the extent practical, the areas of additional suspected purifier waste impacts within the fence replacement area and the southwest area proximal to the National Grid electric tower. The work plan proposed to cap any remaining suspected purifier wastes.

In addition, the work plan proposed the re-grading and construction of a drainage ditch (finished as a French drain with a 4-inch perforated drain pipe set in clean stone bedding) in the fence replacement area to maintain the natural southward flow of runoff and reduce pooling of water during the spring time and wet weather events.

Addendum No. 1

CMWP Addendum No. 1 was submitted to NYSDEC on October 29, 2013 and was approved on October 31, 2013. This addendum proposed collection of surface soil samples in areas of observed water pooling in the two southernmost residential property backyards located along the western National Fuel property boundary.

Addendum No. 2

CMWP Addendum No. 2 was submitted to NYSDEC on November 6, 2013 and was approved on November 7, 2013. This addendum proposed a design modification from a drainage ditch finished as a French drain to construction of a berm and swale. This change was proposed due to the shallow, perched groundwater encountered within the drainage ditch construction excavation during the implementation of the corrective measures.

The proposed berm and swale design is consistent with the intent of the original design, since it addressed surface water runoff towards the residential properties to the west, and not perched groundwater. The swale created by the berm was graded so that surface water drains toward the existing drainage feature in the southwest corner of the property.

Addendum No. 3

CMWP Addendum No. 3 was submitted to NYSDEC on February 19, 2014 and was approved on February 26, 2014. This addendum proposed to further investigate cyanide detections above Title 6 New York Codes, Rules and Regulations (NYCRR) Part 375 restricted residential soil cleanup objectives (SCOs) observed at two residential surface soil sample locations during corrective measures implementation, and to further delineate cyanide, arsenic, lead, and cadmium SCO exceedances in a number of the confirmatory soil sample locations.

CMWP Addendum No. 3 proposed the following field investigation activities:

- Soil borings advanced along transects parallel to the Site's western property line.
- Borings advanced at 50-foot intervals.
- Soil borings advanced to depths estimated at four feet.
- Surface soil samples collected from the top two inches of soil below the vegetative layer.
- A subsurface soil sample collected from the fill layer, if present.
- A second subsurface soil sample collected from the top six inches of native soil below the fill layer if present.
- If native soil is not encountered at four feet bgs, the boring to be extended to eight feet bgs.
- Samples to be analyzed dependent on the presence of the fill layer, and analytical results of proximal samples.

Data collected during CMWP Addendum No. 3 field investigation activities will be evaluated to determine whether additional corrective measures are necessary. CMWP Addendum No. 3 field investigation activities were completed in Spring 2014. Field data and associated plans for additional corrective measures, if necessary, will be summarized in a separate summary report.

2.2 Description of Corrective Measures

The corrective measures were planned to remove visibly impacted soil from National Fuel property and limit surface water runoff onto residential properties by constructing a drainage ditch along the Site's western property line. Due to conditions encountered (i.e., perched water), the design was changed to the construction of a berm limiting overland runoff.

Implementation of the corrective measures included the following:

- Excavation, removal, and disposal of visually impacted soils along the Site's western property boundary;
- Excavation, removal, and disposal of visually impacted soils near the electric transmission tower in the southwest corner of the Site;
- Backfilling and covering excavated areas with clay;
- Construction of a clay berm along the Site's western property boundary; and
- Perimeter confirmatory sampling.

The corrective measures were proposed in the CMWP (AECOM 2013b), and modified in the CMWP Addenda Nos. 1, 2, and 3 (AECOM, 2013d, 2013e, 2014). The corrective measures described in the CMWP and Addenda Nos. 1 and 2 were completed as proposed, or with revisions as described herein. Activities described in CMWP Addendum No. 3 were completed in Spring 2014 and will be summarized in a separate report upon completion.

Implementation of the corrective measures field activities summarized in this document began on November 4, 2013 and ended on November 15, 2013. The Excavation Plan showing locations of areas where dark stained soil was excavated and removed is shown on Figure 3. The As-Built Plan showing the constructed berm and finished elevation grades is included as Figure 4.

2.2.1 Corrective Measures Work Summary

The corrective measures completed through CMWP Addendum No. 2, are summarized below. A photographic summary is included in Appendix A.

Fence Replacement Area Suspected Purifier Wastes Delineation and Excavation

During slope grading and drainage berm installation in the fence replacement area next to the residential properties, four locations with stained soil were identified. These locations are shown on Figure 3. These locations were excavated to a depth of two to four feet and then backfilled. Geotextile fabric, gravel, and ornamental stone were used to provide erosion control and improve the area's appearance. In addition, hardy deer-resistant shrubs were planted along the slope to improve slope stability and create a visual barrier. Gravel and stone placed in this area are not considered an engineering control. When these activities were completed, a chain-link fence was installed along the bottom of the slope along the National Fuel property boundary as described in Section 2.5.

Fence Replacement Area Drainage Ditch/Berm

A drainage ditch was excavated approximately two feet east of National Fuel's western property boundary to a depth of one foot, from the northern end of the fence replacement area south to the existing drainage feature in the southwest corner of the property. During excavation, the ditch filled with water to a depth of approximately three inches. The water source appeared to be a perched zone within the fill layer placed on top of a naturally occurring, less permeable clay layer. During excavation, it was also determined that the low point in the surface topography was approximately 1 to 2 feet west of the property line.

In response to these observations, a berm to divert overland runoff was designed and constructed in lieu of the drainage ditch. The previously excavated drainage ditch was backfilled with clay and compacted using appropriate compaction equipment (e.g., pad-foot roller). The berm was then constructed on top of the abandoned drainage ditch in a series of individually compacted, shallow lifts (e.g., four to six inches). A geotextile fabric (Mirafi® 600X woven polypropylene) was placed over the berm and a layer of gravel and ornamental stone was placed over the geotextile fabric. All imported clay fill, common fill, and gravel drainage material met the requirements of DER-10. Backfill documentation was provided to NYSDEC on November 1, 2013 for gravel drainage material and on November 3, 2013 for common and clay fill.

The berm contained overland runoff in the swale created by the berm and the natural pre-existing slope. The swale was graded to drain toward the existing drainage feature on the southern end of the property. This is consistent with the intent of the original design, since it addresses surface water and not perched groundwater. Also, the clay fill in the ditch connects in some places with the native clay layer below the fill.

National Grid Electric Transmission Tower Area Excavation

Excavation and removal of soils beneath and south of the National Grid electric transmission tower were performed to remove surface and subsurface soils with visible blue green staining observed in the area. Soils were removed from an approximate 783 square foot area immediately south of the electric transmission tower, using mechanical equipment. Soils were excavated by hand immediately adjacent to sensitive utilities, foundations, and storm sewer structures within this area. The excavation depths and limits were based on visual observations. The minimum depth of the excavations was approximately one foot. Excavated areas were backfilled and capped using clay compacted with appropriate equipment (e.g., pad-foot roller). A final gravel cover was placed over the compacted clay surface.

Visual impacts in two areas within the overall larger electric transmission tower excavation were excavated greater than two feet to remove all suspected purifier wastes. Efforts to address visually impacted soil in this area were completed under the direction of National Fuel and NYSDEC with the

goal of removing known impacts and eliminating the need for perimeter fencing along the adjacent railway property. All of the visual impacts were not able to be excavated, as they were located directly under the electric transmission tower footprint and adjacent to the foundation. These impacts were covered in a minimum 9-inch thick clay cap and gravel cover.

Confirmatory Samples

Upon completion of the excavation and removal of visually impacted soils, confirmatory samples were collected along the western side of the property line and the south side of the property at a frequency of one sample per 30 feet. Samples were collected from 0 to 0.5 feet below ground surface (bgs) and analyzed for the following:

- Arsenic – Environmental Protection Agency (EPA) Method 6010
- Total cyanide - EPA Method 9010/9014
- Mercury - EPA Method 7471

Additional analyses were performed on the confirmatory samples collected adjacent to areas where visual impacts consisting of dark staining, petroleum odors, or elevated PID readings were observed. The confirmatory samples collected adjacent to those areas were analyzed for an expanded set of parameters including the following:

- Target compound list (TCL) volatile organic compounds (VOCs) – EPA Method 8260
- Semi-volatile organic compounds (SVOCs) – EPA Method 8270
- Target Analyte List (TAL) Metals – EPA Method 6010
- Total cyanide - EPA Method 9010/9014
- Mercury - EPA Method 7471

Any soils encountered that exhibited purifier waste characteristics were segregated, sampled, and characterized separately for proper disposal. Additional samples were collected for waste characterization as required by the waste management disposal facility.

Residential Property Surface Soil Samples

National Fuel worked with residents to verify the actual locations of sampling where they have identified pooling water in their yards. A surface soil sample was collected from each area where pooling had been observed. Four samples were collected from 0 to 2 inches bgs and were analyzed for the following:

- Arsenic – Environmental Protection Agency (EPA) Method 6010
- Total cyanide - EPA Method 9010/9014
- Mercury - EPA Method 7471

2.3 Governing Documents

The corrective measures were conducted in compliance with the governing documents described in the following sections. AECOM provided a construction site manager to direct and record contractor efforts through the implementation of CMWP and Addenda Nos. 1 and 2.

2.3.1 Corrective Measures Work Plan

The following documents, discussed in Section 2.1.1, were used as governing documents during the remediation:

- Corrective Measures Work Plan;
- CMWP Addendum No. 1; and,
- CMWP Addendum No. 2.

2.3.2 Specifications

Specification Section 01110 Excavation of Soil. Mineral Springs Road Former Manufactured Gas Plant Site, West Seneca, New York, dated October 19, 2013 (AECOM, 2013c), was used to procure a contractor to implement the CMWP. The primary activities included the following:

- Removal of soil potentially impacted by cyanide and organic constituents;
- Installation of a drainage system as directed;
- Placement of ornamental stone;
- Excavating post holes and plant holes; and
- Planting shrubs as directed by others.

The contractor was responsible for mobilization, site preparation, excavation, soil loading, geotextile fabric cover, drainage system, backfill, materials transportation, demobilization, and site restoration. AECOM and National Fuel were responsible for drainage ditch and berm alignment lay-out; fence post hole location marking; perimeter air monitoring; excavation sampling and analysis; waste characterization; waste documentation; temporary removal of fencing; fence installation; plants; and, planting supervision.

2.3.3 Health and Safety Plan

A Health and Safety Plan (HASP, AECOM 2013a) was prepared for any post-remedial action work conducted at the Site. The HASP provides guidance for potential hazards that might be encountered during required field activities.

AECOM or National Fuel personnel working on this project were required to comply with Occupational Safety and Health Administration (OSHA) Title 29 of the Code of Federal Regulations (CFR) Part 1910, Safety and Health Regulations for General Industry and applicable sections of Title 29 CFR Part 1926 Safety and Health Regulations for the Construction Industry.

Construction and field oversight personnel were also bound by the provisions of the HASP and National Fuel's contractor health and safety requirements. Field staff were required to participate in a preliminary project safety meeting to familiarize them with the anticipated hazards and respective onsite controls. The discussion covered the entire HASP, with emphasis on critical elements such as emergency response procedures, personal protective equipment (PPE), site control strategies, and monitoring requirements. In addition, daily tailgate safety meetings were held to discuss the anticipated scope of work, required controls, new hazards and controls, incident reporting, review the results of inspections, any lessons learned or concerns from the previous day.

OP-TECH Environmental Services, Inc. (OP-TECH), subcontracted to AECOM, prepared a HASP for their personnel for corrective measures implementation. This HASP was provided to AECOM as documentation of preparation prior to mobilization.

2.3.4 Community Air Monitoring Plan

Air monitoring was performed in accordance with the New York State Department of Health's (NYSDOH's) Generic Community Air Monitoring Plan (CAMP) (NYSDOH, 2000) to verify that dust or airborne contaminants were not impacting residents or visitors during corrective measures activities. The CAMP was described in the CMWP (AECOM, 2013b). Temporary monitoring stations were installed to provide continuous real-time monitoring. Two monitoring stations were placed between the construction area and the residential households. One monitoring station was placed between the construction area and the National Fuel facility. These three stations monitored the upwind and downwind perimeter. Monitoring was conducted for VOCs and particulates with a diameter of 10 micrometers or less (PM-10).

VOCs were monitored at the downwind perimeter of the immediate work area on a continuous basis using a PID. At a minimum, upwind concentrations were measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changed.

Particulate monitoring was conducted using real-time monitoring equipment capable of measuring PM-10 particulate matter and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment was equipped with an audible alarm to indicate exceedance of the action level.

VOC and dust monitoring were carried out during all ground intrusive activities performed during corrective measures implementation. VOC and dust levels did not exceed the concentrations required by NYSDOH. The results of the CAMP and work zone air monitoring are discussed in Section 3.6.

2.4 Elements of Corrective Measures

2.4.1 Consultants and Contractors

The on-Site personnel during the corrective measures implementation included representatives from the following companies, consultants, contractors, or agencies:

- National Fuel representatives provided oversight and coordination with the residential neighbors, sub-contractors, and NYSDEC.
- NYSDEC representatives provided agency oversight and communication with residential neighbors, as well as review and approval of proposed design changes and clarifications.
- AECOM representatives provided Site construction management, engineering direction, record keeping and documentation, sampling, and air monitoring.
- OP-TECH was contracted by AECOM to implement the corrective measures and coordinate transportation and disposal.
- National Grid provided supervision and guidance for work adjacent to National Grid's underground transmission line, overhead transmission lines, and transmission line tower.
- TestAmerica Laboratories, Inc. (TestAmerica) was contracted by National Fuel to provide analytical laboratory services.
- City Fence, Inc. (City Fence) was contracted by National Fuel to remove and install the perimeter fencing.
- Nussbaumer & Clarke, Inc. (N&C) was contracted by National Fuel to survey the fence replacement area.

2.4.2 Site Preparation

Site preparation activities included installation of site controls, baseline conditions survey, utility location and protection, and clearing of vegetation.

N&C conducted a pre-excavation survey including layout of the alignment of the planned drainage ditch, and National Fuel property boundary.

The pre-construction survey identified that the low elevation point coincides or lies one to two feet west of the National Fuel western property line, and not on National Fuel's property as previously thought during the design phase. As a result, the drainage ditch alignment was moved two feet eastward, slightly upslope and within National Fuel property line.

Prior to any excavation, National Grid met with on-site personnel and reviewed the scope of work and potential hazards associated with working around the underground transmission line, overhead transmission line, and electric transmission tower.

The CAMP monitoring stations and work area monitoring equipment were established prior to intrusive activities. Preparations for potential dust controls included wetting soils with water, limiting the size of open excavations, covering unprotected soils with plastic sheeting, and stopping excavation during periods of high wind were discussed.

Preliminary site clearing was performed using an excavator to remove grass and topsoil from the ground surface. Visual impacts observed during this clearing process were excavated and segregated into a separate stockpile.

2.4.3 Site Controls

City Fence removed the existing perimeter chain-link fence fabric to create access to the area along the western property boundary. The electric transmission tower area was accessed through a locked gate in the perimeter fencing.

Snow and silt fencing had been placed following the identification of impacted materials. This fencing remained in place during the implementation of corrective measures. This fencing also provided a physical deterrent along the property boundary.

Stockpiles were covered with plastic sheeting, but no other dust controls were required during the corrective measures implementation due to the wetness of the soils.

N&C surveyed location and depths of completed excavations prior to placement of clay backfill.

2.5 Engineering Controls

2.5.1 Fencing

Following corrective measures restoration activities, additional new chain-link fence was installed along the Site's western property boundary. The new fence was installed to meet engineering control requirements for remediated areas and prevent access to National Fuel property. The new fence is six feet tall and constructed of chain-link fabric. The fence alignment is connected to the Site's perimeter fence and extends southward along the western property boundary toward the southern property boundary.

Based on the relocation of the ditch/berm alignment two feet upslope, the available area to excavate fence post holes was limited, and the excavation would have compromised the integrity of the clay cap and berm. As a result, City Fence drove the fence posts into the soil, rather than OP-TECH augering holes and installing fence posts in concrete mix. The fencepost locations directly above the underground transmission line were hand excavated to assure the utility was not impacted, and then completed by installing the fence posts in a concrete mix.

A perimeter fence was not required around the electric transmission tower area because impacted soils had been excavated to the extent practical, and a minimum nine-inch thick clay cap was placed over the work area.

2.5.2 Soil Cover System

Soil cover systems were installed to cover known purifier materials that remain in place at two locations as shown on Figure 4. A minimum nine-inch thick clay cap was placed in the excavation adjacent to the south side of the electric transmission tower. The thickness of the cap varied to accommodate depth of excavation and return the excavation area to previous elevations. The clay cap was then covered with gravel to protect from erosion. The clay cap is considered an engineering control.

A small gravel cover was installed just northwest of the electric transmission tower, and just outside the southwest perimeter fence corner. The cover is shown on Figure 4. This area was covered with gravel based on the known presence purifier residuals remaining approximately one to two feet beneath the surface, adjacent to the buried National Grid high voltage cable. This area is referenced on a figure from the Southwestern Interim Remedial Measure completion report (RETEC, 1998), and coincides with the purifier residuals found while drilling the fence post holes in June 2013. The RETEC figure indicates that there is an area of known subsurface contamination located below the new perimeter fence. Part of this area is covered by a minimum of one foot of soil and the perimeter fence. These are considered an engineering control. A portion of this area is located outside of the perimeter fence. A geotextile fabric was placed against the slope and covered with one-foot of gravel as an engineering control to limit potential exposures. The locations where soil and gravel have been placed in this area are considered engineering controls.

2.5.3 Other Engineering Controls

Perimeter fencing was not installed around the electric transmission tower along the southern property boundary adjacent to the railroad. Visually impacted soil was excavated deeper than one foot and delineated around the electric transmission tower base. This area is now covered by a clay cap and gravel cover. The engineered cover around the electric transmission tower, the general overgrowth of brush and small trees in this area, as well as the adjacent railroad property being posted as "No Trespassing" serve to limit access and potential exposures in this area.

2.6 Site Restoration

Final site restoration included re-grading excavated areas, backfilling with approved fill materials, and installing a new chain link security fence along the National Fuel southwest property boundary.

Completed excavations on the slope along the western site boundary were backfilled and compacted using a pad-foot roller. The surface was then covered with geotextile fabric, gravel, and ornamental stone to improve the areas appearance and control erosion. Hardy deer-resistant shrubs were planted along the slope to improve slope stability and create a visual barrier.

A small gravel cover was installed next to the perimeter fence near the electric transmission tower as shown on Figure 4.

N&C performed a final, as-built survey upon completion of site restoration activities.

2.7 Waste Management

Soils encountered in the fence replacement post holes in July 2013 were segregated and placed in a controlled stockpile on site. Visually impacted soils observed during the corrective measures implementation were segregated into soil stockpiles separate from non-impacted materials. Soil waste excavated and removed from the Site was treated as regulated material, transported and disposed of in accordance with local, State (including Title 6 NYCRR Part 360) and Federal regulations. Based on characterization for waste profiling, the materials were transported under non-hazardous waste manifests as non-hazardous regulated solids.

The material was transported to Chaffee Landfill in Chaffee, New York. Transport of waste materials was performed by Pariso Logistics, Buffalo, New York. A total of 265 tons of waste material was transported from the Site and disposed at Chaffee Landfill.

3.0 Sampling Documentation

Samples collected during implementation of the CMWP and Addenda Nos. 1 and 2 were analyzed at a NYSDOH Environmental Laboratory Accreditation Program (ELAP) certified laboratory. Reporting limits were less than the SCOs for restricted residential use for each analyte. Quality control samples, including field duplicate and matrix/matrix-spike duplicates, were collected at a frequency of 1 per 20 samples. Chain of custody procedures were followed to document sample integrity during container preparation, shipment, and sampling. A Level B laboratory analytical package was provided by the laboratory and a Data Usability Summary Report (DUSR) was prepared for all samples.

Preliminary analytical data for the confirmatory and residential samples were provided to NYSDEC and NYSDOH following receipt from the laboratory in a letter dated December 13, 2013 (AECOM 2013f). Subsequently, the validated analytical data (i.e., the DUSR) was provided to NYSDEC on January 14, 2014.

3.1 Imported Backfill

Backfill and Site restoration materials included the following:

- 204 tons of clay;
- 47 tons of common fill;
- 120 tons of three-inch and four-inch ornamental stone;
- 47 tons of one-inch screened gravel; and,
- Bagged topsoil and mulch.

In accordance with NYSDEC DER-10 (NYSDEC, 2010), Section 5.4(e)5., ornamental stone and screened drainage stone did not contain soil or other materials that required analysis. Imported clay and common fill materials were sampled and analyzed for TCL VOCs and SVOCs, cyanide, TAL metals, mercury, polychlorinated biphenyls (PCBs), and pesticides prior to use on-site. All imported backfill materials were within acceptable ranges for each analyte in accordance with NYSDEC DER-10, and were approved for use on-site. The bagged topsoil and mulch used for landscaping was approved for use on site because they were packaged and sold as a commercial product. The backfill analytical data are summarized in Table 1 and included in Appendix B.

3.2 Confirmatory Soil Samples

Confirmatory soil samples were collected along the western edge of the fence replacement area. These samples were collected at a frequency of one sample for every 30 linear feet (LF) of sidewall. In the excavation next to the transmission tower, sidewall samples were collected at a frequency of one for every 30 LF and bottom samples were collected at a frequency of one sample for every 900 square feet (SF), consistent with NYSDEC DER-10. Soil samples were collected from 0 to 0.5 feet bgs and analyzed for total cyanide, mercury, and arsenic. Six confirmatory samples were analyzed for an expanded set of parameters including TCL VOCs and SVOCs, TAL metals, total cyanide, and mercury because visual impacts (i.e. dark stained soils) were observed and removed during the corrective measure excavations adjacent these sample locations.

A total of 14 samples were collected along the west edge of the fence replacement area. Seven samples were collected in the electric transmission tower excavation area. Exceedances of arsenic, total cyanide, or both were identified in CS-1 to CS-10, CS-15 and CS-19. Six samples (CS-3, CS-4, and CS-6 to CS-9) were analyzed for the expanded parameter set. Of the expanded parameter analytes, polycyclic aromatic hydrocarbons (PAHs) in CS-6, CS-7 and CS-8 exceeded the restricted residential SCO. The confirmatory soil sample analytical data are summarized in Table 2, and included in Appendix B.

Soil borings were hand augered to 3 feet bgs or native clay in the confirmatory sample locations adjacent to areas where visually impacted materials were excavated and removed. These borings indicated the presence of a sandy silt fill layer approximately 18 inches thick. Below the fill is native mottled silty clay. The soil cross section developed from these borings is included in Figure 5. The boring logs are included in Appendix C.

3.3 Residential Surface Soil Samples

Surface soil samples were collected as discussed in the CMWP Addendum No. 2. The samples were collected in four areas where surface water pooling had been previously observed in the two southernmost residential property backyards located adjacent to the western property boundary. National Fuel worked with residents to identify sampling locations where pooling water had been observed. Samples were collected from 0 to 2 inches bgs and analyzed for total cyanide, mercury, and arsenic. Visual impacts or PID readings were not observed for any of the residential samples, thus the samples were not analyzed for the extended analyte list.

Laboratory analytical results indicated that total cyanide concentrations greater than restricted residential SCOs are present on the residential properties. NYSDEC was verbally notified immediately following receipt of these results. The residential soil sample analytical data associated with CMWP Addendum No. 2 are summarized in Table 3, and included in Appendix B. Addendum No. 3 was prepared to investigate these areas further.

3.4 Water Sampling

Groundwater began infiltrating into the drainage ditch during excavation. AECOM reviewed the boring log for well MW-15, adjacent to the excavation area which indicated that that the minimum historic depth to groundwater is 7.95 feet bgs. The bottom of the ditch and surface of the water in the ditch are much shallower than the historic groundwater table. Based on this information, the water in the ditch was determined to be perched groundwater located within the fill layer above the shallow, naturally occurring, clay layer.

After the ditch was excavated, sheen was observed on the surface of the water. As directed by NYSDEC, a water sample was collected and analyzed for VOCs; SVOCs; metals; and, total and free cyanide. Total cyanide, phenol, iron, and sodium concentrations exceeded the NYSDEC Groundwater Standard (NYSDEC TOGS, 1998). The sample results are summarized in Table 4 and included in Appendix B.

3.5 Waste Characterization

All excavated soil was classified as non-hazardous solid waste based on the results of waste characterization sampling. As shown in Table 5, the results of 6 soil samples were used to characterize material shipped off-site. This includes three samples collected in July 2013 from soil generated during fence installation and preliminary excavation. The analytical data from these

samples were submitted to NYSDEC via email on July 30, 2013. Two additional samples of these materials were collected from on October 22, 2013. One additional sample was collected during corrective measures implementation from visually impacted excavated material. The results are summarized in Table 5 and included in Appendix B. These results indicated that the materials were acceptable for transport and disposal as non-hazardous waste.

3.6 CAMP Results

Air monitoring was performed to verify that contaminants from the site did not impact nearby residents or visitors during site characterization or construction in accordance with the NYSDOH's Generic CAMP (NYSDOH, 2000). Temporary monitoring stations were installed to provide continuous real-time monitoring at the upwind and downwind work perimeters. Monitoring was performed for VOCs and airborne particulates (PM-10). Two monitoring stations were placed between the construction area and the residential households. One monitoring station was placed between the construction area and the National Fuel facility. These three stations monitored the upwind and downwind perimeter.

VOC and dust monitoring were carried out during all ground intrusive activities. Work area and downwind location dust concentrations did not exceed the action levels, and VOCs were not detected in the work area or when screening visually impacted materials. The dust monitoring is summarized in Table 6. These data indicate that the ambient air conditions did not exceed the levels identified in the work plan.

4.0 Conclusions

4.1 Work Plan Deviations

The confirmatory sample frequency was increased based on DER-10 guidance to one sample for every 30 LF along the western property boundary, one sample for every 30 LF along the electric transmission tower excavation sidewalls, and one sample for every 900 SF of the electric transmission tower excavation bottom.

Visual impacts along the western property boundary were excavated deeper than one foot with the goal of removing visually impacted material. This was completed under the direction of National Fuel and NYSDEC.

Visual impacts in the area of the National Grid electric transmission tower were excavated deeper than one foot to remove the observed material to the extent practicable. Efforts to address visually impacted soil in this area were completed under the direction of National Fuel and NYSDEC with the goal of removing known impacts and eliminate the need for perimeter fencing along the adjacent railway property. All of the visual impacts were not able to be excavated, as they were located directly under the electric transmission tower footprint and adjacent to the foundation. The impacted soils were covered by a clay cap and gravel cover. The engineered cover around the electric transmission tower, the general overgrowth of brush and small trees in this area, as well as the adjacent railroad property being posted as "No Trespassing" serve to limit access and potential exposures in this area.

A small gravel cover was installed near the electric transmission tower based on a figure from an initial investigation report. This figure indicates that there is an area of known subsurface contamination located below the new perimeter fence. A portion of this area is located outside of the perimeter fence and potentially accessible. The gravel cover is one foot thick and covers the potentially contaminated area, thus eliminating potential access pathways.

Following site mobilization and prior to clearing, National Fuel had tree stumps along the property line ground down to the ground surface.

4.2 Contamination Remaining

During excavation of the area adjacent to the electric transmission tower, visual impacts were observed directly adjacent to and below the electric transmission tower footings. These areas could not be excavated without structurally undermining the electric transmission tower. This area was covered by a minimum of a one foot clay cap to prevent future potential exposures.

An underground transmission line crosses the western property boundary. Due to the potential hazards associated with the transmission line, the area directly above and adjacent to the transmission line was not excavated. There are potentially impacted materials located around the transmission line that were not able to be excavated.

The confirmatory and residential soil sampling indicated elevated concentrations of cyanide and arsenic located along the western property boundary. These impacts will be further investigated during implementation of CMWP Addendum No. 3.

4.3 Future Activities

Future activities will include implementation of CMWP Addendum No. 3, including surface and subsurface soil sampling, fill characterization, and shallow groundwater sampling.

Soil samples will be collected and analyzed from shallow borings throughout the residential properties and along the National Fuel property boundary. In addition to soil sampling, an attempt will be made to collect perched groundwater samples from two locations.

Soil borings will be advanced along transects parallel to the National Fuel property line. Borings will be advanced at 50-foot intervals. Soil borings will be advanced to depths estimated at four feet. Surface soil samples will be collected from the top two inches of soil below the vegetative layer. A subsurface soil sample will be collected from the fill layer if present. A second subsurface soil sample will be collected from the top six inches of native soil below the fill layer if present. If native soil is not encountered at four feet, the boring will be extended to eight feet. Samples will be analyzed dependent on the presence of the fill layer, and analytical results of proximal samples.

Results of these activities will be reported under separate cover.

5.0 References

AECOM 2013a. Health and Safety Plan. Mineral Springs Road Former Manufactured Gas Plant Site, West Seneca, New York. August 9, 2013.

AECOM 2013b. Corrective Measures Work Plan Fence Replacement Area. Mineral Springs Road Former Manufactured Gas Plant Site, West Seneca, New York. September 26, 2013.

AECOM 2013c. Specification Section 01110 Excavation of Soil. Mineral Springs Road Former Manufactured Gas Plant Site, West Seneca, New York. October 21, 2013.

AECOM 2013d. Corrective Measures Work Plan Addendum. Mineral Springs Road Former Manufactured Gas Plant Site, West Seneca, New York. November 1, 2013.

AECOM 2013e. Corrective Measures Work Plan Addendum #2. Mineral Springs Road Former Manufactured Gas Plant Site, West Seneca, New York. November 6, 2013.

AECOM 2013f. Fence Replacement Area Corrective Measure Confirmatory and Residential Sample Summary. Mineral Springs Road Former Manufactured Gas Plant Site. December 13, 2013.

AECOM 2014. Corrective Measures Work Plan Addendum #3. Mineral Springs Road Former Manufactured Gas Plant Site, West Seneca, New York. February 19, 2014.

NYSDEC 1998. NYSDEC Technical Operational and Guidance Series (TOGS) 1.1.1, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998.

NYSDEC 2010. DER-10 Technical Guidance for Site Investigation and Remediation. May 2010.

NYSDOH 2000. Generic Community Air Monitoring Plan. June 20, 2000.

RETEC 1998. Project Complete Report – Southwestern Interim Remedial Measure: Excavation and Removal of Purifier Residuals. Mineral Springs Road MGP Site. West Seneca, New York. January 23, 1998.

Tables

Table 1
Summary of Backfill Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	Restricted Residential Use Cleanup Standards 375-6.8B	CLAY 10/24/2013 CLAY 10242013 480487031	GENERAL FILL 10/24/2013 DUP-FILL 10242013 480487031	GENERAL FILL 10/24/2013 GENERAL FILL 10242013 480487031
VOCs (ug/Kg)					
1,1,1-TRICHLOROETHANE	71-55-6	100000	< 3.8	< 3.9	< 4.0
1,1,2,2-TETRACHLOROETHANE	79-34-5	NL	< 3.8	< 3.9	< 4.0
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	NL	< 3.8	< 3.9	< 4.0
1,1,2-TRICHLOROETHANE	79-00-5	NL	< 3.8	< 3.9	< 4.0
1,1-DICHLOROETHANE	75-34-3	26000	< 3.8	< 3.9	< 4.0
1,1-DICHLOROETHENE	75-35-4	100000	< 3.8	< 3.9	< 4.0
1,2,4-TRICHLOROBENZENE	120-82-1	NL	< 3.8	< 3.9	< 4.0
1,2,4-TRIMETHYLBENZENE	95-63-6	52000	< 3.8	< 3.9	< 4.0
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	NL	< 3.8	< 3.9	< 4.0
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	106-93-4	NL	< 3.8	< 3.9	< 4.0
1,2-DICHLOROBENZENE	95-50-1	100000	< 3.8	< 3.9	0.31
1,2-DICHLOROETHANE	107-06-2	3100	< 3.8	< 3.9	< 4.0
1,2-DICHLOROPROPANE	78-87-5	NL	< 3.8	< 3.9	< 4.0
1,3,5-TRIMETHYLBENZENE (MESITYLENE)	108-67-8	52000	< 3.8	< 3.9	< 4.0
1,3-DICHLOROBENZENE	541-73-1	49000	< 3.8	< 3.9	< 4.0
1,4-DICHLOROBENZENE	106-46-7	13000	< 3.8	< 3.9	< 4.0
1,4-DIOXANE (P-DIOXANE)	123-91-1	13000	< 150	< 160	< 160
2-HEXANONE	591-78-6	NL	< 19	< 19	< 20
ACETONE	67-64-1	100000	< 19	< 19	< 20
BENZENE	71-43-2	4800	< 3.8	< 3.9	< 4.0
BROMODICHLOROMETHANE	75-27-4	NL	< 3.8	< 3.9	< 4.0
BROMOFORM	75-25-2	NL	< 3.8	< 3.9	< 4.0
BROMOMETHANE	74-83-9	NL	< 3.8	< 3.9	< 4.0
CARBON DISULFIDE	75-15-0	NL	< 3.8	< 3.9	< 4.0
CARBON TETRACHLORIDE	56-23-5	2400	< 3.8	< 3.9	< 4.0
CHLOROBENZENE	108-90-7	100000	< 3.8	< 3.9	< 4.0
CHLOROETHANE	75-00-3	NL	< 3.8	< 3.9	< 4.0
CHLOROFORM	67-66-3	49000	< 3.8	< 3.9	< 4.0
CHLOROMETHANE	74-87-3	NL	< 3.8	< 3.9	< 4.0
CIS-1,2-DICHLOROETHYLENE	156-59-2	100000	< 3.8	< 3.9	< 4.0
CIS-1,3-DICHLOROPROPENE	10061-01-5	NL	< 3.8	< 3.9	< 4.0
CYCLOHEXANE	110-82-7	NL	< 3.8	< 3.9	< 4.0
DIBROMOCHLOROMETHANE	124-48-1	NL	< 3.8	< 3.9	< 4.0
DICHLORODIFLUOROMETHANE	75-71-8	NL	< 3.8	< 3.9	< 4.0
ETHYLBENZENE	100-41-4	41000	< 3.8	< 3.9	< 4.0
ISOPROPYLBENZENE (CUMENE)	98-82-8	NL	< 3.8	< 3.9	< 4.0
METHYL ACETATE	79-20-9	NL	< 3.8	< 3.9	< 4.0
METHYL ETHYL KETONE (2-BUTANONE)	78-93-3	100000	< 19	< 19	< 20
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	108-10-1	NL	< 19	< 19	< 20
METHYLCYCLOHEXANE	108-87-2	NL	< 3.8	< 3.9	< 4.0
METHYLENE CHLORIDE	75-09-2	100000	< 3.8	< 3.9	< 4.0
N-BUTYLBENZENE	104-51-8	100000	< 3.8	< 3.9	< 4.0
N-PROPYLBENZENE	103-65-1	100000	< 3.8	< 3.9	< 4.0
SEC-BUTYLBENZENE	135-98-8	100000	< 3.8	< 3.9	< 4.0
STYRENE	100-42-5	NL	< 3.8	< 3.9	< 4.0
T-BUTYLBENZENE	98-06-6	100000	< 3.8	< 3.9	< 4.0
TERT-BUTYL METHYL ETHER	1634-04-4	100000	< 3.8	< 3.9	< 4.0

Table 1
Summary of Backfill Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	Restricted Residential Use Cleanup Standards 375-6.8B	CLAY 10/24/2013 CLAY 10242013 480487031	GENERAL FILL 10/24/2013 DUP-FILL 10242013 480487031	GENERAL FILL 10/24/2013 GENERAL FILL 10242013 480487031
TETRACHLOROETHYLENE(PCE)	127-18-4	19000	< 3.8	< 3.9	< 4.0
TOLUENE	108-88-3	100000	< 3.8	< 3.9	< 4.0
TRANS-1,2-DICHLOROETHENE	156-60-5	100000	< 3.8	< 3.9	< 4.0
TRANS-1,3-DICHLOROPROPENE	10061-02-6	NL	< 3.8	< 3.9	< 4.0
TRICHLOROETHYLENE (TCE)	79-01-6	21000	< 3.8	< 3.9	< 4.0
TRICHLOROFLUOROMETHANE	75-69-4	NL	< 3.8	< 3.9	< 4.0
VINYL CHLORIDE	75-01-4	900	< 3.8	< 3.9	< 4.0
XYLENES, TOTAL	XYLENES	NL	< 7.6	< 7.8	< 8.0
PAHs (ug/Kg)					
2-METHYLNAPHTHALENE	91-57-6	NL	< 200	< 180	< 180
ACENAPHTHENE	83-32-9	100000	< 200	< 180	< 180
ACENAPHTHYLENE	208-96-8	100000	< 200	< 180	< 180
ANTHRACENE	120-12-7	100000	< 200	< 180	< 180
BENZO(A)ANTHRACENE	56-55-3	1000	< 200	< 180	< 180
BENZO(A)PYRENE	50-32-8	1000	< 200	< 180	< 180
BENZO(B)FLUORANTHENE	205-99-2	1000	< 200	< 180	< 180
BENZO(G,H,I)PERYLENE	191-24-2	100000	< 200	< 180	< 180
BENZO(K)FLUORANTHENE	207-08-9	3900	< 200	< 180	< 180
CHRYSENE	218-01-9	3900	< 200	< 180	< 180
DIBENZ(A,H)ANTHRACENE	53-70-3	330	< 200	< 180	< 180
FLUORANTHENE	206-44-0	100000	< 200	**25**	**14**
FLUORENE	86-73-7	100000	< 200	< 180	< 180
INDENO(1,2,3-C,D)PYRENE	193-39-5	500	< 200	< 180	< 180
NAPHTHALENE	91-20-3	100000	< 200	< 180	< 180
PHENANTHRENE	85-01-8	100000	< 200	< 180	< 180
PYRENE	129-00-0	100000	< 200	**12**	< 180
SVOCs (ug/Kg)					
2,4,5-TRICHLOROPHENOL	95-95-4	NL	< 200	< 180	< 180
2,4,6-TRICHLOROPHENOL	88-06-2	NL	< 200	< 180	< 180
2,4-DICHLOROPHENOL	120-83-2	NL	< 200	< 180	< 180
2,4-DIMETHYLPHENOL	105-67-9	NL	< 200	< 180	< 180
2,4-DINITROPHENOL	51-28-5	NL	< 380	< 350	< 350
2,4-DINITROTOLUENE	121-14-2	NL	< 200	< 180	< 180
2,6-DINITROTOLUENE	606-20-2	NL	< 200	< 180	< 180
2-CHLORONAPHTHALENE	91-58-7	NL	< 200	< 180	< 180
2-CHLOROPHENOL	95-57-8	NL	< 200	< 180	< 180
2-METHYLPHENOL (O-CRESOL)	95-48-7	100000	< 200	< 180	< 180
2-NITROANILINE	88-74-4	NL	< 380	< 350	< 350
2-NITROPHENOL	88-75-5	NL	< 200	< 180	< 180
3,3'-DICHLOROBENZIDINE	91-94-1	NL	< 200	< 180	< 180
3-NITROANILINE	99-09-2	NL	< 380	< 350	< 350
4,6-DINITRO-2-METHYLPHENOL	534-52-1	NL	< 380	< 350	< 350
4-BROMOPHENYL PHENYL ETHER	101-55-3	NL	< 200	< 180	< 180
4-CHLORO-3-METHYLPHENOL	59-50-7	NL	< 200	< 180	< 180
4-CHLOROANILINE	106-47-8	NL	< 200	< 180	< 180
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	NL	< 200	< 180	< 180
4-METHYLPHENOL (P-CRESOL)	106-44-5	100000	< 380	< 350	< 350
4-NITROANILINE	100-01-6	NL	< 380	< 350	< 350
4-NITROPHENOL	100-02-7	NL	< 380	< 350	< 350

Table 1
Summary of Backfill Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	Restricted Residential Use Cleanup Standards 375-6.8B	CLAY 10/24/2013 CLAY 10242013 480487031	GENERAL FILL 10/24/2013 DUP-FILL 10242013 480487031	GENERAL FILL 10/24/2013 GENERAL FILL 10242013 480487031
ACETOPHENONE	98-86-2	NL	< 200	< 180	< 180
ATRAZINE	1912-24-9	NL	< 200	< 180	< 180
BENZALDEHYDE	100-52-7	NL	90	< 180	< 180
BENZYL BUTYL PHTHALATE	85-68-7	NL	< 200	< 180	< 180
BIPHENYL (DIPHENYL)	92-52-4	NL	< 200	< 180	< 180
BIS(2-CHLOROETHOXY) METHANE	111-91-1	NL	< 200	< 180	< 180
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	111-44-4	NL	< 200	< 180	< 180
BIS(2-CHLOROISOPROPYL) ETHER	108-60-1	NL	< 200	< 180	< 180
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	NL	< 200	< 180	< 180
CAPROLACTAM	105-60-2	NL	< 200	< 180	< 180
CARBAZOLE	86-74-8	NL	< 200	< 180	< 180
DIBENZOFURAN	132-64-9	59000	< 200	< 180	< 180
DIETHYL PHTHALATE	84-66-2	NL	< 200	< 180	< 180
DIMETHYL PHTHALATE	131-11-3	NL	< 200	< 180	< 180
DI-N-BUTYL PHTHALATE	84-74-2	NL	< 200	< 180	< 180
DI-N-OCTYLPHTHALATE	117-84-0	NL	< 200	< 180	< 180
HEXACHLOROBENZENE	118-74-1	1200	< 200	< 180	< 180
HEXACHLOROBUTADIENE	87-68-3	NL	< 200	< 180	< 180
HEXACHLOROCYCLOPENTADIENE	77-47-4	NL	< 200	< 180	< 180
HEXACHLOROETHANE	67-72-1	NL	< 200	< 180	< 180
ISOPHORONE	78-59-1	NL	< 200	< 180	< 180
NITROBENZENE	98-95-3	NL	< 200	< 180	< 180
N-NITROSODI-N-PROPYLAMINE	621-64-7	NL	< 200	< 180	< 180
N-NITROSODIPHENYLAMINE	86-30-6	NL	< 200	< 180	< 180
PENTACHLOROPHENOL	87-86-5	6700	< 380	< 350	< 350
PHENOL	108-95-2	100000	< 200	< 180	< 180
Metals (mg/Kg)					
ALUMINUM	7429-90-5	NL	12800	3870	3190
ANTIMONY	7440-36-0	NL	< 18.7	< 17.0	< 14.6
ARSENIC	7440-38-2	16	5.5	2.4	2.2
BARIUM	7440-39-3	400	104	33.6	30.1
BERYLLIUM	7440-41-7	72	0.72	0.21	0.19
CADMIUM	7440-43-9	4.3	0.17	0.12	0.16
CALCIUM	7440-70-2	NL	3630	104000	153000
CHROMIUM, TOTAL	7440-47-3	NL	15.4	5.7	4.6
COBALT	7440-48-4	NL	9.8	3.6	3.4
COPPER	7440-50-8	270	15.8	15.2	13.5
IRON	7439-89-6	NL	19700	7860	7340
LEAD	7439-92-1	400	12.3	6.0	7.1
MAGNESIUM	7439-95-4	NL	3390	44300	41600
MANGANESE	7439-96-5	2000	554	336	452
MERCURY	7439-97-6	0.81	0.013	< 0.021	0.012
NICKEL	7440-02-0	310	19.6	8.2	7.0
POTASSIUM	7440-09-7	NL	1220	1080	991
SELENIUM	7782-49-2	180	0.60	1.4	0.72
SILVER	7440-22-4	180	< 0.62	< 0.57	< 0.49
SODIUM	7440-23-5	NL	59.4	167	176

Table 1
Summary of Backfill Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	Restricted Residential Use Cleanup Standards 375-6.8B	CLAY 10/24/2013 CLAY 10242013 480487031	GENERAL FILL 10/24/2013 DUP-FILL 10242013 480487031	GENERAL FILL 10/24/2013 GENERAL FILL 10242013 480487031
THALLIUM	7440-28-0	NL	< 7.5	< 6.8	< 5.9
VANADIUM	7440-62-2	NL	**23.2**	**8.0**	**8.3**
ZINC	7440-66-6	10000	**59.0**	**29.8**	**34.2**
Cyanide (mg/Kg)					
CYANIDE	57-12-5	NL	< 1.1	< 1.0	< 1.0
PCBs (mg/Kg)					
PCB-1016 (Aroclor 1016)	12674-11-2	NL	< 0.21	< 0.19	< 0.19
PCB-1221 (Aroclor 1221)	11104-28-2	NL	< 0.21	< 0.19	< 0.19
PCB-1232 (Aroclor 1232)	11141-16-5	NL	< 0.21	< 0.19	< 0.19
PCB-1242 (Aroclor 1242)	53469-21-9	NL	< 0.21	< 0.19	< 0.19
PCB-1248 (Aroclor 1248)	12672-29-6	NL	< 0.21	< 0.19	< 0.19
PCB-1254 (Aroclor 1254)	11097-69-1	NL	< 0.21	< 0.19	< 0.19
PCB-1260 (Aroclor 1260)	11096-82-5	NL	< 0.21	< 0.19	< 0.19
Total PCBs			< 0.21	< 0.19	< 0.19
Pesticides (ug/Kg)					
4'4'-DDD	72-54-8	13000	< 1.9	< 1.8	< 1.8
4'4'-DDE	72-55-9	8900	**0.36**	**0.32**	**0.33**
4'4'-DDT	50-29-3	7900	< 1.9	**0.46**	**0.36**
Aldrin	309-00-2	97	< 1.9	< 1.8	< 1.8
alpha BHC (ALPHA HEXACHLOROCYCLOHEXANE)	319-84-6	480	**0.55**	< 1.8	< 1.8
alpha Chlordane	5103-71-9	4200	< 1.9	< 1.8	< 1.8
alpha Endosulfan	959-98-8	24000	< 1.9	< 1.8	< 1.8
beta BHC (BETA HEXACHLOROCYCLOHEXANE)	319-85-7	360	< 1.9	< 1.8	< 1.8
beta Endosulfan	33213-65-9	24000	< 1.9	< 1.8	< 1.8
delta BHC (DELTA HEXACHLOROCYCLOHEXANE)	319-86-8	100000	< 1.9	**0.46**	**0.46**
Dieldrin	60-57-1	200	< 1.9	< 1.8	< 1.8
Endosulfan Sulfate	1031-07-8	24000	< 1.9	< 1.8	< 1.8
Endrin	72-20-8	11000	< 1.9	< 1.8	< 1.8
Endrin Aldeyde	7421-93-4	NL	< 1.9	< 1.8	< 1.8
Endrin Ketone	53494-70-5	NL	< 1.9	< 1.8	< 1.8
gamma BHC (LINDANE)	58-89-9	1300	< 1.9	< 1.8	< 1.8
gamma-Chlordane	12789-03-6	NL	< 1.9	< 1.8	< 1.8
Heptachlor	76-44-8	2100	< 1.9	< 1.8	< 1.8
Heptachlor Epoxide	1024-57-3	NL	< 1.9	< 1.8	< 1.8
Methoxychlor	72-43-5	NL	< 1.9	< 1.8	< 1.8
Toxaphene	8001-35-2	NL	< 19	< 18	< 18

Notes:
<0.010 = Not detected above given laboratory reporting limit.
Bold = Detected above reporting limit.
mg/Kg = Milligrams per kilogram
VOCs - Volatile organic compounds
PAHs - Polycyclic aromatic hydrocarbons
SVOCs - Semivolatile organic compounds
NL = No limit has been established for this analytes
ND = None detected.
NS = not sampled for that analyte

Table 2
Summary of Confirmatory Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID	CAS #	Residential Use Cleanup Standards 375-6.8B	CS-1	CS-10	CS-11	CS-12	CS-13	CS-14	CS-15	CS-16	CS-17	CS-18
Sample Date			11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013
Sample ID			CS-1-20131107	CS-10-20131107	CS-11-20131107	CS-12-20131107	CS-13-20131107	CS-14-20131107	CS-15-20131107	CS-16-20131107	CS-17-20131107	CS-18-20131107
SDG			480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511
VOCs (mg/Kg)												
1,1,1-TRICHLOROETHANE	71-55-6	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,2,2-TETRACHLOROETHANE	79-34-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,2-TRICHLOROETHANE	79-00-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-DICHLOROETHANE	75-34-3	19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-DICHLOROETHENE	75-35-4	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-TRICHLOROBENZENE	120-82-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-TRIMETHYLBENZENE	95-63-6	47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	106-93-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-DICHLOROBENZENE	95-50-1	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-DICHLOROETHANE	107-06-2	2.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-DICHLOROPROPANE	78-87-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-TRIMETHYLBENZENE (MESITYLENE)	108-67-8	47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3-DICHLOROBENZENE	541-73-1	17	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,4-DICHLOROBENZENE	106-46-7	9.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,4-DIOXANE (P-DIOXANE)	123-91-1	9.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-HEXANONE	591-78-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ACETONE	67-64-1	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BENZENE	71-43-2	2.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BROMODICHLOROMETHANE	75-27-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BROMOFORM	75-25-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BROMOMETHANE	74-83-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CARBON DISULFIDE	75-15-0	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CARBON TETRACHLORIDE	56-23-5	1.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CHLOROBENZENE	108-90-7	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CHLOROETHANE	75-00-3	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CHLOROFORM	67-66-3	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CHLOROMETHANE	74-87-3	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CIS-1,2-DICHLOROETHYLENE	156-59-2	59	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CIS-1,3-DICHLOROPROPENE	10061-01-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CYCLOHEXANE	110-82-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DIBROMOCHLOROMETHANE	124-48-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DICHLORODIFLUOROMETHANE	75-71-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ETHYLBENZENE	100-41-4	30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ISOPROPYLBENZENE (CUMENE)	98-82-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
METHYL ACETATE	79-20-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
METHYL ETHYL KETONE (2-BUTANONE)	78-93-3	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE	108-10-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
METHYLCYCLOHEXANE	108-87-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
METHYLENE CHLORIDE	75-09-2	51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
N-BUTYLBENZENE	104-51-8	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
N-PROPYLBENZENE	103-65-1	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SEC-BUTYLBENZENE	135-98-8	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
STYRENE	100-42-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
T-BUTYLBENZENE	98-06-6	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TERT-BUTYL METHYL ETHER	1634-04-4	62	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TETRACHLOROETHYLENE(PCE)	127-18-4	5.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TOLUENE	108-88-3	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TRANS-1,2-DICHLOROETHENE	156-60-5	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TRANS-1,3-DICHLOROPROPENE	10061-02-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TRICHLOROETHYLENE (TCE)	79-01-6	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TRICHLOROFLUOROMETHANE	75-69-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VINYL CHLORIDE	75-01-4	0.21	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
XYLENES, TOTAL	XYLENES	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PAHs (mg/Kg)												
2-METHYLNAPHTHALENE	91-57-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ACENAPHTHENE	83-32-9	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 2
Summary of Confirmatory Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID	CAS #	Residential Use Cleanup Standards 375-6.8B	CS-1	CS-10	CS-11	CS-12	CS-13	CS-14	CS-15	CS-16	CS-17	CS-18
Sample Date			11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013
Sample ID			CS-1-20131107	CS-10-20131107	CS-11-20131107	CS-12-20131107	CS-13-20131107	CS-14-20131107	CS-15-20131107	CS-16-20131107	CS-17-20131107	CS-18-20131107
SDG			480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511
ACENAPHTHYLENE	208-96-8	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ANTHRACENE	120-12-7	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BENZO(A)ANTHRACENE	56-55-3	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BENZO(A)PYRENE	50-32-8	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BENZO(B)FLUORANTHENE	205-99-2	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BENZO(G,H,I)PERYLENE	191-24-2	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BENZO(K)FLUORANTHENE	207-08-9	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CHRYSENE	218-01-9	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DIBENZ(A,H)ANTHRACENE	53-70-3	0.33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
FLUORANTHENE	206-44-0	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
FLUORENE	86-73-7	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
INDENO(1,2,3-C,D)PYRENE	193-39-5	0.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
NAPHTHALENE	91-20-3	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PHENANTHRENE	85-01-8	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PYRENE	129-00-0	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SVOCs (mg/Kg)												
2,4,5-TRICHLOROPHENOL	95-95-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4,6-TRICHLOROPHENOL	88-06-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4-DICHLOROPHENOL	120-83-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4-DIMETHYLPHENOL	105-67-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4-DINITROPHENOL	51-28-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,4-DINITROTOLUENE	121-14-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2,6-DINITROTOLUENE	606-20-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-CHLORONAPHTHALENE	91-58-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-CHLOROPHENOL	95-57-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-METHYLPHENOL (O-CRESOL)	95-48-7	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-NITROANILINE	88-74-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-NITROPHENOL	88-75-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3,3'-DICHLOROBENZIDINE	91-94-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3-NITROANILINE	99-09-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4,6-DINITRO-2-METHYLPHENOL	534-52-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-BROMOPHENYL PHENYL ETHER	101-55-3	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-CHLORO-3-METHYLPHENOL	59-50-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-CHLOROANILINE	106-47-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-METHYLPHENOL (P-CRESOL)	106-44-5	34	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-NITROANILINE	100-01-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-NITROPHENOL	100-02-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ACETOPHENONE	98-86-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ATRAZINE	1912-24-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BENZALDEHYDE	100-52-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BENZYL BUTYL PHTHALATE	85-68-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BIPHENYL (DIPHENYL)	92-52-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BIS(2-CHLOROETHOXY) METHANE	111-91-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHE	111-44-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BIS(2-CHLOROISOPROPYL) ETHER	108-60-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CAPROLACTAM	105-60-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CARBAZOLE	86-74-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DIBENZOFURAN	132-64-9	14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DIETHYL PHTHALATE	84-66-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DIMETHYL PHTHALATE	131-11-3	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DI-N-BUTYL PHTHALATE	84-74-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DI-N-OCTYLPHTHALATE	117-84-0	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SVOCs (mg/Kg) (cont)												
HEXACHLOROBENZENE	118-74-1	0.33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HEXACHLOROBUTADIENE	87-68-3	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HEXACHLOROCYCLOPENTADIENE	77-47-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HEXACHLOROETHANE	67-72-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 2
Summary of Confirmatory Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID	CAS #	Residential Use Cleanup Standards 375-6.8B	CS-1	CS-10	CS-11	CS-12	CS-13	CS-14	CS-15	CS-16	CS-17	CS-18
Sample Date			11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013
Sample ID			CS-1-20131107	CS-10-20131107	CS-11-20131107	CS-12-20131107	CS-13-20131107	CS-14-20131107	CS-15-20131107	CS-16-20131107	CS-17-20131107	CS-18-20131107
SDG			480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511
ISOPHORONE	78-59-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
NITROBENZENE	98-95-3	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
N-NITROSODI-N-PROPYLAMINE	621-64-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
N-NITROSODIPHENYLAMINE	86-30-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PENTACHLOROPHENOL	87-86-5	2.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PHENOL	108-95-2	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Metals (mg/Kg)												
ALUMINUM	7429-90-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ANTIMONY	7440-36-0	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ARSENIC	7440-38-2	16	**32.1**	**35.1**	**15.1**	**2.8**	**2.7**	**9.1**	**16.3**	**13.0**	**6.1**	**11.8**
BARIUM	7440-39-3	350	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
BERYLLIUM	7440-41-7	14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CADMIUM	7440-43-9	2.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CALCIUM	7440-70-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CHROMIUM, HEXAVALENT	18540-29-9	22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CHROMIUM, TOTAL	7440-47-3	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
COBALT	7440-48-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
COPPER	7440-50-8	270	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
IRON	7439-89-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
LEAD	7439-92-1	400	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MAGNESIUM	7439-95-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MANGANESE	7439-96-5	2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MERCURY	7439-97-6	0.81	**0.32**	**0.42**	**0.11**	**0.031**	**0.017**	**0.038**	**0.44**	**0.31**	**0.059**	**0.062**
NICKEL	7440-02-0	140	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
POTASSIUM	7440-09-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SELENIUM	7782-49-2	36	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SILVER	7440-22-4	36	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SODIUM	7440-23-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
THALLIUM	7440-28-0	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VANADIUM	7440-62-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ZINC	7440-66-6	2200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (mg/Kg)												
CYANIDE	57-12-5	27	**115**	**33.5**	**17.6**	**< 0.97**	**< 0.99**	**1.8**	**0.97**	**12.4**	**0.69**	**1.9**

Notes:
<0.010 = Not detected above given laboratory reporting limit.
Bold = Detected above reporting limit.
Gray highlighted cells exceed NYSDEC Part 375-6 Restricted Use Soil Cleanup Objective - Residential
mg/Kg = Milligrams per kilogram
VOCs - Volatile organic compounds
PAHs - Polycyclic aromatic hydrocarbons
SVOCs - Semivolatile organic compounds
NL = No limit has been established for this analytes
ND = None detected.
NS = not sampled for that analyte

Table 2
Summary of Confirmatory Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID	CAS #	Residential Use Cleanup Standards 375-6.8B	CS-19	CS-2	CS-20	CS-21	CS-3	CS-3 DUP	CS-4	CS-5	CS-6	CS-7	CS-8	CS-9
Sample Date			11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/8/2013	11/7/2013	11/8/2013	11/8/2013
Sample ID			CS-19-20131107	CS-2-20131107	CS-20-20131107	CS-21-20131107	CS-3-20131107	CS-53-20131107	CS-4-20131107	CS-5-20131107	CS-6-20131108	CS-7-20131107	CS-8-20131108	CS-9-20131108
SDG			480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511
VOCs (mg/Kg)														
1,1,1-TRICHLOROETHANE	71-55-6	100	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,1,2,2-TETRACHLOROETHANE	79-34-5	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,1,2-TRICHLOROETHANE	79-00-5	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,1-DICHLOROETHANE	75-34-3	19	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,1-DICHLOROETHENE	75-35-4	100	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,2,4-TRICHLOROBENZENE	120-82-1	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,2,4-TRIMETHYLBENZENE	95-63-6	47	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	106-93-4	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,2-DICHLOROBENZENE	95-50-1	100	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,2-DICHLOROETHANE	107-06-2	2.3	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,2-DICHLOROPROPANE	78-87-5	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,3,5-TRIMETHYLBENZENE (MESITYLENE)	108-67-8	47	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,3-DICHLOROBENZENE	541-73-1	17	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,4-DICHLOROBENZENE	106-46-7	9.8	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
1,4-DIOXANE (P-DIOXANE)	123-91-1	9.8	NS	NS	NS	NS	< 0.26	< 0.27	< 0.31	NS	< 0.37	< 0.47	< 0.26	< 0.32
2-HEXANONE	591-78-6	NL	NS	NS	NS	NS	< 0.032	< 0.034	< 0.039	NS	< 0.046	< 0.058	< 0.032	< 0.04
ACETONE	67-64-1	100	NS	NS	NS	NS	< 0.032	< 0.034	< 0.039	NS	< 0.046	< 0.058	< 0.032	< 0.04
BENZENE	71-43-2	2.9	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
BROMODICHLOROMETHANE	75-27-4	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
BROMOFORM	75-25-2	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
BROMOMETHANE	74-83-9	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
CARBON DISULFIDE	75-15-0	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
CARBON TETRACHLORIDE	56-23-5	1.4	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
CHLOROBENZENE	108-90-7	100	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
CHLOROETHANE	75-00-3	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
CHLOROFORM	67-66-3	10	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
CHLOROMETHANE	74-87-3	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
CIS-1,2-DICHLOROETHYLENE	156-59-2	59	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
CIS-1,3-DICHLOROPROPENE	10061-01-5	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
CYCLOHEXANE	110-82-7	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
DIBROMOCHLOROMETHANE	124-48-1	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
DICHLORODIFLUOROMETHANE	75-71-8	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
ETHYLBENZENE	100-41-4	30	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
ISOPROPYLBENZENE (CUMENE)	98-82-8	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
METHYL ACETATE	79-20-9	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
METHYL ETHYL KETONE (2-BUTANONE)	78-93-3	100	NS	NS	NS	NS	< 0.032	< 0.034	< 0.039	NS	< 0.046	< 0.058	< 0.032	< 0.04
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE	108-10-1	NL	NS	NS	NS	NS	< 0.032	< 0.034	< 0.039	NS	< 0.046	< 0.058	< 0.032	< 0.04
METHYLCYCLOHEXANE	108-87-2	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
METHYLENE CHLORIDE	75-09-2	51	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
N-BUTYLBENZENE	104-51-8	100	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
N-PROPYLBENZENE	103-65-1	100	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
SEC-BUTYLBENZENE	135-98-8	100	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
STYRENE	100-42-5	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
T-BUTYLBENZENE	98-06-6	100	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
TERT-BUTYL METHYL ETHER	1634-04-4	62	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
TETRACHLOROETHYLENE(PCE)	127-18-4	5.5	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
TOLUENE	108-88-3	100	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
TRANS-1,2-DICHLOROETHENE	156-60-5	100	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
TRANS-1,3-DICHLOROPROPENE	10061-02-6	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
TRICHLOROETHYLENE (TCE)	79-01-6	10	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
TRICHLOROFLUOROMETHANE	75-69-4	NL	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
VINYL CHLORIDE	75-01-4	0.21	NS	NS	NS	NS	< 0.0064	< 0.0068	< 0.0077	NS	< 0.0092	< 0.012	< 0.0065	< 0.0080
XYLENES, TOTAL	XYLENES	NL	NS	NS	NS	NS	< 0.013	< 0.014	< 0.015	NS	< 0.018	< 0.023	< 0.013	< 0.016
PAHs (mg/Kg)														
2-METHYLNAPHTHALENE	91-57-6	NL	NS	NS	NS	NS	< 1.2	0.016	0.032	NS	0.078	< 3.3	0.19	0.022
ACENAPHTHENE	83-32-9	100	NS	NS	NS	NS	< 1.2	< 0.26	0.0075	NS	< 0.59	< 3.3	0.014	0.015

Table 2
Summary of Confirmatory Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID	CAS #	Residential Use Cleanup Standards 375-6.8B	CS-19	CS-2	CS-20	CS-21	CS-3	CS-3 DUP	CS-4	CS-5	CS-6	CS-7	CS-8	CS-9
Sample Date			11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/8/2013	11/7/2013	11/8/2013	11/8/2013
Sample ID			CS-19-20131107	CS-2-20131107	CS-20-20131107	CS-21-20131107	CS-3-20131107	CS-53-20131107	CS-4-20131107	CS-5-20131107	CS-6-20131108	CS-7-20131107	CS-8-20131108	CS-9-20131108
SDG			480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511
ACENAPHTHYLENE	208-96-8	100	NS	NS	NS	NS	< 1.2	0.04	0.09	NS	0.24	< 3.3	0.61	0.053
ANTHRACENE	120-12-7	100	NS	NS	NS	NS	0.072	0.023	0.048	NS	0.16	< 3.3	0.35	0.064
BENZO(A)ANTHRACENE	56-55-3	1	NS	NS	NS	NS	0.38	0.17	0.33	NS	1.1	0.92	3.3	0.4
BENZO(A)PYRENE	50-32-8	1	NS	NS	NS	NS	0.3	0.16	0.31	NS	1.2	0.91	3.9	0.42
BENZO(B)FLUORANTHENE	205-99-2	1	NS	NS	NS	NS	0.62	0.33	0.54	NS	2.8	1.8	7.6	0.59
BENZO(G,H,I)PERYLENE	191-24-2	100	NS	NS	NS	NS	0.086	0.062	0.12	NS	0.44	0.42	1.3	0.14
BENZO(K)FLUORANTHENE	207-08-9	1	NS	NS	NS	NS	0.19	0.13	0.21	NS	0.84	0.71	2.5	0.23
CHRYSENE	218-01-9	1	NS	NS	NS	NS	0.37	0.2	0.35	NS	1.3	0.98	3.6	0.43
DIBENZ(A,H)ANTHRACENE	53-70-3	0.33	NS	NS	NS	NS	< 1.2	0.02	0.04	NS	< 0.59	< 3.3	< 1.2	< 0.27
FLUORANTHENE	206-44-0	100	NS	NS	NS	NS	0.54	0.25	0.44	NS	1.4	0.92	3.5	0.67
FLUORENE	86-73-7	100	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	0.022
INDENO(1,2,3-C,D)PYRENE	193-39-5	0.5	NS	NS	NS	NS	0.087	0.058	0.11	NS	0.41	0.29	1.2	0.13
NAPHTHALENE	91-20-3	100	NS	NS	NS	NS	< 1.2	< 0.26	0.029	NS	< 0.59	< 3.3	0.21	0.029
PHENANTHRENE	85-01-8	100	NS	NS	NS	NS	0.32	0.092	0.19	NS	0.55	0.27	1	0.3
PYRENE	129-00-0	100	NS	NS	NS	NS	0.49	0.21	0.45	NS	1.2	0.86	5	0.6
SVOCs (mg/Kg)														
2,4,5-TRICHLOROPHENOL	95-95-4	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
2,4,6-TRICHLOROPHENOL	88-06-2	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
2,4-DICHLOROPHENOL	120-83-2	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
2,4-DIMETHYLPHENOL	105-67-9	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
2,4-DINITROPHENOL	51-28-5	NL	NS	NS	NS	NS	< 2.3	< 0.51	< 0.54	NS	< 1.1	< 6.4	< 2.3	< 0.52
2,4-DINITROTOLUENE	121-14-2	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
2,6-DINITROTOLUENE	606-20-2	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
2-CHLORONAPHTHALENE	91-58-7	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
2-CHLOROPHENOL	95-57-8	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
2-METHYLPHENOL (O-CRESOL)	95-48-7	100	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
2-NITROANILINE	88-74-4	NL	NS	NS	NS	NS	< 2.3	< 0.51	< 0.54	NS	< 1.1	< 6.4	< 2.3	< 0.52
2-NITROPHENOL	88-75-5	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
3,3'-DICHLOROBENZIDINE	91-94-1	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
3-NITROANILINE	99-09-2	NL	NS	NS	NS	NS	< 2.3	< 0.51	< 0.54	NS	< 1.1	< 6.4	< 2.3	< 0.52
4,6-DINITRO-2-METHYLPHENOL	534-52-1	NL	NS	NS	NS	NS	< 2.3	< 0.51	< 0.54	NS	< 1.1	< 6.4	< 2.3	< 0.52
4-BROMOPHENYL PHENYL ETHER	101-55-3	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
4-CHLORO-3-METHYLPHENOL	59-50-7	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
4-CHLOROANILINE	106-47-8	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
4-METHYLPHENOL (P-CRESOL)	106-44-5	34	NS	NS	NS	NS	< 2.3	< 0.51	< 0.54	NS	< 1.1	< 6.4	< 2.3	< 0.52
4-NITROANILINE	100-01-6	NL	NS	NS	NS	NS	< 2.3	< 0.51	< 0.54	NS	< 1.1	< 6.4	< 2.3	< 0.52
4-NITROPHENOL	100-02-7	NL	NS	NS	NS	NS	< 2.3	< 0.51	< 0.54	NS	< 1.1	< 6.4	< 2.3	< 0.52
ACETOPHENONE	98-86-2	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
ATRAZINE	1912-24-9	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
BENZALDEHYDE	100-52-7	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
BENZYL BUTYL PHTHALATE	85-68-7	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
BIPHENYL (DIPHENYL)	92-52-4	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
BIS(2-CHLOROETHOXY) METHANE	111-91-1	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHE	111-44-4	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
BIS(2-CHLOROISOPROPYL) ETHER	108-60-1	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	1.3	< 1.2	< 0.27
CAPROLACTAM	105-60-2	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
CARBAZOLE	86-74-8	NL	NS	NS	NS	NS	< 1.2	0.015	0.025	NS	0.088	< 3.3	0.098	0.038
DIBENZOFURAN	132-64-9	14	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	0.069	< 0.27
DIETHYL PHTHALATE	84-66-2	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
DIMETHYL PHTHALATE	131-11-3	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
DI-N-BUTYL PHTHALATE	84-74-2	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
DI-N-OCTYLPHTHALATE	117-84-0	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
SVOCs (mg/Kg) (cont)														
HEXACHLOROBENZENE	118-74-1	0.33	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
HEXACHLOROBUTADIENE	87-68-3	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
HEXACHLOROCYCLOPENTADIENE	77-47-4	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
HEXACHLOROETHANE	67-72-1	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27

Table 2
Summary of Confirmatory Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID	CAS #	Residential Use Cleanup Standards 375-6.8B	CS-19	CS-2	CS-20	CS-21	CS-3	CS-3 DUP	CS-4	CS-5	CS-6	CS-7	CS-8	CS-9
Sample Date			11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/7/2013	11/8/2013	11/7/2013	11/8/2013	11/8/2013
Sample ID			CS-19-20131107	CS-2-20131107	CS-20-20131107	CS-21-20131107	CS-3-20131107	CS-53-20131107	CS-4-20131107	CS-5-20131107	CS-6-20131108	CS-7-20131107	CS-8-20131108	CS-9-20131108
SDG			480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511	480497511
ISOPHORONE	78-59-1	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
NITROBENZENE	98-95-3	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
N-NITROSODI-N-PROPYLAMINE	621-64-7	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
N-NITROSODIPHENYLAMINE	86-30-6	NL	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
PENTACHLOROPHENOL	87-86-5	2.4	NS	NS	NS	NS	< 2.3	< 0.51	< 0.54	NS	< 1.1	< 6.4	< 2.3	< 0.52
PHENOL	108-95-2	100	NS	NS	NS	NS	< 1.2	< 0.26	< 0.28	NS	< 0.59	< 3.3	< 1.2	< 0.27
Metals (mg/Kg)														
ALUMINUM	7429-90-5	NL	NS	NS	NS	NS	3570	4180	13000	NS	4160	7510	3820	6920
ANTIMONY	7440-36-0	NL	NS	NS	NS	NS	1.9	1.9	2.1	NS	2.6	3.5	8.1	3.1
ARSENIC	7440-38-2	16	46	55.1	8.7	11.5	19.7	22.2	31.7	50.4	26.1	23.6	39.8	16.9
BARIUM	7440-39-3	350	NS	NS	NS	NS	98.7	112	186	NS	105	204	195	150
BERYLLIUM	7440-41-7	14	NS	NS	NS	NS	0.38	0.46	1.1	NS	0.47	1.0	0.40	0.44
CADMIUM	7440-43-9	2.5	NS	NS	NS	NS	1.9	2.2	1.7	NS	2.0	4.5	2.3	5.6
CALCIUM	7440-70-2	NL	NS	NS	NS	NS	3640	4000	16500	NS	4530	15500	10800	18000
CHROMIUM, HEXAVALENT	18540-29-9	22	NS	NS	NS	NS	3.4	< 6.2	2.8	NS	< 7.0	4.0	< 5.6	< 6.5
CHROMIUM, TOTAL	7440-47-3	NL	NS	NS	NS	NS	10.1	11.8	16.7	NS	13.6	20.8	13.6	18.0
COBALT	7440-48-4	NL	NS	NS	NS	NS	3.9	5.3	6.9	NS	5.1	5.7	6.4	6.3
COPPER	7440-50-8	270	NS	NS	NS	NS	110	131	211	NS	139	127	329	92.5
IRON	7439-89-6	NL	NS	NS	NS	NS	19100	21200	28000	NS	25200	35000	35200	24800
LEAD	7439-92-1	400	NS	NS	NS	NS	299	331	406	NS	359	1510	574	1110
MAGNESIUM	7439-95-4	NL	NS	NS	NS	NS	1110	1140	1470	NS	1090	3580	1810	6130
MANGANESE	7439-96-5	2000	NS	NS	NS	NS	149	230	391	NS	219	354	311	342
MERCURY	7439-97-6	0.81	0.087	0.42	0.095	0.013	0.22	0.33	0.30	0.32	0.17	0.30	0.26	0.13
NICKEL	7440-02-0	140	NS	NS	NS	NS	11.3	12.8	16.8	NS	17.3	17.7	16.4	20.3
POTASSIUM	7440-09-7	NL	NS	NS	NS	NS	506	556	1200	NS	547	816	488	998
SELENIUM	7782-49-2	36	NS	NS	NS	NS	0.67	1.3	1.1	NS	1.9	2.0	1.2	1.0
SILVER	7440-22-4	36	NS	NS	NS	NS	0.38	0.40	0.65	NS	0.58	< 1.1	1.1	0.41
SODIUM	7440-23-5	NL	NS	NS	NS	NS	223	257	333	NS	398	406	220	193
THALLIUM	7440-28-0	NL	NS	NS	NS	NS	< 8.7	< 8.6	< 10.1	NS	< 10.6	< 12.9	< 8.0	< 9.9
VANADIUM	7440-62-2	NL	NS	NS	NS	NS	11.1	12.3	24.8	NS	14.0	13.5	13.2	13.7
ZINC	7440-66-6	2200	NS	NS	NS	NS	439	481	302	NS	508	1390	530	836
Cyanide (mg/Kg)														
CYANIDE	57-12-5	27	60	45.3	13.0	9.8	84.7	170	26.6	47.1	105	216	30.4	29.7

Notes:
<0.010 = Not detected above given laboratory reporting limit.
Bold = Detected above reporting limit.
Grey highlighted cells exceed NYSDEC Part 375-6 Restricted Use Soil Cleanup Objective - Residential
mg/Kg = Milligrams per kilogram
VOCs - Volatile organic compounds
PAHs - Polycyclic aromatic hydrocarbons
SVOCs - Semivolatile organic compounds
NL = No limit has been established for this analytes
ND = None detected.
NS = not sampled for that analyte

Table 3
Summary of Residential Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	Restricted Residential Use Cleanup Standards 375-6.8B	RS-1 11/7/2013 RS-1-20131107 480497511	RS-1 DUP 11/7/2013 RS-5-20131107 480497511	RS-2 11/7/2013 RS-2-20131107 480497511	RS-3 11/7/2013 RS-3-20131107 480497511	RS-4 11/7/2013 RS-4-20131107 480497511
Metals (mg/Kg)							
ARSENIC	7440-38-2	16	**10.3**	**8.4**	**10.7**	**8.6**	**6.7**
MERCURY	7439-97-6	0.81	**0.40**	**0.35**	**0.34**	**0.13**	**0.086**
Cyanide (mg/Kg)							
CYANIDE	57-12-5	27	**15.4**	**67.2**	**12.2**	**28.2**	**1.9**

Notes:
<0.010 = Not detected above given laboratory reporting limit.
Bold = Detected above reporting limit.
Gray highlighted cells exceed NYSDEC Part 375-6 Restricted Use Soil Cleanup Objective - Residential
mg/Kg = Milligrams per kilogram
NL = No limit has been established for this analytes
ND = None detected.
NS = not sampled for that analyte

Table 4
Summary of Shallow Groundwater Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	NYSDEC Groundwater Guidance or Standard Value	CMW-1 11/5/2013 CMW-1-20131105 480494271
VOCs (ug/L)			
1,1,1-TRICHLOROETHANE	71-55-6	5	< 1.0
1,1,2,2-TETRACHLOROETHANE	79-34-5	5	< 1.0
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	5	< 1.0
1,1,2-TRICHLOROETHANE	79-00-5	1	< 1.0
1,1-DICHLOROETHANE	75-34-3	5	< 1.0
1,1-DICHLOROETHENE	75-35-4	5	< 1.0
1,2,4-TRICHLOROBENZENE	120-82-1	5	< 1.0
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.04	< 1.0
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	106-93-4	0.0006	< 1.0
1,2-DICHLOROBENZENE	95-50-1	3	< 1.0
1,2-DICHLOROETHANE	107-06-2	0.6	< 1.0
1,2-DICHLOROPROPANE	78-87-5	1	< 1.0
1,3-DICHLOROBENZENE	541-73-1	3	< 1.0
1,4-DICHLOROBENZENE	106-46-7	3	< 1.0
2-HEXANONE	591-78-6	50	< 5.0
ACETONE	67-64-1	50	**3.4**
BENZENE	71-43-2	1	< 1.0
BROMODICHLOROMETHANE	75-27-4	50	< 1.0
BROMOFORM	75-25-2	50	< 1.0
BROMOMETHANE	74-83-9	5	< 1.0
CARBON DISULFIDE	75-15-0	60	< 1.0
CARBON TETRACHLORIDE	56-23-5	5	< 1.0
CHLOROBENZENE	108-90-7	5	< 1.0
CHLOROETHANE	75-00-3	5	< 1.0
CHLOROFORM	67-66-3	7	< 1.0
CHLOROMETHANE	74-87-3	5	< 1.0
CIS-1,2-DICHLOROETHYLENE	156-59-2	5	< 1.0
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.4	< 1.0
CYCLOHEXANE	110-82-7	NL	< 1.0
DIBROMOCHLOROMETHANE	124-48-1	5	< 1.0
DICHLORODIFLUOROMETHANE	75-71-8	5	< 1.0
ETHYLBENZENE	100-41-4	5	< 1.0
ISOPROPYLBENZENE (CUMENE)	98-82-8	5	< 1.0
METHYL ACETATE	79-20-9	NL	< 1.0
METHYL ETHYL KETONE (2-BUTANONE)	78-93-3	50	< 10
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANO	108-10-1	NL	< 5.0
METHYLCYCLOHEXANE	108-87-2	NL	< 1.0
METHYLENE CHLORIDE	75-09-2	5	< 1.0
STYRENE	100-42-5	5	< 1.0
TERT-BUTYL METHYL ETHER	1634-04-4	10	< 1.0
TETRACHLOROETHYLENE(PCE)	127-18-4	5	< 1.0
TOLUENE	108-88-3	5	**0.88**
TRANS-1,2-DICHLOROETHENE	156-60-5	5	< 1.0
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.4	< 1.0
TRICHLOROETHYLENE (TCE)	79-01-6	5	< 1.0
TRICHLOROFLUOROMETHANE	75-69-4	5	< 1.0
VINYL CHLORIDE	75-01-4	2	< 1.0
XYLENES, TOTAL	XYLENES	NL	< 2.0

Table 4
Summary of Shallow Groundwater Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	NYSDEC Groundwater Guidance or Standard Value	CMW-1 11/5/2013 CMW-1-20131105 480494271
PAHs (ug/L)		NL	
2-METHYLNAPHTHALENE	91-57-6	NL	< 5.0
ACENAPHTHENE	83-32-9	20	< 5.0
ACENAPHTHYLENE	208-96-8	NL	< 5.0
ANTHRACENE	120-12-7	50	< 5.0
BENZO(A)ANTHRACENE	56-55-3	0.002	< 5.0
BENZO(A)PYRENE	50-32-8	0	< 5.0
BENZO(B)FLUORANTHENE	205-99-2	0.002	< 5.0
BENZO(G,H,I)PERYLENE	191-24-2	NL	< 5.0
BENZO(K)FLUORANTHENE	207-08-9	0.002	< 5.0
CHRYSENE	218-01-9	0.002	< 5.0
DIBENZ(A,H)ANTHRACENE	53-70-3	NL	< 5.0
FLUORANTHENE	206-44-0	50	< 5.0
FLUORENE	86-73-7	50	< 5.0
INDENO(1,2,3-C,D)PYRENE	193-39-5	0.002	< 5.0
NAPHTHALENE	91-20-3	10	< 5.0
PHENANTHRENE	85-01-8	50	< 5.0
PYRENE	129-00-0	50	< 5.0
SVOCs (ug/L)			
2,4,5-TRICHLOROPHENOL	95-95-4	NL	< 5.0
2,4,6-TRICHLOROPHENOL	88-06-2	NL	< 5.0
2,4-DICHLOROPHENOL	120-83-2	5	< 5.0
2,4-DIMETHYLPHENOL	105-67-9	50	< 5.0
2,4-DINITROPHENOL	51-28-5	10	< 10
2,4-DINITROTOLUENE	121-14-2	5	< 5.0
2,6-DINITROTOLUENE	606-20-2	5	< 5.0
2-CHLORONAPHTHALENE	91-58-7	10	< 5.0
2-CHLOROPHENOL	95-57-8	NL	< 5.0
2-METHYLPHENOL (O-CRESOL)	95-48-7	NL	< 5.0
2-NITROANILINE	88-74-4	5	< 10
2-NITROPHENOL	88-75-5	NL	< 5.0
3,3'-DICHLOROBENZIDINE	91-94-1	5	< 5.0
3-NITROANILINE	99-09-2	5	< 10
4,6-DINITRO-2-METHYLPHENOL	534-52-1	NL	< 10
4-BROMOPHENYL PHENYL ETHER	101-55-3	NL	< 5.0
4-CHLORO-3-METHYLPHENOL	59-50-7	NL	< 5.0
4-CHLOROANILINE	106-47-8	5	< 5.0
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	NL	< 5.0
4-METHYLPHENOL (P-CRESOL)	106-44-5	NL	< 10
4-NITROANILINE	100-01-6	5	< 10
4-NITROPHENOL	100-02-7	NL	< 10
ACETOPHENONE	98-86-2	NL	< 5.0
ATRAZINE	1912-24-9	7.5	< 5.0
BENZALDEHYDE	100-52-7	NL	< 5.0
BENZYL BUTYL PHTHALATE	85-68-7	50	< 5.0
BIPHENYL (DIPHENYL)	92-52-4	5	< 5.0
BIS(2-CHLOROETHOXY) METHANE	111-91-1	5	< 5.0
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ET	111-44-4	1	< 5.0
BIS(2-CHLOROISOPROPYL) ETHER	108-60-1	5	< 5.0
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	5	< 5.0
CAPROLACTAM	105-60-2	NL	< 5.0
CARBAZOLE	86-74-8	NL	< 5.0
DIBENZOFURAN	132-64-9	NL	< 10

Table 4
Summary of Shallow Groundwater Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	NYSDEC Groundwater Guidance or Standard Value	CMW-1 11/5/2013 CMW-1-20131105 480494271
DIETHYL PHTHALATE	84-66-2	50	< 5.0
DIMETHYL PHTHALATE	131-11-3	50	< 5.0
DI-N-BUTYL PHTHALATE	84-74-2	50	**0.39**
DI-N-OCTYLPHTHALATE	117-84-0	NL	< 5.0
HEXACHLOROBENZENE	118-74-1	0.4	< 5.0
HEXACHLOROBUTADIENE	87-68-3	0.5	< 5.0
HEXACHLOROCYCLOPENTADIENE	77-47-4	5	< 5.0
HEXACHLOROETHANE	67-72-1	5	< 5.0
ISOPHORONE	78-59-1	50	< 5.0
NITROBENZENE	98-95-3	0.4	< 5.0
N-NITROSODI-N-PROPYLAMINE	621-64-7	50	< 5.0
N-NITROSODIPHENYLAMINE	86-30-6	50	< 5.0
PENTACHLOROPHENOL	87-86-5	1	< 10
PHENOL	108-95-2	1	**2.4**
Metals (mg/L)			
ALUMINUM	7429-90-5	NL	**3.9**
ANTIMONY	7440-36-0	0.003	< 0.020
ARSENIC	7440-38-2	0.025	< 0.010
BARIUM	7440-39-3	1	**0.087**
BERYLLIUM	7440-41-7	0.003	< 0.0020
CADMIUM	7440-43-9	0.005	< 0.0010
CALCIUM	7440-70-2	NL	**108**
CHROMIUM, TOTAL	7440-47-3	0.05	**0.0048**
COBALT	7440-48-4	NL	**0.0035**
COPPER	7440-50-8	0.2	**0.043**
IRON	7439-89-6	0.3	**4.1**
LEAD	7439-92-1	0.025	**0.016**
MAGNESIUM	7439-95-4	35	**17.7**
MANGANESE	7439-96-5	0.3	**0.15**
MERCURY	7439-97-6	0.0007	< 0.00020
NICKEL	7440-02-0	0.1	**0.0078**
POTASSIUM	7440-09-7	NL	**6.4**
SELENIUM	7782-49-2	0.01	< 0.015
SILVER	7440-22-4	0.05	< 0.0030
SODIUM	7440-23-5	20	**180**
THALLIUM	7440-28-0	0.0005	< 0.020
VANADIUM	7440-62-2	NL	**0.0068**
ZINC	7440-66-6	2	**0.059**
CYANIDE (ug/L)			
CYANIDE	57-12-5	200	**208**
Cyanide (free)	FREE CN	NL	**9.8**

Notes:
ug/L = micrograms per liter
mg/L = miligrams per liter
Bold value = detected above reporting limit
Gray Highlighted values exceed NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Groundwater Guidance or Standard Value
NL = Not listed
ND = Not detected

Table 5
Summary of Waste Characterization Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	DRUMS 10/22/2013 DRUMS 10222013 480484292	Excavated Material 7/19/2013 SURFICAL EXCAVATED MATERIAL 48042862	MSW Fence Drum 7/11/2013 MSW FENCE DRUM 48041788	MSW Fence Soils 7/11/2013 MSW FENCE SOILS 48041788	SOIL PILE 10/22/2013 SOIL PILE 10222013 480484291	ST-1 11/5/2013 ST-1-20131105 480494291
VOCs (ug/Kg)							
1,1,1-TRICHLOROETHANE	71-55-6	NS	NS	NS	NS	NS	< 6.0
1,1,2,2-TETRACHLOROETHANE	79-34-5	NS	NS	NS	NS	NS	< 6.0
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	NS	NS	NS	NS	NS	< 6.0
1,1,2-TRICHLOROETHANE	79-00-5	NS	NS	NS	NS	NS	< 6.0
1,1-DICHLOROETHANE	75-34-3	NS	NS	NS	NS	NS	< 6.0
1,1-DICHLOROETHENE	75-35-4	NS	NS	NS	NS	NS	< 6.0
1,2,4-TRICHLOROBENZENE	120-82-1	NS	NS	NS	NS	NS	< 6.0
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	NS	NS	NS	NS	NS	< 6.0
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	106-93-4	NS	NS	NS	NS	NS	< 6.0
1,2-DICHLOROBENZENE	95-50-1	NS	NS	NS	NS	NS	< 6.0
1,2-DICHLOROETHANE	107-06-2	NS	NS	NS	NS	NS	< 6.0
1,2-DICHLOROPROPANE	78-87-5	NS	NS	NS	NS	NS	< 6.0
1,3-DICHLOROBENZENE	541-73-1	NS	NS	NS	NS	NS	< 6.0
1,4-DICHLOROBENZENE	106-46-7	NS	NS	NS	NS	NS	< 6.0
2-HEXANONE	591-78-6	NS	NS	NS	NS	NS	< 30
ACETONE	67-64-1	NS	NS	NS	NS	NS	< 30
BENZENE	71-43-2	NS	NS	< 5.9	< 5.8	NS	< 6.0
BROMODICHLOROMETHANE	75-27-4	NS	NS	NS	NS	NS	< 6.0
BROMOFORM	75-25-2	NS	NS	NS	NS	NS	< 6.0
BROMOMETHANE	74-83-9	NS	NS	NS	NS	NS	< 6.0
CARBON DISULFIDE	75-15-0	NS	NS	NS	NS	NS	< 6.0
CARBON TETRACHLORIDE	56-23-5	NS	NS	NS	NS	NS	< 6.0
CHLOROBENZENE	108-90-7	NS	NS	NS	NS	NS	< 6.0
CHLOROETHANE	75-00-3	NS	NS	NS	NS	NS	< 6.0
CHLOROFORM	67-66-3	NS	NS	NS	NS	NS	< 6.0
CHLOROMETHANE	74-87-3	NS	NS	NS	NS	NS	< 6.0
CIS-1,2-DICHLOROETHYLENE	156-59-2	NS	NS	NS	NS	NS	< 6.0
CIS-1,3-DICHLOROPROPENE	10061-01-5	NS	NS	NS	NS	NS	< 6.0
CYCLOHEXANE	110-82-7	NS	NS	NS	NS	NS	< 6.0
DIBROMOCHLOROMETHANE	124-48-1	NS	NS	NS	NS	NS	< 6.0
DICHLORODIFLUOROMETHANE	75-71-8	NS	NS	NS	NS	NS	< 6.0
ETHYLBENZENE	100-41-4	NS	NS	NS	NS	NS	< 6.0
ISOPROPYLBENZENE (CUMENE)	98-82-8	NS	NS	NS	NS	NS	< 6.0
METHYL ACETATE	79-20-9	NS	NS	NS	NS	NS	< 6.0
METHYL ETHYL KETONE (2-BUTANONE)	78-93-3	NS	NS	NS	NS	NS	< 30
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	108-10-1	NS	NS	NS	NS	NS	< 30
METHYLCYCLOHEXANE	108-87-2	NS	NS	NS	NS	NS	< 6.0
METHYLENE CHLORIDE	75-09-2	NS	NS	NS	NS	NS	7.2
STYRENE	100-42-5	NS	NS	NS	NS	NS	< 6.0
TERT-BUTYL METHYL ETHER	1634-04-4	NS	NS	NS	NS	NS	< 6.0
TETRACHLOROETHYLENE(PCE)	127-18-4	NS	NS	NS	NS	NS	< 6.0
TOLUENE	108-88-3	NS	NS	NS	NS	NS	< 6.0
TRANS-1,2-DICHLOROETHENE	156-60-5	NS	NS	NS	NS	NS	< 6.0
TRANS-1,3-DICHLOROPROPENE	10061-02-6	NS	NS	NS	NS	NS	< 6.0
TRICHLOROETHYLENE (TCE)	79-01-6	NS	NS	NS	NS	NS	< 6.0
TRICHLOROFLUOROMETHANE	75-69-4	NS	NS	NS	NS	NS	< 6.0
VINYL CHLORIDE	75-01-4	NS	NS	NS	NS	NS	< 6.0
XYLENES, TOTAL	XYLENES	NS	NS	NS	NS	NS	1.4

Table 5
Summary of Waste Characterization Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	DRUMS 10/22/2013 DRUMS 10222013 480484292	Excavated Material 7/19/2013 SURFICAL EXCAVATED MATERIAL 48042862	MSW Fence Drum 7/11/2013 MSW FENCE DRUM 48041788	MSW Fence Soils 7/11/2013 MSW FENCE SOILS 48041788	SOIL PILE 10/22/2013 SOIL PILE 10222013 480484291	ST-1 11/5/2013 ST-1-20131105 480494291
VOC-SPLP (mg/L)							
1,1-DICHLOROETHENE	75-35-4	NS	NS	< 0.010	< 0.010	NS	NS
1,2-DICHLOROETHANE	107-06-2	NS	NS	< 0.010	< 0.010	NS	NS
BENZENE	71-43-2	NS	NS	< 0.010	< 0.010	NS	NS
CARBON TETRACHLORIDE	56-23-5	NS	NS	< 0.010	< 0.010	NS	NS
CHLOROBENZENE	108-90-7	NS	NS	< 0.010	< 0.010	NS	NS
CHLOROFORM	67-66-3	NS	NS	< 0.010	< 0.010	NS	NS
METHYL ETHYL KETONE (2-BUTANONE)	78-93-3	NS	NS	< 0.050	< 0.050	NS	NS
TETRACHLOROETHYLENE(PCE)	127-18-4	NS	NS	< 0.010	< 0.010	NS	NS
TRICHLOROETHYLENE (TCE)	79-01-6	NS	NS	< 0.010	< 0.010	NS	NS
VINYL CHLORIDE	75-01-4	NS	NS	< 0.010	< 0.010	NS	NS
PAHs (ug/Kg)							
2-METHYLNAPHTHALENE	91-57-6	NS	NS	NS	NS	NS	47
ACENAPHTHENE	83-32-9	NS	NS	NS	NS	NS	< 1000
ACENAPHTHYLENE	208-96-8	NS	NS	NS	NS	NS	240
ANTHRACENE	120-12-7	NS	NS	NS	NS	NS	150
BENZO(A)ANTHRACENE	56-55-3	NS	NS	NS	NS	NS	760
BENZO(A)PYRENE	50-32-8	NS	NS	NS	NS	NS	680
BENZO(B)FLUORANTHENE	205-99-2	NS	NS	NS	NS	NS	1300
BENZO(G,H,I)PERYLENE	191-24-2	NS	NS	NS	NS	NS	590
BENZO(K)FLUORANTHENE	207-08-9	NS	NS	NS	NS	NS	590
CHRYSENE	218-01-9	NS	NS	NS	NS	NS	930
DIBENZ(A,H)ANTHRACENE	53-70-3	NS	NS	NS	NS	NS	190
FLUORANTHENE	206-44-0	NS	NS	NS	NS	NS	920
FLUORENE	86-73-7	NS	NS	NS	NS	NS	< 1000
INDENO(1,2,3-C,D)PYRENE	193-39-5	NS	NS	NS	NS	NS	540
NAPHTHALENE	91-20-3	NS	NS	NS	NS	NS	100
PHENANTHRENE	85-01-8	NS	NS	NS	NS	NS	420
PYRENE	129-00-0	NS	NS	NS	NS	NS	1200
SVOCs (ug/Kg)							
2,4,5-TRICHLOROPHENOL	95-95-4	NS	NS	NS	NS	NS	< 1000
2,4,6-TRICHLOROPHENOL	88-06-2	NS	NS	NS	NS	NS	< 1000
2,4-DICHLOROPHENOL	120-83-2	NS	NS	NS	NS	NS	< 1000
2,4-DIMETHYLPHENOL	105-67-9	NS	NS	NS	NS	NS	< 1000
2,4-DINITROPHENOL	51-28-5	NS	NS	NS	NS	NS	< 1900
2,4-DINITROTOLUENE	121-14-2	NS	NS	NS	NS	NS	< 1000
2,6-DINITROTOLUENE	606-20-2	NS	NS	NS	NS	NS	< 1000
2-CHLORONAPHTHALENE	91-58-7	NS	NS	NS	NS	NS	< 1000
2-CHLOROPHENOL	95-57-8	NS	NS	NS	NS	NS	< 1000
2-METHYLPHENOL (O-CRESOL)	95-48-7	NS	NS	NS	NS	NS	< 1000
2-NITROANILINE	88-74-4	NS	NS	NS	NS	NS	< 1900
2-NITROPHENOL	88-75-5	NS	NS	NS	NS	NS	< 1000
3,3'-DICHLOROBENZIDINE	91-94-1	NS	NS	NS	NS	NS	< 1000
3-NITROANILINE	99-09-2	NS	NS	NS	NS	NS	< 1900
4,6-DINITRO-2-METHYLPHENOL	534-52-1	NS	NS	NS	NS	NS	< 1900
4-BROMOPHENYL PHENYL ETHER	101-55-3	NS	NS	NS	NS	NS	< 1000
4-CHLORO-3-METHYLPHENOL	59-50-7	NS	NS	NS	NS	NS	< 1000
4-CHLOROANILINE	106-47-8	NS	NS	NS	NS	NS	< 1000
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	NS	NS	NS	NS	NS	< 1000
4-METHYLPHENOL (P-CRESOL)	106-44-5	NS	NS	NS	NS	NS	< 1900
4-NITROANILINE	100-01-6	NS	NS	NS	NS	NS	< 1900

Table 5
Summary of Waste Characterization Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	DRUMS 10/22/2013 DRUMS 10222013 480484292	Excavated Material 7/19/2013 SURFICAL EXCAVATED MATERIAL 48042862	MSW Fence Drum 7/11/2013 MSW FENCE DRUM 48041788	MSW Fence Soils 7/11/2013 MSW FENCE SOILS 48041788	SOIL PILE 10/22/2013 SOIL PILE 10222013 480484291	ST-1 11/5/2013 ST-1-20131105 480494291
4-NITROPHENOL	100-02-7	NS	NS	NS	NS	NS	< 1900
ACETOPHENONE	98-86-2	NS	NS	NS	NS	NS	< 1000
ATRAZINE	1912-24-9	NS	NS	NS	NS	NS	< 1000
BENZALDEHYDE	100-52-7	NS	NS	NS	NS	NS	< 1000
BENZYL BUTYL PHTHALATE	85-68-7	NS	NS	NS	NS	NS	< 1000
BIPHENYL (DIPHENYL)	92-52-4	NS	NS	NS	NS	NS	< 1000
BIS(2-CHLOROETHOXY) METHANE	111-91-1	NS	NS	NS	NS	NS	< 1000
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	111-44-4	NS	NS	NS	NS	NS	< 1000
BIS(2-CHLOROISOPROPYL) ETHER	108-60-1	NS	NS	NS	NS	NS	< 1000
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	NS	NS	NS	NS	NS	< 1000
CAPROLACTAM	105-60-2	NS	NS	NS	NS	NS	< 1000
CARBAZOLE	86-74-8	NS	NS	NS	NS	NS	77
DIBENZOFURAN	132-64-9	NS	NS	NS	NS	NS	35
DIETHYL PHTHALATE	84-66-2	NS	NS	NS	NS	NS	< 1000
DIMETHYL PHTHALATE	131-11-3	NS	NS	NS	NS	NS	< 1000
DI-N-BUTYL PHTHALATE	84-74-2	NS	NS	NS	NS	NS	< 1000
DI-N-OCTYLPHTHALATE	117-84-0	NS	NS	NS	NS	NS	< 1000
HEXACHLOROBENZENE	118-74-1	NS	NS	NS	NS	NS	< 1000
HEXACHLOROBUTADIENE	87-68-3	NS	NS	NS	NS	NS	< 1000
HEXACHLOROCYCLOPENTADIENE	77-47-4	NS	NS	NS	NS	NS	< 1000
HEXACHLOROETHANE	67-72-1	NS	NS	NS	NS	NS	< 1000
ISOPHORONE	78-59-1	NS	NS	NS	NS	NS	< 1000
NITROBENZENE	98-95-3	NS	NS	NS	NS	NS	< 1000
N-NITROSODI-N-PROPYLAMINE	621-64-7	NS	NS	NS	NS	NS	< 1000
N-NITROSODIPHENYLAMINE	86-30-6	NS	NS	NS	NS	NS	< 1000
PENTACHLOROPHENOL	87-86-5	NS	NS	NS	NS	NS	< 1900
PHENOL	108-95-2	NS	NS	NS	NS	NS	< 1000
SVOCs-TCLP (mg/L)							
1,1':4',1"-TERPHENYL-D14	1718-51-0	NS	NS	0.19	0.20	NS	NS
1,4-DICHLOROBENZENE	106-46-7	NS	NS	< 0.010	< 0.010	NS	NS
2,4,5-TRICHLOROPHENOL	95-95-4	NS	NS	< 0.0050	< 0.0050	NS	NS
2,4,6-TRIBROMOPHENOL	118-79-6	NS	NS	0.19	0.19	NS	NS
2,4,6-TRICHLOROPHENOL	88-06-2	NS	NS	< 0.0050	< 0.0050	NS	NS
2,4-DINITROTOLUENE	121-14-2	NS	NS	< 0.0050	< 0.0050	NS	NS
2-FLUOROBIPHENYL	321-60-8	NS	NS	0.16	0.17	NS	NS
2-FLUOROPHENOL	367-12-4	NS	NS	0.089	0.088	NS	NS
2-METHYLPHENOL (O-CRESOL)	95-48-7	NS	NS	< 0.0050	< 0.0050	NS	NS
3-Methylphenol	108-39-4	NS	NS	< 0.010	< 0.010	NS	NS
4-METHYLPHENOL (P-CRESOL)	106-44-5	NS	NS	< 0.010	< 0.010	NS	NS
HEXACHLOROBENZENE	118-74-1	NS	NS	< 0.0050	< 0.0050	NS	NS
HEXACHLOROBUTADIENE	87-68-3	NS	NS	< 0.0050	< 0.0050	NS	NS
HEXACHLOROETHANE	67-72-1	NS	NS	< 0.0050	< 0.0050	NS	NS
NITROBENZENE	98-95-3	NS	NS	< 0.0050	< 0.0050	NS	NS
NITROBENZENE-D5	4165-60-0	NS	NS	0.16	0.16	NS	NS
PENTACHLOROPHENOL	87-86-5	NS	NS	< 0.010	< 0.010	NS	NS
PHENOL-D5	4165-62-2	NS	NS	0.084	0.084	NS	NS
Pyridine	110-86-1	NS	NS	< 0.025	< 0.025	NS	NS

Table 5
Summary of Waste Characterization Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	DRUMS 10/22/2013 DRUMS 10222013 480484292	Excavated Material 7/19/2013 SURFICAL EXCAVATED MATERIAL 48042862	MSW Fence Drum 7/11/2013 MSW FENCE DRUM 48041788	MSW Fence Soils 7/11/2013 MSW FENCE SOILS 48041788	SOIL PILE 10/22/2013 SOIL PILE 10222013 480484291	ST-1 11/5/2013 ST-1-20131105 480494291
Metals (mg/Kg)							
ALUMINUM	7429-90-5	NS	594	NS	NS	NS	NS
ANTIMONY	7440-36-0	NS	7.2	NS	NS	NS	NS
ARSENIC	7440-38-2	NS	34.6	12.8	12.8	NS	NS
BARIUM	7440-39-3	NS	136	95.2	54.9	NS	NS
BERYLLIUM	7440-41-7	NS	1.5	NS	NS	NS	NS
CADMIUM	7440-43-9	NS	0.44	0.39	0.40	NS	NS
CALCIUM	7440-70-2	NS	3000	NS	NS	NS	NS
CHROMIUM, TOTAL	7440-47-3	NS	11.5	15.1	9.9	NS	NS
COBALT	7440-48-4	NS	0.13	NS	NS	NS	NS
COPPER	7440-50-8	NS	12.8	NS	NS	NS	NS
IRON	7439-89-6	NS	15600	NS	NS	NS	NS
LEAD	7439-92-1	NS	52.5	130	88.2	NS	NS
MAGNESIUM	7439-95-4	NS	157	NS	NS	NS	NS
MANGANESE	7439-96-5	NS	81.2	NS	NS	NS	NS
MERCURY	7439-97-6	NS	7.3	0.53	0.049	NS	NS
NICKEL	7440-02-0	NS	1.4	NS	NS	NS	NS
POTASSIUM	7440-09-7	NS	2860	NS	NS	NS	NS
SELENIUM	7782-49-2	NS	5.0	0.66	0.70	NS	NS
SILVER	7440-22-4	NS	1.1	5.8	< 0.58	NS	NS
SODIUM	7440-23-5	NS	2280	NS	NS	NS	NS
THALLIUM	7440-28-0	NS	< 6.5	NS	NS	NS	NS
VANADIUM	7440-62-2	NS	25.9	NS	NS	NS	NS
ZINC	7440-66-6	NS	80.5	NS	NS	NS	NS
Metals-TCLP (mg/L)							
ARSENIC	7440-38-2	NS	NS	NS	NS	NS	0.0059
BARIUM	7440-39-3	NS	NS	NS	NS	NS	0.61
CADMIUM	7440-43-9	NS	NS	NS	NS	NS	0.0042
CHROMIUM, TOTAL	7440-47-3	NS	NS	NS	NS	NS	0.0025
LEAD	7439-92-1	0.042	NS	NS	NS	NS	0.018
MERCURY	7439-97-6	NS	NS	NS	NS	NS	< 0.0020
SELENIUM	7782-49-2	NS	NS	NS	NS	NS	0.014
SILVER	7440-22-4	NS	NS	NS	NS	NS	< 0.50
Cyanide (mg/Kg)							
CYANIDE	57-12-5	NS	NS	NS	NS	NS	29.1
CYANIDE	57-12-5	NS	741	54.3	7.5	NS	NS
PCBs (mg/Kg)							
DCB Decachlorobiphenyl	2051-24-3	NS	NS	0.087	0.11	NS	NS
PCB-1016	12674-11-2	NS	NS	< 0.22	< 0.28	NS	NS
PCB-1221	11104-28-2	NS	NS	< 0.22	< 0.28	NS	NS
PCB-1232	11141-16-5	NS	NS	< 0.22	< 0.28	NS	NS
PCB-1242	53469-21-9	NS	NS	< 0.22	< 0.28	NS	NS
PCB-1248	12672-29-6	NS	NS	< 0.22	< 0.28	NS	NS
PCB-1254	11097-69-1	NS	NS	< 0.22	< 0.28	NS	NS
PCB-1260	11096-82-5	NS	NS	< 0.22	< 0.28	NS	NS
Tetrachloro-m-xylene	877-09-8	NS	NS	0.099	0.12	NS	NS

Table 5
Summary of Waste Characterization Analytical Results
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Location ID Sample Date Sample ID SDG	CAS #	DRUMS 10/22/2013 DRUMS 10222013 480484292	Excavated Material 7/19/2013 SURFICAL EXCAVATED MATERIAL 48042862	MSW Fence Drum 7/11/2013 MSW FENCE DRUM 48041788	MSW Fence Soils 7/11/2013 MSW FENCE SOILS 48041788	SOIL PILE 10/22/2013 SOIL PILE 10222013 480484291	ST-1 11/5/2013 ST-1-20131105 480494291
Reactivity (mg/Kg)							
Cyanide, Reactive	CREAC	NS	< 10.0	< 10.0	< 10.0	NS	< 10.0
Sulfide, Reactive	SREAC	NS	NS	< 10.0	< 10.0	< 10.0	NS
Other							
corrosivity by pH	CORROSIVITY	NS	NS	7.43	7.88	NS	NS
Flashpoint	FLASHPT	NS	NS	>176	>176	NS	< 0
Percent Moisture	PMOIST	NS	4.9	17	15	NS	NS
Percent Solids	PERCENT SOLIDS	NS	95	83	85	NS	NS
PH	PH	NS	NS	NS	NS	NS	7.43

Notes:
<0.010 = Not detected above given laboratory reporting limit.
Bold = Detected above reporting limit.
mg/Kg = Milligrams per kilogram
VOCs - Volatile organic compounds
PAHs - Polycyclic aromatic hydrocarbons
SVOCs - Semivolatile organic compounds
NL = No limit has been established for this analytes
ND = None detected.
NS = not sampled for that analyte

Table 6
Summary of CAMP Dust Monitoring Data
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Date	Elapsed Time [min]	15-Minute Average [µg/m^3]		
		Station 1	Station 2	Station 3
11/4/2013	0:15:00	8.3	5.5	9.8
	0:30:00	4.7	2.6	6.7
	0:45:00	3.7	1.5	5.7
	1:00:00	3.5	1.6	5.1
	1:15:00	2.7	1.2	4.8
	1:30:00	2.7	1.6	4.4
	1:45:00	2.9	6.6	4.3
	2:00:00	2.4	6.5	4.6
	2:15:00	2.8	3.3	4.6
	2:30:00	3.1	1.2	4.6
	2:45:00	3.3	0.2	5.3
	3:00:00	3.2	0.0	4.5
	3:15:00	2.9	0.0	4.5
	3:30:00	2.7	0.1	4.2
	3:45:00	3.1	0.4	4.5
	4:00:00	3.2	2.2	4.1
	4:15:00	3.1	4.5	4.5
	4:30:00	3.1	5.6	5.0
	4:45:00	3.3	6.2	5.0
	5:00:00	3.4	4.0	5.3
	5:15:00	3.5	0.0	5.9
	5:30:00	4.2	0.0	5.5
	5:45:00	3.4	NA	NA
11/5/2013	0:15:00	24.8	17.9	24.1
	0:30:00	25.3	20.4	24.5
	0:45:00	26.7	21.4	27.2
	1:00:00	31.1	23.6	42.1
	1:15:00	37.2	37.6	41.2
	1:30:00	34.7	38.2	37.5
	1:45:00	30.0	28.9	27.8
	2:00:00	23.2	22.5	20.7
	2:15:00	17.6	18.8	15.9
	2:30:00	16.0	15.3	15.2
	2:45:00	15.3	14.6	15.1
	3:00:00	15.4	15.1	15.0
	3:15:00	14.9	15.6	14.9
	3:30:00	14.7	18.2	15.3
	3:45:00	14.3	15.6	15.9
	4:00:00	14.2	12.7	14.3
	4:15:00	14.3	13.1	14.7
	4:30:00	14.1	13.2	14.7
	4:45:00	14.0	12.7	13.1
	5:00:00	14.4	12.3	13.1
	5:15:00	14.2	12.4	13.8
	5:30:00	14.1	12.4	14.6
	5:45:00	14.0	12.6	16.1
	6:00:00	14.0	13.0	18.7
	6:15:00	14.0	12.9	15.2
	6:30:00	14.1	13.8	17.4
	6:45:00	14.6	13.1	20.2
	7:00:00	14.1	13.1	20.7
	7:15:00	14.0	12.9	19.3
	7:30:00	14.1	12.6	35.1

Table 6
Summary of CAMP Dust Monitoring Data
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Date	Elapsed Time [min]	15-Minute Average [µg/m^3]		
		Station 1	Station 2	Station 3
11/5/2013	7:45:00	14.3	13.0	31.4
	8:00:00	14.0	12.9	14.0
	8:15:00	15.0	14.2	14.5
	8:30:00	14.4	13.2	14.5
	8:45:00	NA	12.2	13.6
	9:00:00	NA	12.1	NA
11/6/2013	0:15:00	12.2	10.3	10.8
	0:30:00	11.2	8.9	11.4
	0:45:00	10.9	8.9	11.5
	1:00:00	10.5	9.4	12.3
	1:15:00	10.1	8.5	10.7
	1:30:00	9.1	10.7	11.2
	1:45:00	9.0	7.8	10.2
	2:00:00	9.0	10.2	9.8
	2:15:00	15.2	8.0	9.6
	2:30:00	10.5	8.1	9.1
	2:45:00	10.7	7.8	8.3
	3:00:00	25.9	7.3	7.5
	3:15:00	12.5	6.5	8.4
	3:30:00	10.9	6.7	8.9
	3:45:00	5.9	6.0	7.5
	4:00:00	5.9	5.2	6.3
	4:15:00	5.5	5.1	6.4
	4:30:00	6.0	5.1	5.9
	4:45:00	5.9	6.1	6.0
	5:00:00	6.5	6.0	6.9
	5:15:00	5.2	6.1	7.8
	5:30:00	5.4	7.1	8.2
	5:45:00	4.8	5.8	7.9
	6:00:00	4.6	6.1	NA
	6:15:00	4.6	7.3	NA
	6:30:00	4.8	NA	NA
	6:45:00	4.9	NA	NA
	7:00:00	5.0	NA	NA
11/7/2013	0:15:00	7.1	5.4	6.6
	0:30:00	6.3	5.3	7.0
	0:45:00	7.7	5.9	7.3
	1:00:00	8.4	7.4	7.4
	1:15:00	8.4	6.3	6.1
	1:30:00	9.3	6.2	6.9
	1:45:00	10.5	6.4	6.0
	2:00:00	9.7	5.9	6.4
	2:15:00	7.0	6.5	7.3
	2:30:00	8.0	6.6	6.5
	2:45:00	6.6	6.1	5.9
	3:00:00	8.2	5.9	5.6
	3:15:00	8.2	5.4	5.8
	3:30:00	7.8	5.8	6.8
	3:45:00	15.7	6.0	6.5
	4:00:00	25.0	5.7	6.1
	4:15:00	20.6	6.9	7.5
	4:30:00	18.8	7.2	8.6
	4:45:00	15.1	8.3	8.1

Table 6
Summary of CAMP Dust Monitoring Data
Corrective Measures Completion Report
Mineral Springs Road Former MGP

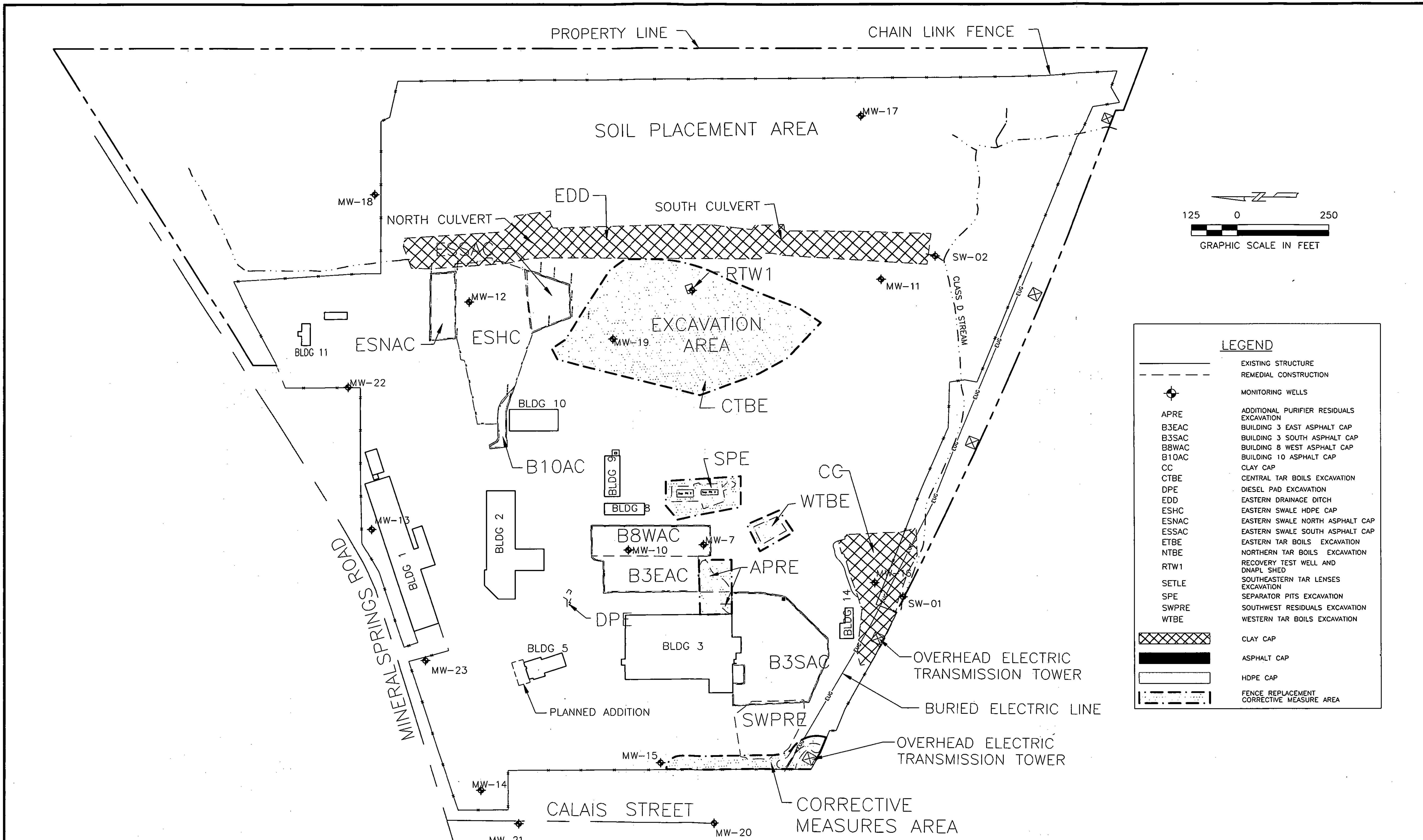
Date	Elapsed Time [min]	15-Minute Average [µg/m^3]		
		Station 1	Station 2	Station 3
11/7/2013	5:00:00	12.8	8.0	8.2
	5:15:00	20.7	8.0	8.6
	5:30:00	23.9	8.5	9.0
	5:45:00	33.5	8.4	9.0
	6:00:00	19.5	8.2	9.9
	6:15:00	22.1	8.9	9.9
	6:30:00	12.7	9.1	9.9
	6:45:00	10.2	8.8	9.2
	7:00:00	10.2	9.1	10.4
	7:15:00	11.1	9.6	9.9
	7:30:00	10.6	9.2	9.4
	7:45:00	10.3	9.1	10.0
	8:00:00	10.2	9.2	10.0
	8:15:00	10.4	9.3	9.8
	8:30:00	11.9	10.0	10.3
	8:45:00	11.7	10.6	11.0
	9:00:00	12.2	NA	NA
11/8/2013	0:15:00	10.2	9.8	11.2
	0:30:00	8.6	8.3	9.1
	0:45:00	9.1	8.3	7.9
	1:00:00	7.6	8.7	7.9
	1:15:00	6.7	7.2	7.7
	1:30:00	5.6	6.6	6.0
	1:45:00	5.0	5.6	4.9
	2:00:00	4.5	5.4	4.1
	2:15:00	4.7	5.0	3.6
	2:30:00	3.6	4.9	6.3
	2:45:00	3.7	4.1	2.8
	3:00:00	5.3	4.7	3.5
	3:15:00	4.4	5.0	4.1
	3:30:00	4.1	4.5	3.8
	3:45:00	6.6	4.7	3.1
	4:00:00	8.7	4.9	3.8
	4:15:00	7.5	4.7	3.6
	4:30:00	10.1	4.9	3.9
	4:45:00	7.2	5.7	4.2
	5:00:00	7.0	6.4	4.7
	5:15:00	6.9	6.3	5.8
	5:30:00	5.8	6.5	5.7
	5:45:00	5.4	6.0	6.9
	6:00:00	5.8	6.0	4.3
	6:15:00	5.9	6.1	4.6
	6:30:00	5.5	6.0	4.1
	6:45:00	5.5	6.0	4.5
	7:00:00	5.6	5.9	4.3
	7:15:00	5.4	6.1	4.8
11/11/2013	0:15:00	8.3	7.3	8.7
	0:30:00	9.3	8.5	10.2
	0:45:00	10.9	10.0	11.7
	1:00:00	12.3	11.9	12.6
	1:15:00	14.4	13.2	14.5
	1:30:00	15.1	14.0	14.3
	1:45:00	16.4	15.3	16.0

Table 6
Summary of CAMP Dust Monitoring Data
Corrective Measures Completion Report
Mineral Springs Road Former MGP

Date	Elapsed Time [min]	15-Minute Average [µg/m^3]		
		Station 1	Station 2	Station 3
11/11/2013	2:00:00	17.9	14.6	15.0
	2:15:00	16.4	14.6	14.9
	2:30:00	16.0	14.8	14.5
	2:45:00	16.9	15.0	14.9
	3:00:00	16.6	15.8	14.6
	3:15:00	18.7	15.9	16.0
	3:30:00	19.2	15.0	14.4
	3:45:00	19.5	15.0	14.3
	4:00:00	18.5	15.8	14.7
	4:15:00	17.9	16.8	15.8
	4:30:00	19.6	20.1	19.2
	4:45:00	22.3	21.8	21.7
	5:00:00	25.2	24.7	24.9
	5:15:00	29.2	28.2	29.7
	5:30:00	34.0	28.2	29.5
	5:45:00	33.0	29.8	31.1
	6:00:00	35.0	33.2	34.0
	6:15:00	38.0	36.6	38.5
	6:30:00	40.8	36.6	NA
11/12/2013	0:15:00	7.7	6.0	8.3
	0:30:00	9.5	7.6	10.1
	0:45:00	12.5	8.7	9.5
	1:00:00	11.0	9.0	9.5
	1:15:00	12.4	9.7	9.1
	1:30:00	11.3	9.1	8.1
	1:45:00	9.3	8.6	7.3
	2:00:00	8.5	7.9	7.1
	2:15:00	10.2	8.2	7.0
	2:30:00	8.7	7.9	6.8
	2:45:00	10.0	8.0	6.0
	3:00:00	7.7	7.3	NA

µg/m^3 - micrograms per cubic meter
NA - not applicable
min - minutes

Figures



PROPERTY LINE
CHAIN LINK FENCE
SOIL PLACEMENT AREA
MW-17
MW-18
EDD
NORTH CULVERT
SOUTH CULVERT
ESSAC
SW-02
RTW1
MW-11
MW-12
ESHC
ESNAC
EXCAVATION AREA
MW-19
CLASS D STREAM
BLDG 11
MW-22
CTBE
BLDG 10
B10AC
BLDG 9
SPE
BLDG 8
CC
WTBE
B8WAC
MW-7
MW-10
MW-13
BLDG 2
BLDG 1
B3EAC
APRE
MW-16
SW-01
DPE
BLDG 14
BLDG 3
B3SAC
MINERAL SPRINGS ROAD
BLDG 5
MW-23
PLANNED ADDITION
OVERHEAD ELECTRIC TRANSMISSION TOWER
BURIED ELECTRIC LINE
SWPRE
OVERHEAD ELECTRIC TRANSMISSION TOWER
MW-15
MW-14
CALAIS STREET
CORRECTIVE MEASURES AREA
MW-21
MW-20
EUG
125 0 250
GRAPHIC SCALE IN FEET
LEGEND
EXISTING STRUCTURE
REMEDIAL CONSTRUCTION
MONITORING WELLS
APRE ADDITIONAL PURIFIER RESIDUALS EXCAVATION
B3EAC BUILDING 3 EAST ASPHALT CAP
B3SAC BUILDING 3 SOUTH ASPHALT CAP
B8WAC BUILDING 8 WEST ASPHALT CAP
B10AC BUILDING 10 ASPHALT CAP
CC CLAY CAP
CTBE CENTRAL TAR BOILS EXCAVATION
DPE DIESEL PAD EXCAVATION
EDD EASTERN DRAINAGE DITCH
ESHC EASTERN SWALE HDPE CAP
ESNAC EASTERN SWALE NORTH ASPHALT CAP
ESSAC EASTERN SWALE SOUTH ASPHALT CAP
ETBE EASTERN TAR BOILS EXCAVATION
NTBE NORTHERN TAR BOILS EXCAVATION
RTW1 RECOVERY TEST WELL AND DNAPL SHED
SETLE SOUTHEASTERN TAR LENSES EXCAVATION
SPE SEPARATOR PITS EXCAVATION
SWPRE SOUTHWEST RESIDUALS EXCAVATION
WTBE WESTERN TAR BOILS EXCAVATION
CLAY CAP
ASPHALT CAP
HDPE CAP
FENCE REPLACEMENT CORRECTIVE MEASURE AREA
AECOM

MINERAL SPRINGS ROAD FACILITY
NATIONAL FUEL GAS
60250836.400.4.1

DATE: 09/04/2014 | DRWN: LKT

FACILITY SITE PLAN

FIGURE 1

MINERAL SPRINGS FACILITY

NIAGARA MOHAWK TEST STATION

NIAGARA MOHAWK VALVE

UNDER GROUND ELECTRIC

TOWER LEG BENCHMARK: ELEV-99.31'

APPROXIMATE LOCATION OF 72-inch BURIED DRAIN CULVERT

CONRAIL (PENN CENTRAL RAILROAD) (PENNSYLVANIA ROAD)

FRAME SHED

POOL

POOL HOUSE

FRAME GARAGE

FRAME SHED

GARAGE

SHED

NO. 137 CALAIS STREET

NO. 91 CALAIS STREET

GARAGE

NO. 121 CALAIS STREET

EDGE OF PAVEMENT

CALAIS STREET

15 0 30

GRAPHIC SCALE IN FEET

AECOM

E UNDERGROUND ELECTRICAL LINE

SD APPROXIMATE SEWER LOCATION

EDGE OF BUILDING

ELECTRICAL TRANSMISSION TOWER

EDGE OF ASPHALT

FENCE LINE

AREAS OF POOLING IDENTIFIED BY RESIDENTS

FENCEPOST HOLE WITH VISUALLY IDENTIFIED IMPACTS

NATIONAL FUEL GAS
MINERAL SPRINGS ROAD
FORMER MANUFACTURED GAS PLANT

DATE: 06/20/2014 | DRWN: LT/BcV | 60250836.400.4.1

FENCE REPLACEMENT AREA EXISTING CONDITIONS PLAN

FIGURE 2

File: J:\Rem_Eng\Project Files\National Fuel Gas\Mineral Springs 04870 NFG\CADD\Corrective Measures Completion Report\F-3 F-4.dwg Layout: F-2 EXISTING CONDITIONS User: townsendl Plotted: Jun 20, 2014 - 1:

MINERAL SPRINGS FACILITY

AREA WHERE DARK STAINED SOIL WAS EXCAVATED

NIAGARA MOHAWK TEST STATION

NIAGARA MOHAWK VALVE

UNDER GROUND ELECTRIC

TOWER LEG BENCHMARK ELEV=99.31'

CS-1 CS-2 CS-3 CS-4 CS-5 CS-6 CS-7 CS8 CS-9 CS-10 CS-11 CS-12 CS-13 CS-14 CS-15 CS-16 CS-17 CS-18 CS-19 CS-20 CS-21

RS-1 RS-2 RS-3 RS-4

FRAME SHED

POOL

POOL HOUSE

FRAME GARAGE

FRAME SHED

GARAGE

SHED

NO. 137 CALAIS STREET

NO. 61 CALAIS STREET

GARAGE

NO. 121 CALAIS STREET

EDGE OF PAVEMENT

CALAIS STREET

APPROXIMATE LOCATION OF 72-Inch BURIED DRAIN CULVERT

CONRAIL (PENN CENTRAL RAILROAD) (PENNSYLVANIA ROAD)

15 0 30

GRAPHIC SCALE IN FEET

AECOM

5' MAJOR CONTOUR
1' MINOR CONTOUR
ELECTRICAL TRANSMISSION TOWER
EDGE OF EXCAVATION
EDGE OF ASPHALT

E UNDERGROUND ELECTRICAL LINE
SD APPROXIMATE SEWER LOCATION
FENCE LINE
EDGE OF BUILDING
EXCAVATED VISUAL IMPACTS

RS-1 RESIDENTIAL SAMPLE LOCATION
CS-18 CONFIRMATORY SAMPLE LOCATION

NATIONAL FUEL GAS
MINERAL SPRINGS ROAD
FORMER MANUFACTURED GAS PLANT

FENCE REPLACEMENT AREA EXCAVATION PLAN

DATE: 05/15/2014	DRWN: LT/BcV	60250836.400.4.1	**FIGURE 3**

File: J:\Rem_Eng\Project Files\National Fuel Gas\Mineral Springs 04870 NFG\CADD\Corrective Measures Completion Report\F-3 F-4.dwg Layout: F-3 EXCAV PLAN User: townsend Plotted: May 15, 2014 - 11:14am

MINERAL SPRINGS FACILITY

CENTERLINE OF SWALE

FRAME SHED

POOL

POOL HOUSE

FRAME GARAGE

FRAME SHED

GARAGE

SHED

NO. 137 CALAIS STREET

NO. 91 CALAIS STREET

GARAGE

NO. 121 CALAIS STREET

EDGE OF PAVEMENT

CALAIS STREET

SHRUB (TYP.)

NIAGARA MOHAWK TEST STATION

NIAGARA MOHAWK VALVE

UNDER GROUND ELECTRIC

TOWER LEG BENCHMARK: ELEV=99.31'

APPROXIMATE LOCATION OF 72-Inch BURIED DRAIN CULVERT

CONRAIL (PENN CENTRAL RAILROAD) (PENNSYLVANIA ROAD)

15 0 30

GRAPHIC SCALE IN FEET

AECOM

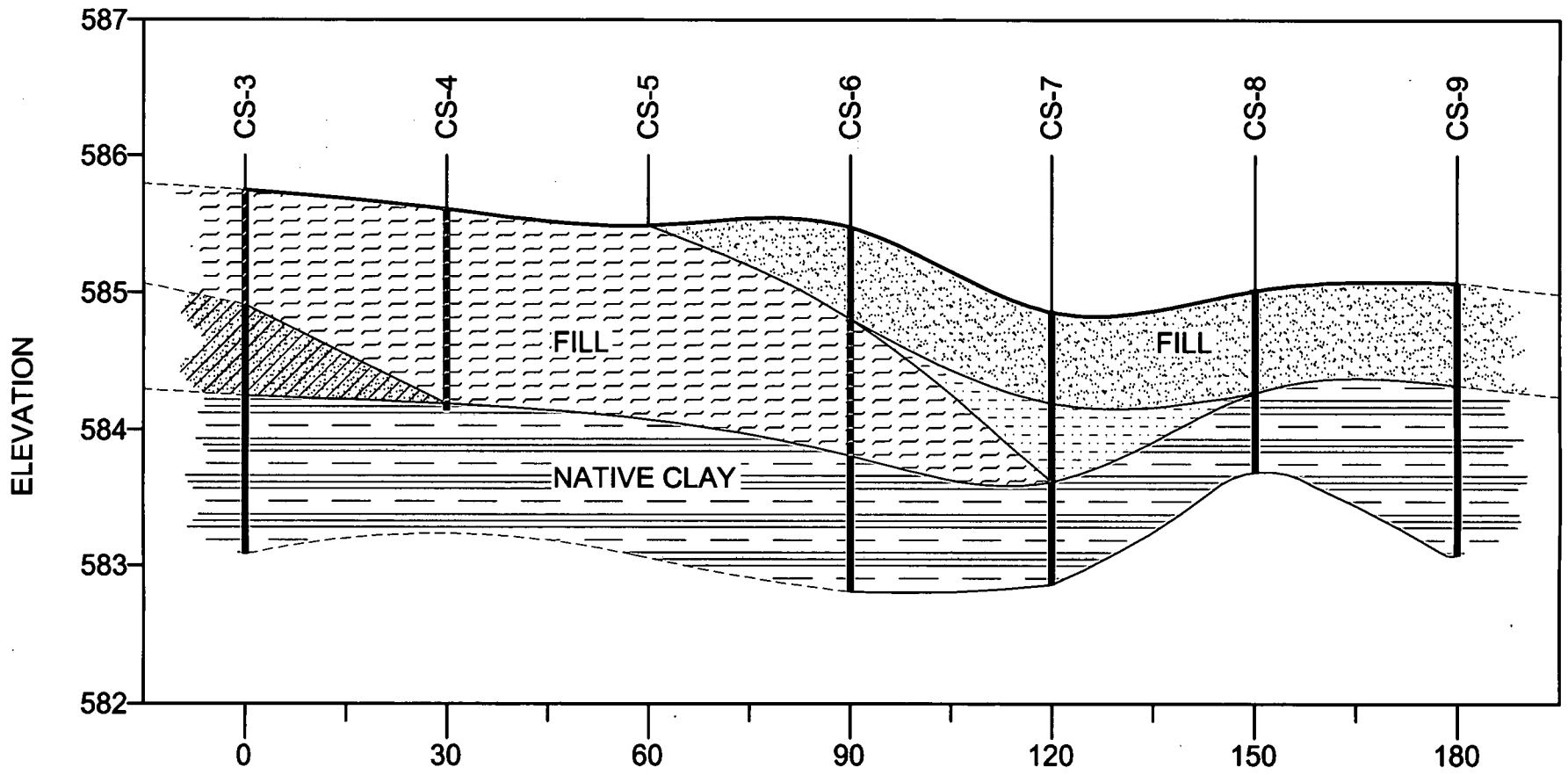
- 5' MAJOR CONTOUR
- 1' MINOR CONTOUR
- ELECTRICAL TRANSMISSION TOWER
- EDGE OF ASPHALT
- SWALE CENTERLINE
- FENCE LINE
- UNDERGROUND ELECTRICAL LINE
- APPROXIMATE SEWER LOCATION
- EDGE OF BUILDING
- GRAVEL COVER
- STONE EROSION PROTECTION
- SHRUB LOCATION

NATIONAL FUEL GAS
MINERAL SPRINGS ROAD
FORMER MANUFACTURED GAS PLANT

DATE: 06/20/2014 | DRWN: LT/BcV | 60250836.400.4.1

FENCE REPLACEMENT AREA AS-BUILT PLAN

FIGURE 4



LEGEND

CS-4 — INVESTIGATION POINT LOCATION IDENTIFICATION

SOIL HAND CORE LOCATION

NATIVE MATERIALS

SILTY CLAY

FILL MATERIALS

SILT

SILTY SAND

SILTY CLAY

SANDY SILT

AECOM

NATIONAL FUEL GAS
MINERAL SPRINGS ROAD
60250836.200

DATE: 05/14/2014 | DRWN: LT/BcV

SHALLOW BORING CROSS SECTION

FIGURE 5

Appendix A

Photo Log

PHOTOGRAPH LOG

Client Name: National Fuel Gas Distribution Corp.
Site Location: Mineral Springs Road Former MGP Site, West Seneca, New York
Project: Fence Replacement Area Corrective Measures
Project No.: 60250836

Photo 1: November 4, 2013. Facing North. Clearing western property boundary. Note black silt fence in place along downslope area. Silt fence is approximately located on property boundary.

Photo 2: November 6, 2013. Facing West. Visual impact excavation along western property boundary.

PHOTOGRAPH LOG

Client Name: National Fuel Gas Distribution Corp.
Site Location: Mineral Springs Road Former MGP Site, West Seneca, New York
Project: Fence Replacement Area Corrective Measures
Project No.: 60250836

Photo 3: November 4, 2013. Facing Northeast. Visual impact excavation, along western property boundary, starting to fill with water. Water eventually filled excavation to ground surface (see Photo 5).

Photo 4: November 5, 2013. Facing North. Drainage ditch excavation. Note water level in excavation from Photo 4.

PHOTOGRAPH LOG

Client Name: National Fuel Gas Distribution Corp.
Site Location: Mineral Springs Road Former MGP Site, West Seneca, New York
Project: Fence Replacement Area Corrective Measures
Project No.: 60250836

Photo 5: November 5, 2013. Facing Northeast. Gravel and drainage stone stockpile for backfill and cover. Plastic-covered stockpiles contain impacted materials.

PHOTOGRAPH LOG

Client Name: National Fuel Gas Distribution Corp.
Site Location: Mineral Springs Road Former MGP Site, West Seneca, New York
Project: Fence Replacement Area Corrective Measures
Project No.: 60250836

Photo 6: November 5, 2013. Facing South. Excavated drainage ditch. Water infiltrated into ditch.

PHOTOGRAPH LOG

Client Name: National Fuel Gas Distribution Corp.
Site Location: Mineral Springs Road Former MGP Site, West Seneca, New York
Project: Fence Replacement Area Corrective Measures
Project No.: 60250836

Photo 7: November 8, 2013. Facing South. Drainage ditch filled with clay and compacted with padfoot roller.

Photo 8: November 12, 2013. Facing north. Berm constructed with clay. Geotextile (Mirafi® 600X woven polypropylene) and gravel are spread on northern end of berm. Note roll of geotextile fabric placed on berm.

PHOTOGRAPH LOG

Client Name: National Fuel Gas Distribution Corp.
Site Location: Mineral Springs Road Former MGP Site, West Seneca, New York
Project: Fence Replacement Area Corrective Measures
Project No.: 60250836

Photo 9: November 13, 2013. Facing South. Berm completed with most of ornamental stone placed. Plants planted according to planting plan.

Photo 10: November 19, 2013. Facing South. Completed berm area with both fences installed.

PHOTOGRAPH LOG

Client Name: National Fuel Gas Distribution Corp.
Site Location: Mineral Springs Road Former MGP Site, West Seneca, New York
Project: Fence Replacement Area Corrective Measures
Project No.: 60250836

Photo 11: November 19, 2013. Facing North. Completed berm area with both fences installed.

Photo 12: November 6, 2013. Facing west. Transmission tower excavation bottom.

PHOTOGRAPH LOG

Client Name: National Fuel Gas Distribution Corp.
Site Location: Mineral Springs Road Former MGP Site, West Seneca, New York
Project: Fence Replacement Area Corrective Measures
Project No.: 60250836

Photo 13: November 6, 2013. Facing North. Transmission tower visual impacts located adjacent to transmission tower footer.

Photo 14: November 7, 2013. Facing North. Clay material backfilled into excavation west of tower. Note photo taken before clay was compacted.

PHOTOGRAPH LOG

Client Name: National Fuel Gas Distribution Corp.
Site Location: Mineral Springs Road Former MGP Site, West Seneca, New York
Project: Fence Replacement Area Corrective Measures
Project No.: 60250836

Photo 15: November 8, 2013. Facing East. Transmission tower excavation backfilled with clay and compacted with padfoot roller.

Photo 16: November 13, 2013. Facing Northeast. Known impacts area as identified in historic figure. Located north of transmission tower excavation. Note fill material used to grade fence sufficiently covers a portion of the area.

PHOTOGRAPH LOG

Client Name: National Fuel Gas Distribution Corp.
Site Location: Mineral Springs Road Former MGP Site, West Seneca, New York
Project: Fence Replacement Area Corrective Measures
Project No.: 60250836

Photo 18: November 14, 2013. Facing Northeast. Known impacts area covered with geotextile fabric. Gravel cover in progress.

Photo 18: November 14, 2013. Facing Northeast. Additional gravel cover area complete.

Appendix B

Laboratory Analytical Results

Appendix C

Soil Boring Logs

AECOM

Client: National Fuel - Mineral Springs
Project Number: 60255836
Boring Location: CS-3B

BORING ID: CS-3B

Sheet: 1 of 1

Drilling Method: Hand Auger
Weather: Overcast 40°F ; Breezy

Date/Time Started: 11/11/13 10:50

Logged By: E. Laity

Drilled By: Mike Reilly

Date/Time Finished: 11/11/13 11:15

Depth (ft)	Sample Number	Sample Type	Recovery (ft)	PID reading*	U.S.C.S	Lithologic Description	Lab Sample ID	Well Construction Details
1	0-8"		8"	0.0	ML	(0-8") wood chips (chipped Tree stump Top 1") Then f-m SANDY SILT med to dk Brown, little organics, little f-m gravel (Rounded - Trace to rust moist	NA (FILL)	NA last inch trace clay
2	8-16"		8"	0.0	CL			
3			8"	0.0	CL	(8-16") Top 2-3" SAA (Slough?) Then GREY Brown SILTY CLAY, Soft, Malleable, med to high plasticity - Roots moist		
4	16-24"							
5	24-32"		8"	0.0	CL	(16-24") Top few inches SAA Then grey and Rusty Brown lt. colored mottled Silty clay, moist, m. dense, m. plasticity (NATIVE) Roots		
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

(24-32") SAA w/ little slough top few inches.

B.O.B @ 32" bgs.

Fill in hole w/ clean clay

* Native estimated @ 18" bgs (1.5ft bgs)

END OF BORING @ ' below ground surface (bgs)

NOTES:
* units relative to isobutylene/methane span gas in parts per million (ppm)

Checked by: _____ Date: _____

AECOM

Client: National Fuel - Mineral Springs
Project Number: 60255836
Boring Location: CS-4B

BORING ID: CS-4B

Sheet: 1 of 1

Drilling Method: Hand Auger
Weather: Overcast 40°F Breezy

Date/Time Started: 11/11/13 11:25

Logged By: E. Lahl
Drilled By: Mike Reilly

Date/Time Finished: 11/11/13 11:35

Depth (ft)	Sample Number	Sample Type	Recovery (ft)	PID reading*	U.S.C.S	Lithologic Description	Lab Sample ID	Well Construction Details
0	0-8"		8"	0.0	ML	(0-8") 0-1" lite Tan Brown sandy silt, little f. gravel (Remediation Fill) 1-8" m. Brown SANDY SILT, wood pulp (NO Blue or green color - no odor), little f-m gravel, piece textile (FILL) Perched water @ 8" bgs., moist ~~wet~~.		
8	8-16"		8"	0.0	ML	(8-16") Same as above, no wood or debris m. Brown SANDY SILT, soft, wet		
16	16-24"		8"	0.0	CL	(16-24") Top inch SAA Then H. Brown/Grey and Rust Brown mottled SILTY clay m. dense, moist, med plasticity (NATIVE)		
24						B.O.B @ 24" (2ft)		
						Fill in hole w/ clean clay		
						* Native estimated @ 17" bgs.		

END OF BORING @ ' below ground surface (bgs)

NOTES:
* units relative to isobutylene/methane span gas in parts per million (ppm)

Checked by: _____ Date: _____

AECOM

Client: National Fuel - Mineral Springs
Project Number: 60250836
Boring Location: CS - 6B
Drilling Method: Hand Auger
Weather: Cloudy overcast 40°F Breezy
Logged By: E. Gaitly
Drilled By: Mike Reilly

BORING ID: CS - 6B
Sheet: 1 of 1
Date/Time Started: 11/11/13 11:40
Date/Time Finished: 11/11/13 11:50

Depth (ft)	Sample Number	Sample Type	Recovery (ft)	PID reading*	U.S.C.S	Lithologic Description	Lab Sample ID	Well Construction Details
1	0-8"		8"	0.0	SM	(0-8") 0-4" m-c Tan Brown Fill sand, loose, moist to wet (Reconditioning Fill) 4"-8" m-Dk Brown SILTY SAND, Rootlets & organics moist, loose.		
2								
3								
4	5-16		8"	0.0	SM/ML	8-16" m-dk Brown SANDY SILT, soft, moist to wet, little f gravel, little cinders, (FILL)		
5								
6	16-24		8"	0.0	CL	(16-24") 16"-20" SAA 20-24" Red Brown, Tan, & grey mottled SILTY CLAY, m. dense, med. plasticity moist, (NATIVE)		
7								
8								
9	24-32		8"	0.0	CL	(24-32") SAA - Top few inches slough & m-dk Brown SANDY SILT.		
0								
1								
2								
3						Fill in hole w/ clean clay		
4								
5						* Native estimated at 20" bgs		
6								
7								
8								
9								
0								

END OF BORING @ ' below ground surface (bgs)

NOTES:
* units relative to isobutylene/methane span gas in parts per million (ppm)

Checked by: _____ Date: _____

AECOM

Client: National Fuel. - Mineral Springs
Project Number: 60250836
Boring Location: CS-7B
Drilling Method: Hand Auger.
Weather: Cloudy/overcast ; 40°F ; Breezy
Light Rain started ~12:15
Logged By: E. Kitty
Drilled By: Mike Reilly

BORING ID: CS-7B
Sheet: 1 of 1
Date/Time Started: 11/11/13 11:55
Date/Time Finished: 11/11/13 12:15

Depth (ft)	Sample Number	Sample Type	Recovery (ft)	PID reading*	U.S.C.S	Lithologic Description	Lab Sample ID	Well Construction Details
1	0-8"		8"	0.0	SM/ ML	(0-8") 0-1" Tan Brown SAND (FILL) moist, Remediation Fill 1-8" m-dk Brown SILTY SAND T. f-m gravel, organics, Rootlets - looks like potting soil, loose, moist.		
5	8-16"		8"	0.0	ML/ CL	(8-16") wet - perched water - came up to 4" bgs. soft. Brown grey SILT, little clay - soft, wet. Bottom inch Becoming SILTY clay - mottled grey, Rust, 11Brown Mottled (NATIVE)		
9	16-24"		8"	0.0	CL	(16-24") mottled SILTY CLAY SAA (NATIVE)		

B.O.B @ 24" bgs

Fill in hole w/ clean clay

* Native estimated @ ~15" bgs

END OF BORING @ ' below ground surface (bgs)

NOTES:
* units relative to isobutylene/methane span gas in parts per million (ppm)

Checked by: Date:

AECOM

Client: National Fuel - Mineral Springs
Project Number: 60250836
Boring Location: CS-8B
Drilling Method: Hand Auger
Weather: H. Rain, Breezy, 40°F
Logged By: E. Laity
Drilled By: Mike Reilly

BORING ID: CS-8B
Sheet: 1 of 1
Date/Time Started: 11/11/13 13:10
Date/Time Finished: 11/11/13 13:20

Depth (ft)	Sample Number	Sample Type	Recovery (ft)	PID reading*	U.S.C.S	Lithologic Description	Lab Sample ID	Well Construction Details
0	0-8"		8"	0.0	ML	(0-8") m-dk Brown f-m SILTY SAND Roots, organics, soft, wet. Perched water 4" bgs		
8	8-16"		8"	0.0	CL	(8-16") 8-9" SAA, WET 9-16" Grey Brown Silty clay, few Rust and Tan mottes (NATIVE) low to med plasticity, wet.		
16						B.O.B @ 16" bgs		
						Fill in hole w/ clean clay		
						* Native estimated @ ~ 9" bgs.		

END OF BORING @ * below ground surface (bgs)

NOTES:
* units relative to isobutylene/methane span gas in parts per million (ppm)

Checked by: Date:

AECOM

Client: National Fuel - Mineral Springs
Project Number: 60250836
Boring Location: CS-9B

BORING ID: CS-9B

Sheet: 1 of 1

Drilling Method: Hand Auger
Weather: H. Rain 40°F, Breezy

Date/Time Started: 11/12/13 13:21

Logged By: E. Hill
Drilled By: Mike Reilly

Date/Time Finished: 11/11/13 13:32

Depth (ft)	Sample Number	Sample Type	Recovery (ft)	PID reading*	U.S.C.S	Lithologic Description	Lab Sample ID	Well Construction Details
1	0-8"		8"	0.0	SM/ML	(0-8)" M. Brown f-m SILTY SAND, loose, moist to wet. T. Black stained wood pulp @4" bgs, t. rootlets, t. m gravel sized stone.		
2								
3	8-16"		8"	0.0				
4					CL	(8-16") perched water 6" bgs		
5	16-24"		8"	0.0		8-9" DK Brown sandy soft, cindery sand dk Br.		
6					CL	13-16" last 3" mottled tan, Then SAA 10 - 13" Rust colored and grey clay / wet / saturated.		
7								
8						(16-24") Brown grey clay, med to high plasticity, few Rust and tan mottles (NATIVE)		
9								
10								
11						24" B.O.B (2' bgs)		
12								
13						Fill in hole w/ clean clay		
14								
15						* Native estimated @ ~13" bgs.		
16								
17								
18								
19								
20								

END OF BORING @ ' below ground surface (bgs)

NOTES:
* units relative to isobutylene/methane span gas in parts per million (ppm)

Checked by: _____ Date: _____