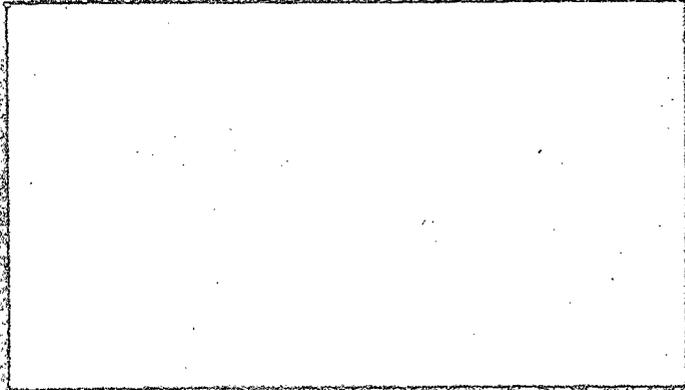


GZA
GeoEnvironmental, Inc.

*Engineers and
Scientists*

Superfund Records Center
SITE: Centredale
BREAK: 177
OTHER: 479470



SDMS DocID 479470

Superfund Records Center

SITE: _____

BREAK: _____

OTHER: _____



**COMPLETION OF WORK REPORT
ENERGY REPLACEMENT OF WATERLINE
CENTREDALE MANOR
NORTH PROVIDENCE, RHODE ISLAND**

PREPARED FOR:

Centredale Manor Associates
C/o Cornerstone Corporation
Westwood, Massachusetts

PREPARED BY:

GZA GeoEnvironmental, Inc.
Providence, Rhode Island

March 2011
File No. 33688

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**GZA
GeoEnvironmental, Inc.**

*Engineers and
Scientists*

March 8, 2011
File No. 03.0033688.00

Ms. Anna Krasko
EPA-New England, Region 1
5 Post Office Sq, Suite 100
Mail Code OSRR07-1
Boston, Massachusetts 02109-3918



Re: Completion of Work Report – Emergency Water Line Repairs
Centerdale Manor
2074 Smith Street
North Providence, Rhode Island

530 Broadway
Providence
Rhode Island
02909
401-421-4140
Fax: 401-751-8613
<http://www.gza.com>

Dear Anna:

GZA GeoEnvironmental, Inc. (GZA), on behalf of Cornerstone Corporation LLC, has prepared the attached Completion of Work Report that describes the work conducted at the Centerdale Manor facility in North Providence, Rhode Island.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read "Igor Runge". The signature is fluid and cursive.

Igor Runge, Ph.D., P.H.
Senior Project Manager

A handwritten signature in black ink, appearing to read "Michael A. Powers". The signature is fluid and cursive.

Michael A. Powers, P.E.
Consultant/Reviewer

IR/MAP:blm

CC: Louis Maccarone, II, RIDEM
Julie Wall, Centerdale Manor Associates

Enclosures: Completion of Work Report

J:\ENV\33688.ir\Work\Completion of Work Report\work plan cov let 1.doc

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An Equal Opportunity Employer M/F/V/H

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1.00 INTRODUCTION



This Completion of Work Report (CWR) has been prepared to describe the emergency repair (replacement) of a subsurface water line that supplies water to the Centredale Manor residential living facility located at 2074 Smith Street, North Providence, Rhode Island. It was prepared by GZA GeoEnvironmental, Inc. (GZA) on behalf of Centredale Manor Associates, the owner of the property. Centredale Manor is a United States Environmental Protection Agency (USEPA) listed Superfund Site; the subject building is located on a portion of that site. In forming the specific means and methods used in conducting the emergency repairs that this CWR describes, we relied upon information obtained from relevant prior studies; and discussions with personnel from USEPA, RIDEM and Site Resources LLC, the general contractor, and the owner of the facility. It is subject to the limitations provided in Appendix A.

1.10 PURPOSE

The purpose of the CWR is to provide the USEPA and RIDEM with an overview of how the repairs were performed and a description of what measures were taken to help protect human health and safety and the environment. It also outlines site conditions and obstacles encountered during the repair process and methods used to address these issues.

This report contains: health and safety (HASP) plans for the major contractors; a soil management plan; a groundwater dewatering plan (the plans); and a project schedule. We have also included a set of Field Reports that document daily activities at the site that were prepared by GZA's representatives that were on site during construction to observe compliance with the plans.

2.00 PROJECT DESCRIPTION AND BACKGROUND

The site is located at 2074 Smith Street in the Town of North Providence, Rhode Island. An area Plan is provided as Figure No. 1. The site is the subject of an on-going Remedial Investigation and Feasibility Study (RI/FS) known as the Centredale Manor Restoration Project (CMRP) Superfund site. The CRMP site consists of approximately nine acres and was formerly used for chemical manufacturing and drum recycling operations. It is currently occupied by the Brook Village and Centredale Manor apartment complexes. Centredale Manor and its two associated parking lots are located on the southern end of the parcel. The parcel also contains two constructed soils caps; Cap No. 1 is located on southern end of the parcel and Cap No. 2 is located on the eastern side of the parcel. The Woonasquatucket River forms the western boundary of the site and the former tailrace (now a predominantly dry drainage ditch). The area surrounding the site is largely developed and the property is serviced by municipal sewers and public water.



On or about 1 November 2010, the property owner, with the assistance of personnel from GEM Plumbing and Heating Services, Inc. (GEM), identified that the subsurface water line to the subject building was leaking. As a precaution, the residents were provided with bottled water. A subsequent test pit exploration, conducted by GEM on 15 November 2010 established that at least portions of the 8-inch cast iron pipe had been corroded. Visual observations indicated that the bottom of the pipe (at the test pit location, near the North end of the building) was severely corroded with a hole on the order of ½ inch in diameter being noted at one location, while the top and interior of the pipe were in good condition.

On or about 2 December 2010, an aboveground temporary water line connection was made from a fire hydrant on Steere Street (located east of the Centredale Manor building) to a connection located near the northwest corner of the building. The Providence Water Supply Board, citing concerns of damage to their system due to freezing, indicated the temporary system was to be removed before 1 January 2011.

The site is generally flat at approximately elevation 50 feet NGVD. The water table near the building was measured at depths of 2.5 to 3.8 feet below ground surface in late November. The new water supply line would require at least 4.5 feet of cover for frost protection. Therefore, portions of the required trenching would likely be at or a few feet below the water table.

Soils excavated during the repair were properly managed on the property. With the approval of USEPA and RIDEM (given at the on-site meeting of 10 December 2010), the project team elected to the extent possible, to place excavated soils back in the utility corridor created by construction of the new waterline. As a contingency plan, a designated area located in the Cap 1 Area (see Figure 2) was established to receive trench spoils that could not be placed in the utility corridor. Also, as a fallback position, it was agreed at the 10 December meeting that if trenching became too difficult, a temporary insulated above ground pipe would be installed from south of the location where the water line metering and shutoff controls are located ("Hot Box") to the building. As it turned out, this temporary measure was not necessary. Also, utilization of Cap 1 Area was also not necessary.

To accomplish site dewatering, well points were installed approximately six feet on center and driven to a depth of 8 to 12 feet along the entire length of the pipe. Extracted groundwater, as agreed to by RIDEM and USEPA, was treated by filtration followed with adsorption by granular activated carbon before being discharged to a location east of the site in the former tailrace. The discharge was regularly monitored for turbidity levels.

To limit access, an eight-foot high chain link fence was erected around the perimeter of the work area. Appropriate signage was provided to warn area residents of potentially hazardous conditions.

3.00 PROJECT ELEMENTS

For the limited purpose of this report, the emergency repair/replacement project is described as having six major elements:



- Protection of safety and health for facility residents and construction personnel during duration of the project;
- Construction of a temporary water line;
- Sediment and erosion control of disturbed areas;
- Construction dewatering as required to lower groundwater levels, to facilitate the trench excavation and laying of the new pipe;
- Trench excavation; and
- Management of soils generated by construction.

3.10 HEALTH AND SAFETY PLAN

Health and Safety Plans (HASP) were developed by each of the subcontractors working on the project; GZA's plan is attached in Appendix B. The HASPs were implemented during the duration of the project. The HASPs were designed to comply with Occupational, Safety, and Health Administration (OSHA) requirements including those for Hazardous Waste Operations and Emergency Response (HAZWOPER) activities (CFR 29, Section 1910.120). Specific requirements regarding personal protection equipment were coordinated with personnel from the Rhode Island Department of Environmental Management (RIDEM).

GZA did not attempt to resolve inconsistencies between HASPs. We observed no activities that violated provisions of GZA's HASP.

As part of the GZA HASP, one downwind receptor location was monitored for fugitive dust levels during project working hours. The monitoring device was located on a daily basis approximately 50 to 100 feet downwind of the excavation. The meter was routinely monitored by GZA field staff. The trench was also periodically monitored for volatile organic compounds. The results of the monitoring found no evidence of fugitive emissions (see daily field reports in Appendix E).

3.20 TEMPORARY WATER LINE

A temporary water line was constructed to service the Centredale Manor facility for the duration of the construction project. This water line was located completely above ground and originated from a fire hydrant along a main water line at the end of Steere Street (east of the site). The water line crossed the former tailrace, routed around the southern side of the facility, and connected into the facility on the front side through an existing doorway. There was no penetration of soil on the site during installation of this line.

Construction of the water line and subsequent water quality testing requirements were coordinated with personnel from the Providence Water Supply Board and the Town of North Providence. Temporary fire protection requirements were coordinated with officials from the North Providence Fire Department.



Freeze protection became an issue during the duration of the project, hence, the urgency to complete the project as soon as practicable was always present. One freeze protection precaution measure instituted was to allow water in the above ground temporary water line to continually flow, albeit at a low flow rate, and discharge into the facility's sewer system. No large scale discharges were required.

The temporary water line was disconnected from the building and removed from the site when the newly installed water line was placed into service, on or about 22 December 2010.

3.30 SEDIMENT AND EROSION CONTROLS

Erosion and Sedimentation controls were erected around the entire perimeter of the work area, including soil Cap No. 1, the contingency area selected to receive soils excavated during the project. No excavation spoils were transported to this contingency area; all spoils were returned back to the excavated trench. Controls were erected in accordance with the *Rhode Island Soil Erosion and Sediment Control Handbook* and consisted of haybales and sediment fences. Daily operations included inspections and repairs of these controls. Despite heavy rains on 12 and 13 December, all of the haybales and sediment fences worked well; there was no migration of sediment off-site observed by GZA field staff.

Erosion controls were removed from portions of the site during the week of 27 December 2010. All sediment and erosion control measures surrounding the disturbed areas will remain until early spring 2010 when final grading and seeding occur.

3.40 GROUNDWATER DEWATERING AND TREATMENT

Review of relevant prior studies indicated that "Groundwater contamination at the CRMP site is not pervasive or widespread" (Remedial Investigation Centerdale Manor Restoration Project Superfund Site (Battelle, June 2005). Nonetheless, GZA obtained water samples from two existing wells near the proposed excavation site and tested for several common constituents including PCPs, VOCs, semiVOCs, and PP-13 metals. Analytical results are available in Appendix C. In general, results for all constituents were reported as non-detected or at low concentrations. Water levels at these wells were observed to be between 2.5 and 3.8 feet below ground surface (bgs) in late November 2010. Dewatering was deemed necessary by the contractor.

The dewatering vendor, Rain For Rent, directed the installation and operation of the well point dewatering system. The system consisted of approximately 160 well points, typically spaced at 6 feet on center on the west side of the trench. The well points were

installed using a percussion rock drill to reduce the amount of material brought to the surface during the operation. Polyethylene sheeting was placed on the ground at each well point location prior to drilling to capture any drill spoils. Spoils and sheeting from each location were placed in polyethylene bags and stored in a covered container on site.



An above ground header system was installed that connected the individual wellpoints to a pump system through polyethylene swing arms. Shut off valves were provided at one hundred-foot intervals to provide the option of turning off areas. The header system was connected to a pump to withdraw water from the well points.

The total wellpoint run was approximately 1,000 feet. Groundwater pumped from the wellpoints was directed to a treatment system, consisting of one 18,000 gallon fractionation (frac) tank, two 10-micron filter cartridges arranged in parallel, and a granular activated carbon (GAC) system using three 2,000-pound vessels arranged in parallel. In an effort to draw as little water as possible, only approximately 300-foot sections were pumped at any one time. As agreed to by USEPA and RIDEM, water was discharged to the tailrace east of the utility corridor and was monitored for turbidity on a regular basis. The extraction rate was typically in the range of 20 to 40 gallons per minute (gpm), based on visual observations.

3.50 EXCAVATION AND MANAGEMENT OF SOILS

The original 8-inch, steel water line ran along a 20-foot wide grassed easement immediately east of the driveway to the facility from Smith Street to the front of the facility (approximately 1,000 feet). The easement along the 1,000-foot corridor contained an asphalt sidewalk. The general plan consisted of excavation of a trench over the existing waterline, of sufficient width and depth to provide safe access and provide necessary freeze protection for the new water line. This amounted to a trench with depths ranging from 3.5 to 5 feet. In several portions of the trench the old waterline was observed. A trench box was used in the deeper sections to support trench walls.

We estimated that approximately 1,700 cubic yards of soil would be excavated during trenching. The original plan was to backfill the trench with "clean" off-site fill (creating a clean corridor) and place the trench spoils in the Cap 1 Area. Plans for the temporary capping are provided in Appendix D. Because of the volume of spoils, concerns over issues of flooding (compensatory storage) and uncertainties associated with costs of temporary storage of trench spoils (the final USEPA remedy has not been selected) the team elected to backfill with compacted trench spoils. This proved effective in no small part because the soils encountered were mostly sand and gravel.

The soils along the entire corridor were managed as if contaminated with identified contaminants of concern. Excavations were made in the dry. The excavated soils were placed and compacted in or adjacent to the trench. Several small tree roots encountered during trenching were returned to the trench during the backfilling process. None of the excavated trench spoils were transported off site. The only materials that left the site were

impervious concrete/asphalt debris from the existing sidewalk. This debris was hauled off-site to a construction and demolition debris facility.

As a contingency, a construction pad was established at the entrance to Cap 1 Area, which was to be used if trench spoils were to be transported there. The construction pad would serve as the equipment decontamination area. However, as the project progressed, all trench spoils were returned to the excavation and the Cap 1 Area and associated decontamination area were never used. A small decontamination area was constructed along a portion of the trench excavation consisting of a polyethylene lined depression graded to slope toward the trench. This area was the last to be covered up during the backfill operation.



During the backfilling operation, all trench spoils were returned to the trench first. A layer of textile fabric was placed over the trench spoils and a layer of clean fill was placed over the fabric. As requested by RIDEM, a minimum of 12 inches of clean material was required as a final cover over the fabric. During the final grading and seeding operation in early spring 2011, top soil of sufficient depth will be spread over the clean fill to ensure a 12-inch cover. The clean fill used during backfilling was stockpiled on a portion of the site prior to commencement of trench excavation. The clean fill was sampled and subject to analytical testing for common contaminants (arsenic, RCRA 8 metals, TPH, PCB, VOC, and PAH) prior to use. Analytical results are available in Appendix C. In general, results for all constituents were reported as non-detected or at low concentrations.

Further information on soil management is available in the attached Soil Management Plan (Appendix E).

3.6 TOPOGRAPHIC ELEVATION SURVEY

GZA staff conducted a topographic elevation survey prior to commencement of field activities within the anticipated trench corridor. As requested by RIDEM and USEPA, we will conduct another elevation survey when final cover placement (topsoil/loam), grading, and seeding has been completed in the Spring of 2011 and prepare a drawing with final elevations and cap thickness along the trench.

4.00 PROJECT SCHEDULE

Progress of this project was observed by GZA field staff. Our staff were on-site whenever there were construction activities and during times of inclement weather. In an effort to expedite progress, project activities were conducted 24-hours per day during the period 10 to 14 December. To accomplish this, the project team received written authorization from the Town of North Providence to work on a 24-hour basis. Field Reports developed by GZA field staff are available in Appendix F. Selected photographs of site activities are available in Appendix G. An overview of the project schedule follows:



November 29-December 3, 2010

- Install temporary water line from Steere Street and install temporary fire hydrant.
- Chlorinate water line, flush, and obtain water sample.
- Tie in temporary water line, coordinate with Fire Department and PWSB.
- Excavate property line at Smith Street.

December 4-6, 2010

- Install erosion controls throughout trench area and Cap 1 Area.
- Install temporary fencing.
- Delivery of construction materials, pipes, etc.
- Begin well point installation for dewatering.

December 7-9, 2010

- Well point and manifold system installation.
- Install monitoring wells.
- Cut & Cap existing water line.
- Remove meter pit and meter house.
- Remove sidewalk.
- Install decontamination area.

December 10-17, 2010

- Complete dewatering well point installation.
- Install dewatering treatment system.
- Commence dewatering and turbidity testing.
- Commence air monitoring.
- Commence excavation of trench and installation of new water lines.
- Lay textile fabric.

December 18-21, 2010

- Complete trenching and waterline installation.
- Connect new water line to building, test water, and begin flow.
- Commence decontamination of equipment.
- Remove dewatering system.
- Remove temporary water line.
- Complete backfill with clean material.

December 22-23, 2010

- Removal of sediment and erosion controls (except around trench).
- Paved areas cleaned.

January 17, 2011

- Removal of granular activated carbon vessels.

It bears noting that beginning on December 26, a series of snow storms has left a substantial covering of snow and ice at the site. Coupled with below freezing temperatures, removal of sediment and erosion control measures surrounding Cap 1 Area and final grading, top soil application, and seeding has not been possible. These activities will be completed in early spring 2011 as site and weather conditions allow.



5.00 COMMUNICATIONS

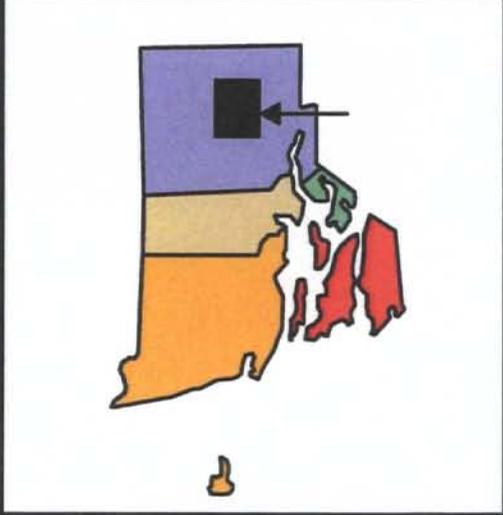
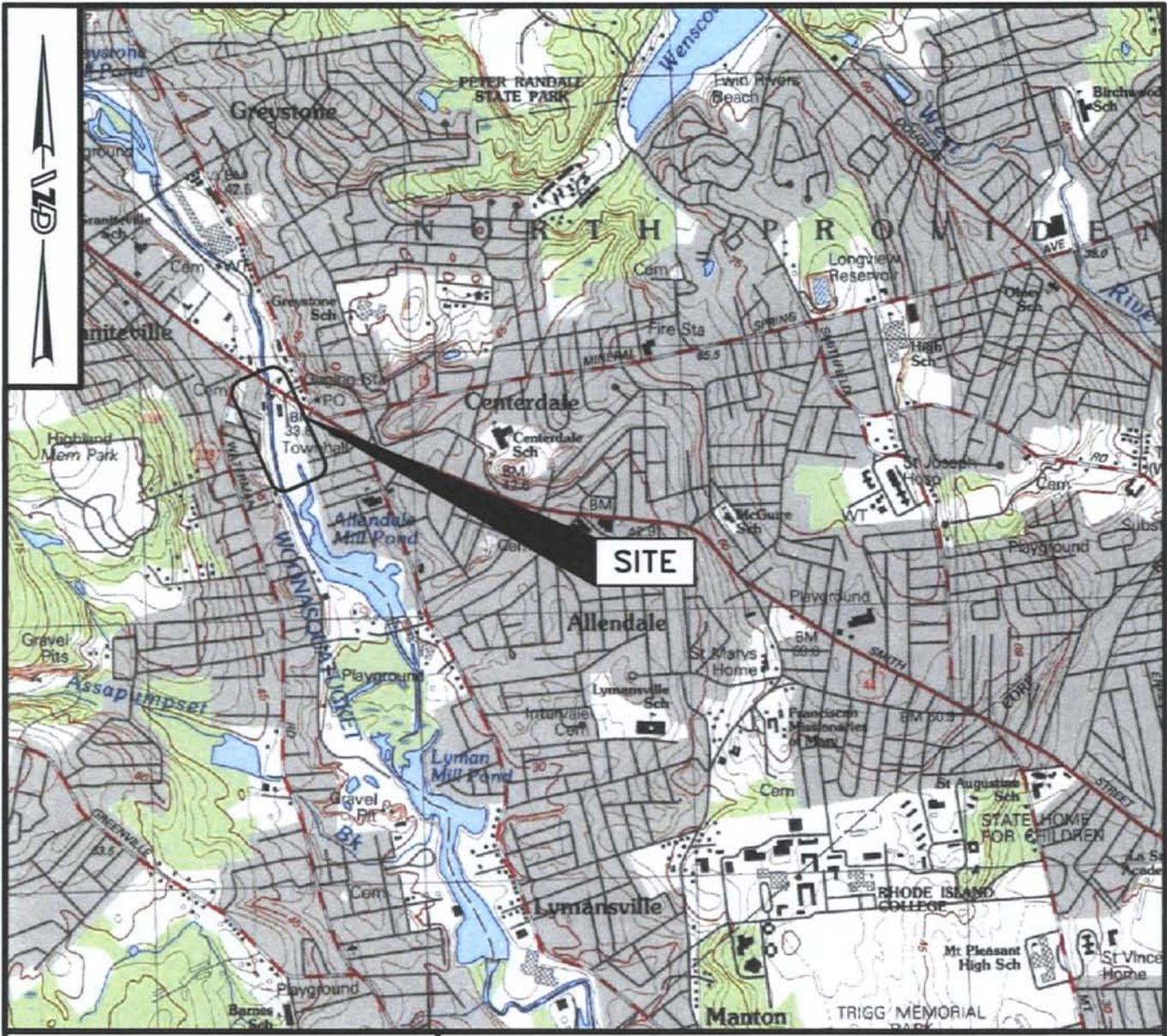
GZA's principal point of contact during the duration of the project was Igor Runge. GZA's communications with Centredale Manor Associates was with Julie Wall. All site work was orchestrated by Mark DePasquale, owner of Site Resources LLC.

Any inquires made of GZA from outside the site repair team were directed to Centredale Manor Associates.



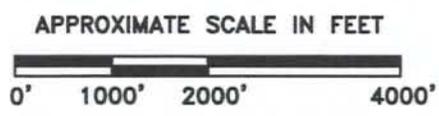
FIGURES

© 2010 - GZA GeoEnvironmental, Inc. GZA-J:\ENV\33688\i\CAD\GZA DWGS\33688 LOCUS PLAN.dwg [LOCUS] January 28, 2011 - 1:20pm michael.cubin



**BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP:
RHODE ISLAND (1957*) *PHOTO REVISED 1979 & 1975**

DIGITAL TOPOGRAPHIC MAPS PROVIDED BY MAPTECH. INC.
CONTOUR ELEVATIONS REFERENCE NGVD 29,
CONTOURS ARE SHOWN IN FEET AT 10 FOOT INTERVALS



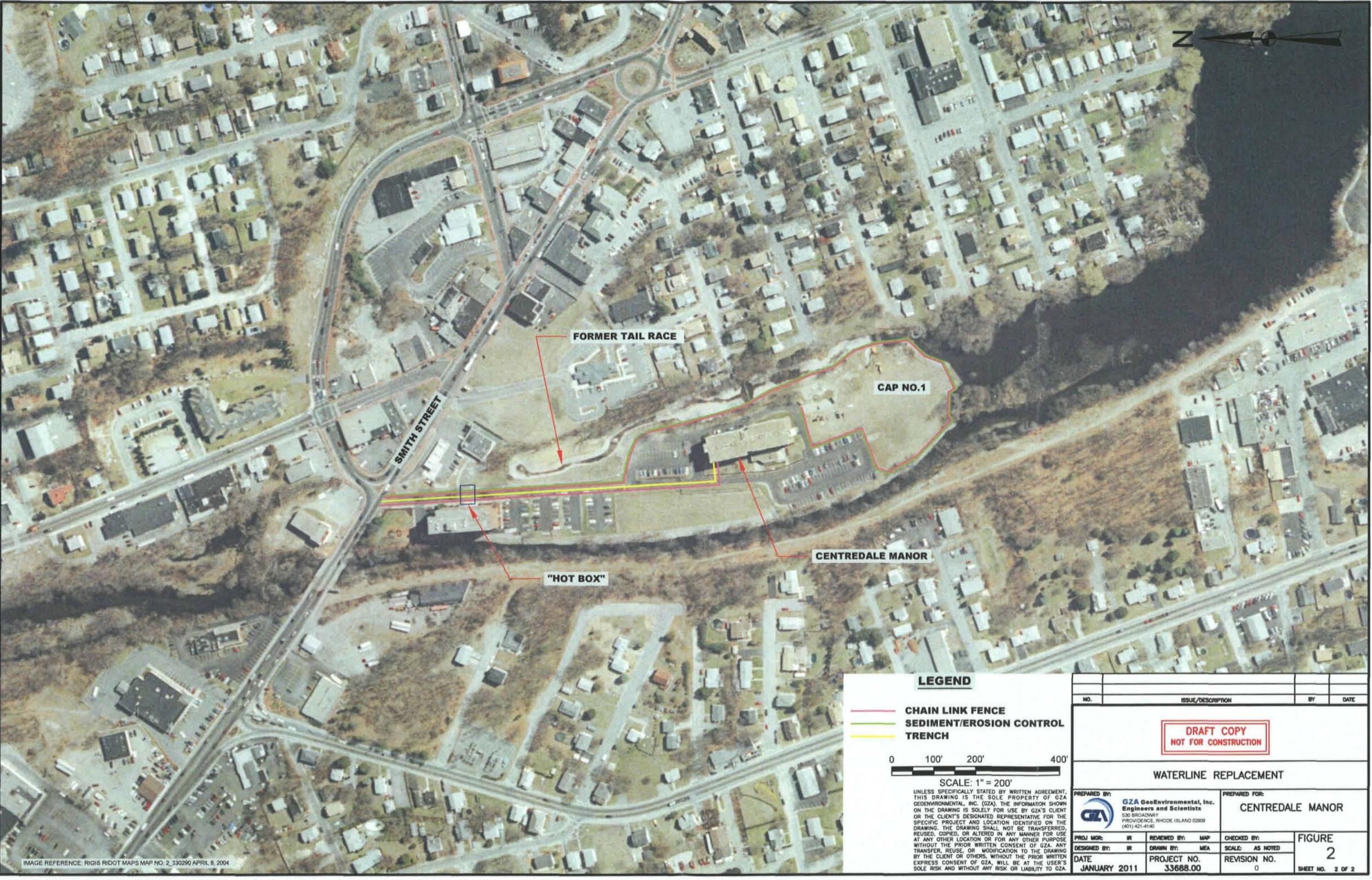
**CENTREDALE MANOR
2074 SMITH STREET**

NORTH PROVIDENCE, RHODE ISLAND

LOCUS PLAN

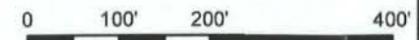
JANUARY 2011

FIGURE NO. 1



LEGEND

- CHAIN LINK FENCE
- SEDIMENT/EROSION CONTROL
- TRENCH



SCALE: 1" = 200'

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

NO.	ISSUE/DESCRIPTION	BY	DATE
DRAFT COPY NOT FOR CONSTRUCTION			
WATERLINE REPLACEMENT			
PREPARED BY:  GZA GeoEnvironmental, Inc. Engineers and Scientists 530 BRADWAY PROVIDENCE, RHODE ISLAND 02909 (401) 421-4140		PREPARED FOR: CENTREDALE MANOR	
PROJ MGR: IR DESIGNED BY: IR DATE: JANUARY 2011	REVIEWED BY: MAP DRAWN BY: MEA PROJECT NO. 33688.00	CHECKED BY: SCALE: AS NOTED REVISION NO. 0	FIGURE 2 SHEET NO. 2 OF 2

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APPENDIX A

LIMITATIONS

APPENDIX A LIMITATIONS

This Completion of Work Report (CWR) was prepared for Centredale Manor Associates for their water line repair project on 2074 Smith Street in North Providence, Rhode Island by GZA GeoEnvironmental Inc. It was prepared for the purposes identified in Section 1.10 of the CER. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not identified in our agreement with Centredale Manor Associates, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA or Centredale Manor Associates.

Our services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made.





APPENDIX B

HEALTH & SAFETY PLAN (GZA ONLY)

GZA SITE-SPECIFIC HEALTH, SAFETY & ACCIDENT PREVENTION PLAN

1. CLIENT/SITE/PROJECT INFORMATION		
Client: Centredale Manor Associates; c/o Cornerstone Corporation		
Site Address: 2074 Smith Street, North Providence, RI		
Site Description: Water line replacement 1,000 feet in length between Smith St. and Centredale Manor		
Job/Project #: 33688	Estimated Start Date: 11/18/10	Estimated Finish Date: 12/31/2010

2. EMERGENCY INFORMATION/CONTINGENCY PLAN		
Hospital Name & Address: Rhode Island Hospital 593 Eddy Street, Providence	Hospital #: 401-444-4000	
Directions and Street Map of Route to Nearest Hospital Attached: <input checked="" type="checkbox"/> Yes (required)		
Fire #: 911	Ambulance #: 911	Police #: 911
Other Emergency Contact: see below		Phone #:
Location of Nearest Phone: Cell phone to be maintained on-Site. Check signal strength upon arriving at Site.		
Site Specific Emergency Preparedness/Response Procedures/Concerns: Site is listed with RIDEM as a result of elevated Dioxins in soils.		

Contingency Plan			
If unexpected conditions are encountered during the course of soil excavation, such as encountering unexpected tanks, drums, etc., the Contractor shall fall back and immediately halt Site work, cordon off the area and contact GZA at the number listed below. GZA will contact Client and, if so authorized, RIDEM. No work shall proceed until an appropriate course of action can be determined.			
The following provides a listing of points of contacts in the event of an unexpected incident involving soil and/or groundwater, or other significant emergency or incident:			
Firm	Contact	Address	Phone Number
GZA GeoEnvironmental, Inc.	Igor Runge Michael Powers	530 Broadway Providence, Rhode Island 02909	401-421-4140 401-374-3468 (cell)
Cornerstone Corporation (Client)	Julie Wall	400 Blue Hill Drive, Suite 2-C Westwood, MA 02090	401-569-2221
RIDEM 24 Hour Emergency Response			401-222-3070

3. SUB-SURFACE WORK	
IMPORTANT! For subsurface work, verify that underground utility location process has been completed before proceeding with underground explorations.	
Have Necessary Underground Utility Notifications For Subsurface Work Been Made?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Yet to be conducted <input type="checkbox"/> Not Applicable DigSafe to be contacted by contractor – GZA to confirm
Specify Clearance Date & Time, Dig Safe Clearance I.D. #, And Other Relevant Information:	

4. SCOPE OF WORK	
Any CONFINED SPACE entry? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If yes, use Site Specific H&S Plan/Confined Space Entry Permit for that portion of the work	Any INDOOR fieldwork? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If yes, explain
General project description, and phase(s) or work to which this H&S Plan applies.	Excavation of dioxin/PCB impacted soils. Turbidity analysis of groundwater treatment discharge.

Specific Tasks Performed by GZA:	Observe excavation and groundwater dewatering, and provide on-Site health and safety management of dioxin impacted soil.
Concurrent Tasks to be Performed by GZA Subcontractors:	None
Concurrent Tasks to be Performed by Others:	Earth work operations – Site Resources; Groundwater dewatering – Rain for Rent; Water line connections – GEM Plumbing

IMPORTANT! Subcontractors may use GZA's plan for general informational purposes only. Each subcontractor is responsible for determining the adequacy and applicability of the information herein to its own activities on site. Each subcontractor engaged by GZA is responsible for all matters relating to the H&S of its personnel and equipment in performance of its work, as well as obligations for compliance with H&S regulations applicable to its work. GZA subcontractors are subject to GZA's review, recommendations, and contractual requirements pertaining to H&S.

- 5. DOCUMENTATION TO BE COMPLETED**
- **Site Health and Safety Briefing/Site Safety Orientation Record** (Attachment A) must be completed prior to the initiation of on-site activities and at least once per week thereafter until the completion of GZA on-site activities. For some projects, daily safety briefings may be appropriate.
 - **Site Inspection Log** (Attachment B) must be completed at the initiation of on-site activities and at least once per week thereafter until the completion of GZA on-site activities.
 - **Incident Analysis Form** (Attachment C) must be completed for each accident, injury, incident, near miss.

6. SITE-SPECIFIC OVERVIEW OF H&S HAZARDS/SAFETY MEASURES
(Based on Hazard Assessment, Section 11)

Chemical Exposure Hazards, Safety Measures, Decon Procedures: Establish exclusion & decon zones for excavation of contaminated soils (using cones or caution tape, as appropriate). Contaminants of concern identified in soils at the Site include primarily dioxin and PCBs, as well as PAHs, lead, arsenic, mercury and selenium. Possible VOCs also present (BTEX, chlorinated). Based on previous studies, concentrations are anticipated to be present as residual contaminants at low concentrations.

During invasive excavation activities, dust and VOC monitoring of the breathing zone and use of action levels to be performed in the work area as indicated in Section 8.0 Use of respiratory protection may not be necessary (as long as dust and VOCs can adequately be controlled below the established action level, using water spray if necessary), however workers should be prepared to wear respirators in case action level is exceeded. If action level is repeatedly exceeded, or if the general nature of the work is such that intermittent exposure to dust is unavoidable during handling of samples, movement of equipment, stockpiling of soil, etc., then complete the excavation/ stockpiling work using Level C (respirator) protection. Additional personal protective equipment (gloves, boot covers, tyvek suits), to be used as appropriate to control potential exposure to contaminants through direct contact. Hand washing facility to be present and used by all employees prior to eating (to prevent incidental ingestion of contaminants).

Provide appropriate provisions for decon (disposal container for disposable PPE, equipment washing, hand washing, etc.).

Physical Hazards and Associated Safety Measures: : Slip, trip and fall scenarios, working with heavy machinery, working around open excavations. Make eye contact with operator before entering immediate work area/swing radius of equipment. Field personnel to be aware of excavator activities at all time, as well as the dangers posed by working too close to the edge of an open excavation. Wear high-visibility vest at all times. During low light hours, adequate portable lighting must be applied to all site areas which involve all levels of operations.

General H&S Comments: Verify Emergency Contact Procedure (cell phone signal) upon first arrival. Work to be performed in modified D (as needed, discussed above), or Level C to include at a minimum, steel toe work boots, eye protection, hard hat, high-visibility vest, hearing protection, disposable boot covers. Additional equipment for Levels Modified D or C (respirators, gloves, coveralls, etc.) to be used as discussed

above.

7. HEALTH AND SAFETY EQUIPMENT AND CONTROLS

AIR MONITORING INSTRUMENTS (ensure instruments are calibrated)

- PID Type: X Lamp Energy: 10.6 eV
- FID Type:
- Carbon Monoxide Meter
- Hydrogen Sulfide Meter
- O₂/LEL Meter
- Particulate (Dust) Meter
- Calibration Gas Type
- Others:

Discuss/Clarify, as Appropriate:

OTHER H&S EQUIPMENT & GEAR

- Fire Extinguisher
- Caution Tape
- Traffic Cones or Stanchions
- Warning Signs or Placards
- Decon Buckets, Brushes, etc.
- Portable Ground Fault Interrupter (GFI)
- Lockout/Tagout Equipment
- Ventilation Equipment
- Others: 1) Make sure hand washing capability is present for all workers.
2) Equipment for dust control – water spray

Discuss/Clarify, as Appropriate:

PERSONAL PROTECTIVE EQUIPMENT

- Respirator Type: Half or Full Face APR
- Resp-Cartridge Type: P-100 (magenta), if needed
- Hardhat
- Outer Gloves Type: Leather
- Inner Gloves Type:
- Steel-toed boots/shoes
- Coveralls Type: Tyvek, as needed
- Outer Boots Type: Disposable boot covers
- Eye Protection with side shields
- Face Shield
- Traffic Vest
- Personal Flotation Device (PFD)
- Fire Retardant Clothing
- EH (Electrical Hazard) Rated Boots, Gloves, etc.
- Noise/Hearing Protection
- Others:

Discuss/Clarify, as Appropriate: Workers to be prepared to wear respiratory protection; use air purifying respirators (full or half face), with magenta (P-100 cartridges).

8. AIR MONITORING ACTION LEVELS Air Monitoring Applicable, See Below. Air Monitoring Not Applicable

Make sure air monitoring instruments are in working order and have been calibrated prior to use. Depending on project-specific requirements, periodic field calibration of instruments may be necessary during day of instrument use.

A. ACTION LEVELS FOR INHALATION HEALTH HAZARDS (Action levels are for sustained worker breathing zone concentrations)

Air Quality Parameters (Check all that apply)	Remain in Level D or Modified D	Response Actions for Elevated Airborne Hazards
<input checked="" type="checkbox"/> VOCs	0 to 10 ppm	10 ppm to 50 ppm: Proceed to Level C, or Ventilate, or Discontinue Activities > 50 ppm: Discontinue Activities
<input type="checkbox"/> Carbon Monoxide	0 to 35 ppm	At greater than 35 ppm, exit area, provide adequate ventilation, or proceed to Level B, or discontinue activities.
<input type="checkbox"/> Hydrogen Sulfide	0 to 10 ppm	At greater than 10 ppm, exit area, provide adequate ventilation, or proceed to Level B, or discontinue activities
<input type="checkbox"/> Oxygen	Greater than 19.5%	At 19.5% or below, exit area, provide adequate ventilation, or proceed to Level B; or discontinue activities
<input checked="" type="checkbox"/> Dust	0 to 2.5 mg/m ³	If <u>sustained</u> breathing zone dust levels exceed 2.5 mg/m ³ for sustained periods, use of water spray as necessary to reduce airborne dust levels, or workers shall don level C respiratory protection. If action level is exceeded intermittently, proceed to level C and complete the excavation work using Level C protection (regardless of air monitoring data).

B. ACTION LEVELS FOR EXPLOSIVE ATMOSPHERIC HAZARDS

Check below if Applicable		Response Actions for Elevated Airborne Hazards
<input type="checkbox"/>	Oxygen	Verify presence of adequate oxygen (approx. 12% or more) before taking readings with LEL meter. If oxygen levels are below 12%, LEL meter readings are not valid.
	LEL	Less than 10% - Continue working, continue to monitor LEL levels Greater than 10% - Discontinue work operation and immediately withdraw from area. Resume work activities ONLY after LEL readings have been reduced to less than 10% through passive dissipation, or through active vapor control measures.

C. SPECIAL INSTRUCTIONS/COMMENTS REGARDING AIR MONITORING (IF APPLICABLE)

Measure breathing zone dust concentrations during active earth moving and/or dusty conditions.

9. H&S TRAINING/QUALIFICATIONS FOR FIELD PERSONNEL

<input checked="" type="checkbox"/> Project-Specific H&S Orientation Required for All Projects, All Field Staff	<input type="checkbox"/> Fall Protection Training
<input checked="" type="checkbox"/> OSHA 40 Hr. Hazwoper/8 Hr. Refreshers	<input checked="" type="checkbox"/> Trenching & Excavation
<input type="checkbox"/> Hazard Communication (for project-specific chemical products)	Others:
<input type="checkbox"/> First Aid/CPR (at least one individual on site)	<input type="checkbox"/> Fit tests within previous 12 months for individuals who wear respirators
<input checked="" type="checkbox"/> General Construction Safety Training	<input type="checkbox"/>
<input type="checkbox"/> Lockout/Tagout Training	<input type="checkbox"/>
<input type="checkbox"/> Electrical Safety Training	<input type="checkbox"/>
<input type="checkbox"/> Bloodborne Pathogen Training	<input type="checkbox"/>
Discuss/Clarify, as needed: NA	

10. PROJECT PERSONNEL - ROLES AND RESPONSIBILITIES

GZA ON-SITE PERSONNEL:		
Name	Project Title/Assigned Role	Telephone Numbers
Neal Westkott	Site Supervisor	work: 401-427-2745 cell: 401-787-6804
Neal Westkott	Site Safety Officer	work: 401-427-2745 cell: 401-787-6804
Neal Westkott	First Aid Personnel	work: 401-427-2745 cell: 401-787-6804
<p>Site Supervisors and Project Managers (SS/PM): Responsibility for compliance with GZA Health and Safety programs, policies, procedures applicable laws and regulations is shared by all GZA management and supervisory personnel. This includes the need for effective oversight and supervision of project staff necessary to control the Health and Safety aspects of GZA on-site activities.</p> <p>Site Safety Officer (SSO): The SSO is responsible for implementation of the Site Specific Health and Safety Plan.</p> <p>First Aid Personnel: At least one individual designated by GZA who has current training and certification in basic first aid and cardiopulmonary resuscitation (CPR) must be present during on-site activities involving multiple GZA personnel.</p>		
OTHER PROJECT PERSONNEL:		
Name	Project Title/Assigned Role	Telephone Numbers
Michael Powers	Principal-in-Charge	Work: 401-427-2704 Cell: 401-374-2320
Igor Runge	Project Manager	Work: 401-427-2710 Cell: 401-374-3468
Mark Dalpe	Health and Safety Coordinator (HSC)	Work: 401-427-2716 Cell: 401-374-2305
Mark P. Malchik	GZA Director of Health and Safety	Work: 781-278-5747 Cell: 781-760-6421 Home: 978-287-0591
Principal-in-Charge: Responsible of overall project oversight, including responsibility for Health and Safety.		

Project Manager: Responsible for day-to-day project management, including Health and Safety.
Health and Safety Coordinator: General Health and Safety guidance and assistance.
Director of Health and Safety: H & S technical and regulatory guidance, assistance regarding GZA H&S policies and procedures.

11. HAZARD ASSESSMENT (CHECK ALL THAT APPLY)

A. GENERAL FIELDWORK HAZARDS: (Investigative, remedial or construction-related work; environmental, geological, geotechnical, geo-civil, wetland/upland/woodland work, etc.)

- Confined Space Entry – USE CONFINED SPACE H&S PLAN/ENTRY PERMIT (tanks, vessels, tunnels, misc. equipment enclosures)
- Enclosed Spaces (Non-Confined Spaces) – (trenches, basements, sub-basements, attics)
- General Housekeeping, Slip/Trip/Fall Hazards
- Unsanitary/Infectious Hazards (wastewater, sewage, landfill, medical waste, blood borne pathogens)
- Poisonous Plants, Plant Allergies
- Biting/Stinging Insects, Spiders, Lyme Disease
- Animal Hazards (snakes/rats/vermin, feral dogs/cats, urban dogs, wild animals, etc.)
- Water/Wetland Hazards (boating, barge, raft, wading, diving, ice/thin ice, hazardous currents, shoreline/tidewater hazards, dam release/flash floods, river/stream crossing, mud/silt, etc.)
- Remote Location/Navigation/Orientation Hazards (need for map/compass/GPS, limited communication/cell phone coverage, getting lost, distance from medical facility, lack of potable water)
- Rough Terrain Hazards (ledges, cliffs, high altitude, climbing, strenuous hiking, rip rap, holes, pits, mine shaft/sink holes, avalanche, falling rocks)
- Fall Hazards (ladders, stairs, scaffolds, towers, elevated work platforms, retaining walls, rope access work, use of areal lifts, pits, holes, etc.)
- Weather/Seasonal Hazards (heat/cold stress, sunburn, dehydration, wind/weather/lightning, snow/ice, hunting season)
- Roadway/Highway/Transportation Corridor Hazards (moving vehicles, traffic safety, railroad hazards, airport traffic)
- Motor Vehicle Operation Hazards (towing, hauling, transporting loads, etc.)
- Pedestrians/General Public (any need for special measures to protect bystanders, secure work area during off hours)
- Construction/Heavy Equipment, (operation of, or working near, loaders, excavator, backhoe, drill rig, geoprobe, cranes, etc.)
- Overhead Hazards (Falling tools, equipment, debris, rocks, tree limbs, etc.)
- Hand Tools/Power Tools/Equipment (tool use hazards, chips, blades, projectiles, electrical generators, compressors, hoists, etc.)
- Material Handling/Storage Hazards (manual handling, lifting, repetitive motion, mechanical transport, ropes/slings/chains, rigging, stacking, etc.)
- Gas Welding/Cutting, Arc Welding/Cutting
- Electrical Hazards (electrical equipment 120 volts or greater, low voltage electric shock hazards, etc.)
- Fire and Explosion Hazards
- Noise and Noise Source Awareness
- Utility-Related Hazards (underground/overhead electric utilities, gas pipelines, water, sewer, fiber optic, etc.)
- Trenching & Excavation, Test Pits and Related Hazards
- Unexploded Ordnance and Related Hazards

- Long-Distance/Overnight Travel (distance driving/fatigue, unfamiliar territory, unfamiliar rental vehicles, etc.)
- Security/Personal Safety/Criminal Activity/Theft Concerns, High Crime Area
- Lack of Visibility (night work, poor lighting, etc)
- Chemical/Toxicity/Irritant Hazards (See Part III for details)
- Other:

B. BUILDING-RELATED FIELDWORK HAZARDS (Work in operating or abandoned facilities, including temporary remediation system facilities, or during construction/demolition/renovation/abatement activities)

- No Building-Related Work
- Operating or Abandoned/Vacant Building
- Confined Space Entry – USE CONFINED SPACE H&S PLAN/ENTRY PERMIT
- Enclosed Spaces (Non-Confined Spaces) – (trenches, basements, sub-basements, attics)
- General Environmental Conditions (degraded walking/working surfaces, housekeeping, poor lighting, too hot, too cold, etc., unsanitary)
- Fire, Hot Work, Explosion (welding/cutting, compressed gases, flammable/combustible liquids)
- Biological (mold, bird guano, medical waste, insects, vermin, unsanitary, sewerage, waste water, etc.)
- Ionizing/Non-Ionizing Radiation (radioactive materials, x-ray equipment, lasers, UV/IR from welding/process equipment, microwave, magnetic fields, radio frequency hazards)
- Fall Hazards (open pits, elevator shafts, working on roof, elevated work areas, elevated equipment access, stairs, ladders, scaffolding, powered boom lifts/scissors lifts)
- Electrical (operating equipment, power tools, extension cords, GFI, wet locations, abandoned electrical equip, batteries, capacitors, static electricity, arc flash/arc blast hazards, high voltage, need for lockout)
- Stored Energy Hazards (pneumatic/hydraulic pressure, hot surfaces, etc.)
- Mechanical/Moving Equipment/Machinery (cranes, operating equipment, conveyors, lockout hazards, robotic equipment, machine guarding hazards)
- Traffic/Vehicles/Pedestrian (moving fork trucks, parking lot, access road way, loading dock)
- Noise, Vibration Hazards
- Structural Hazards (unsafe floors/stairways/roof, deteriorated building components)
- Demolition/Renovation (overhead hazards, unstable building structures, heavy equipment, restricted access areas, etc.)
- Chemical/Toxicity/Irritant Hazards (See Part III for details)
- Other:

C. CHEMICAL/EXPOSURE HAZARDS

- No Chemical Hazards Anticipated
- Chemicals Subject to OSHA Hazard Communication (for commercial chemical products, attach MSDSs if applicable)
- Soil and/or Groundwater Contaminants
- Drums and Buried Drums
- Former Chemical Lagoon/Disposal Site
- Miscellaneous Residual “Urban Fill” Hazards and Similar Residual Hazard Conditions

- Contaminated Building Surfaces, Paint, Settled Dust, Accumulated Hazardous Substances
- Vapor/Fume/Particulate from Industrial/ Manufacturing or Welding/Cutting/Hot Processes
- Containerized Waste, Chemicals in Piping & Process Equipment
- Emissions from Gasoline-, Diesel-, Propane-fired Engine, Heater, Similar Equipment
- Spill, Potential for Spill
- General Work Site Airborne Dust Hazards
- Volatile Organic Compounds (VOCs), BTEX
- Chlorinated Organic Compounds
- Fuel Oil, Gasoline, Petroleum Products, Waste Oil
- Asbestos
- Oxygen Deficiency, Asphyxiation Hazards
- Methane Hazards
- Hydrogen Sulfide (H₂S)
- Carbon Monoxide
- Herbicides, Pesticide, Fungicide, Animal Poisons
- Metals, Metal Compounds (esp. heavy metals, toxic metals, etc.) **elevated concentrations of Se, Pb, As, Hg**
- Corrosives, Acids, Caustics, Strong Irritants
- Polychlorinated Biphenyls (PCBs)
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Compressed Gases or Cryogenic Hazards
- Flammable/Combustible Liquids
- Radiation Hazards (radioactive sealed/open source, x-rays, ultra violet, infrared, radio-frequency, etc.)
- Sensitizers
- Other: Contaminants of Concern identified in soil include PAHs, lead, arsenic, mercury and selenium

12. PLAN ACKNOWLEDGEMENT AND APPROVALS – The following individuals indicate their acknowledgement and/or approval of the contents of this Site Specific H&S Plan based on their understanding of project work activities, associated hazards and the appropriateness of health and safety measures to be implemented.

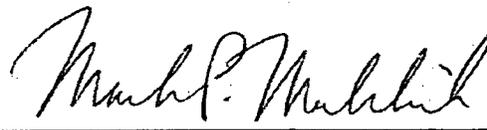
Site Safety Officer or Site Supervisor

MICHAEL A POWERS



Principal-in-Charge

Project Manager



H&S Coordinator, Designated H&S Reviewer, or
H&S Director

Attachment B

Site Inspection Log

PROJECT NAME:	LOCATION:
PROJECT NUMBER:	DATE:
PROJECT MANAGER:	COMPLETED BY:
SITE DESCRIPTION AND NATURE OF WORK:	

HAZARD COMMUNICATION

- Chemical hazards identified
- All containers properly labeled
- MSDS/workplace notebook on site
- Site safety briefing completed and documented

ACCIDENTS/EMERGENCY INFO

- First aid personnel identified
- Hospital location identified
- Police/Fire/Ambulance phone numbers available
- Incident investigation forms available
- Fire extinguisher present

SANITATION

- Washing facilities available
- Toilet facilities available
- Approved trash receptacle available
- Water/refreshments available

STORAGE

- Tools/Drill tooling/supplies safely stacked to prevent rolling or collapse
- Work areas and passage ways kept clear

HOUSEKEEPING

- Work areas clean and orderly
- Storage areas clean and orderly
- Combustible scrap/debris removed regularly
- Waste containers of flammable or toxic materials covered

OVERHEAD HAZARDS

- 15^{ft} minimum clearance maintained
- All sources of falling objects/swinging loads/rotating equipment identified
- Barriers or other methods in place to prevent injury due to overhead hazards

POSTING

- Emergency phone/contact info posted
- OSHA poster displayed

UNDERGROUND HAZARDS

- All underground hazards identified and communicated to workers on site
- Utility/Dig-Safe clearance confirmed
- Clearance dates: _____
- Clearance ID#: _____

EXCAVATIONS and TRENCHES

- All personnel and storage at least 2^{ft} from top edge of excavation
- Ladder in place
- Guarding/barriers in place

VEHICULAR TRAFFIC

- All vehicular traffic routes which could impact worker safety identified and communicated
- Barriers or other methods established to prevent injury from moving vehicles.

PEDESTRIAN TRAFFIC/SITE CONTROL

- All walkways which could be impacted by site activities identified and communicated
- Barriers or other methods established to prevent pedestrian injury from site activities

ENVIRONMENTAL HAZARDS

- Poisonous plants/stinging or biting insects/vermin/sewage/etc. identified and communicated

COMMENTS/OTHER HAZARDS

x = OK
NA = Not Applicable

GZA HEALTH AND SAFETY INCIDENT ANALYSIS FORM

Attach extra sheets as needed. Complete within 48 hours of the incident.

DESCRIPTION OF INCIDENT

Type of incident: Injury/Illness Property Damage Vehicle Related "Near Hit, Close Call"
 Other _____

Date/Time of Incident Or Onset of Illness: _____

Location of Incident: _____

Project: _____ Job No. _____ Proj. Mgr. _____ PIC _____

Description of Site Work, GZA's Role On Site, and Relationship of Incident to GZA (GZA Employee, Contractor, etc.) _____

If an injury/illness, NAME(s) OF VICTIM(s) _____

Other individuals directly or indirectly involved _____

Description, nature and extent of injury, property damage, or other pertinent aspects of the incident. In case of injury/illness, include part(s) of body affected, and object/substance that directly injured or made person ill:

If injury/illness describe any first aid or medical treatment received by victim(s): _____

Describe the general on-site activities and individual activities at the time of the incident: _____

Describe any tools or machinery involved: _____

Describe any personal protective equipment, or other safety equipment used by those involved at the time of the incident:

CAUSES:

Summarize the **IMMEDIATE DIRECT CAUSE(S)** of the incident: _____

Identify any **CONTRIBUTORY FACTORS OR INDIRECT CAUSES** of the incident: _____

CORRECTIVE ACTIONS - Identify immediate/short term/interim corrective actions or measures taken:

RECOMMENDATIONS - Recommended changes in process, procedure, equipment or other recommendations, to correct a situation and/or prevent the incident from recurring in the future:

A. PARTICIPANTS IN THE INCIDENT INVESTIGATION - NAME OF GZA EMPLOYEE(S) FILLING OUT, OR CONTRIBUTING TO THE INFORMATION IN, THIS FORM:

<i>NAME</i>	<i>ROLE/RESPONSIBILITY</i>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

B. OSHA/WORKERS COMP. RECORDKEEPING INFORMATION

Is this an OSHA Recordable Incident ? _____ YES _____ NO (If yes, ensure total number of days away from work and/or restricted duty work days are tracked on OSHA Log in accordance with OSHA criteria)

If an injury/illness, report information to Workers Comp. Administrator _____ COMPLETED _____ NA

DISTRIBUTION

Director of Health and Safety: Mark Malchik, Norwood _____

Regional Health and Safety Coordinator: _____

District Office Manager: _____

Principal-in-Charge: _____

Project Manager _____

Other: _____



APPENDIX C

ANALYTICAL DATA REPORTS

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.
Attn: Mr. Al Flori
530 Broadway
Providence, RI 02909

Date Received: 11/23/10
Date Reported: 11/29/10
P.O. #:
Work Order #: 1011-23189

DESCRIPTION: PROJECT# 33688.00 CENTERDALE MANOR

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies.
The specific methodologies are listed in the methods column of the Certificate Of Analysis.

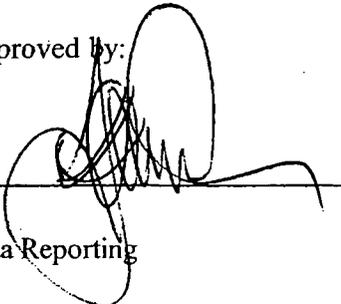
Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RJ015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844

This Certificate represents all data associated with the referenced work order and is paginated for completeness. The complete Certificate includes one attachment; the original Chain of Custody.

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:



Data Reporting

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/23/10

Work Order #: 1011-23189

PROJECT# 33688.00 CENTERDALE MANOR

Sample # 001

SAMPLE DESCRIPTION: GZ-1 (P-8)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TPH						
TPH GC/FID	<100	100	ug/l	SW846 8100M	11/24/10	CDC
Extraction date	Extracted			SW846 3510	11/24/10	JEB
Volatile Organic Compounds						
Benzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Bromobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Bromochloromethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Bromodichloromethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Bromoform	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Bromomethane	<7	7	ug/l	SW-846 8260B	11/24/10	MMM
n-Butylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Sec-butylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
tert-Butylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Carbon Tetrachloride	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Chlorobenzene	26	1	ug/l	SW-846 8260B	11/24/10	MMM
Chloroethane	<5	5	ug/l	SW-846 8260B	11/24/10	MMM
Chloroform	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Chloromethane	<5	5	ug/l	SW-846 8260B	11/24/10	MMM
2-Chlorotoluene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
4-Chlorotoluene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Dibromochloromethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2-Dibromo-3-Chloropropane	<2	2	ug/l	SW-846 8260B	11/24/10	MMM
1,2-Dibromoethane(EDB)	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Dibromomethane	<2	2	ug/l	SW-846 8260B	11/24/10	MMM
1,2-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,3-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,4-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Dichlorodifluoromethane	<5	5	ug/l	SW-846 8260B	11/24/10	MMM
1,1-Dichloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2-Dichloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1-Dichloroethene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
cis-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
trans-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,3-Dichloropropane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/23/10

Work Order #: 1011-23189

PROJECT# 33688.00 CENTERDALE MANOR

Sample # 001

SAMPLE DESCRIPTION: GZ-1 (P-8)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
2,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1-Dichloropropene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Ethylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Hexachlorobutadiene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Isopropylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
p-Isopropyltoluene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Methylene Chloride	<5	5	ug/l	SW-846 8260B	11/24/10	MMM
Naphthalene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
n-Propylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Styrene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1,1,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1,2,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Tetrachloroethene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Toluene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2,3-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2,4-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1,1-Trichloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1,2-Trichloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Trichloroethene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Trichlorofluoromethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2,3-Trichloropropane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2,4-Trimethylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,3,5-Trimethylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Vinyl Chloride	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
o-Xylene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
m,p-Xylene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Total Xylene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Methyl Tertiary Butyl Ether (MTBE)	<2	2	ug/l	SW-846 8260B	11/24/10	MMM
Acetone	<10	10	ug/l	SW-846 8260B	11/24/10	MMM
Surrogates			RANGE	SW-846 8260B	11/24/10	MMM
Dibromofluoromethane	100		86-118%	SW-846 8260B	11/24/10	MMM
Toluene-d8	100		88-110%	SW-846 8260B	11/24/10	MMM
4-Bromofluorobenzene	100		86-115%	SW-846 8260B	11/24/10	MMM
1,2 Dichloroethane-d4	101		80-120%	SW-846 8260B	11/24/10	MMM
Semi-Volatile Organic Compounds						
Acenaphthene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/23/10

Work Order #: 1011-23189

PROJECT# 33688.00 CENTERDALE MANOR

Sample # 001

SAMPLE DESCRIPTION: GZ-1 (P-8)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Acenaphthylene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Anthracene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Benizidine	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzo(a)anthracene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzo(b)fluoranthene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzo(k)fluoranthene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzo(g,h,i)perylene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzo(a)pyrene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Bis(2-chloroethyl)ether	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Bis(2-Chloroethoxy)methane	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Bis(2-Chloroisopropyl)Ether	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Bis(2-ethylhexyl)phthalate	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
4-Bromophenyl phenyl ether	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Butylbenzyl phthalate	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Chloronaphthalene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
4-Chlorophenyl phenyl ether	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Chrysene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Dibenzo(a,h)anthracene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Di-n-butyl phthalate	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
1,2-Dichlorobenzene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
1,3-Dichlorobenzene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
1,4-Dichlorobenzene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
3,3'-Dichlorobenzidine	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Diethyl phthalate	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Dimethyl phthalate	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4-Dinitrotoluene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
2,6-Dinitrotoluene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Di-n-octyl phthalate	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
1,2-Diphenylhydrazine	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Fluoranthene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Fluorene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Hexachlorobenzene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Hexachlorobutadiene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Hexachlorocyclopentadiene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Hexachloroethane	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Indeno(1,2,3-cd)pyrene	<S	5	ug/l	SW-846 8270D	11/29/10	CBM
Isophorone	<S	5	ug/l	SW-846 8270D	11/29/10	CBM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/23/10

Work Order #: 1011-23189

PROJECT# 33688.00 CENTERDALE MANOR

Sample # 001

SAMPLE DESCRIPTION: GZ-1 (P-8)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Naphthalene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Nitrobenzene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
N-nitrosodimethylamine	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
N-nitrosodiphenylamine	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
N-nitrosodi-n-propylamine	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Phenanthrene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Pyrene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
1,2,4-Trichlorobenzene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
4-Chloro-3-methylphenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Chlorophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4-Dichlorophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4-Dimethylphenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Methyl-4,6-dinitrophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4-Dinitrophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Nitrophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
4-Nitrophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Pentachlorophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Phenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4,5-Trichlorophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4,6-Trichlorophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Methylnaphthalene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Methylphenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
3 & 4-Methylphenols	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Acetophenone	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Aniline	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Azobenzene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
4-Chloroaniline	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Dibenzofuran	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Surrogates			RANGE	SW-846 8270D	11/29/10	CBM
Phenol-d5	46		15-110%	SW-846 8270D	11/29/10	CBM
2-Fluorophenol	38		15-110%	SW-846 8270D	11/29/10	CBM
2,4,6-Tribromophenol	74		15-110%	SW-846 8270D	11/29/10	CBM
Nitrobenzene-d5	71		30-130%	SW-846 8270D	11/29/10	CBM
2-Fluorobiphenyl	72		30-130%	SW-846 8270D	11/29/10	CBM
P-Terphenyl-d14	72		30-130%	SW-846 8270D	11/29/10	CBM

Total Metals

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/23/10

Work Order #: 1011-23189

PROJECT# 33688.00 CENTERDALE MANOR

Sample # 001

SAMPLE DESCRIPTION: GZ-1 (P-8)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Antimony	<0.100	0.100	mg/l	EPA 200.7	11/29/10	PJC
Arsenic	<0.05	0.05	mg/l	EPA 200.7	11/29/10	PJC
Beryllium	<0.001	0.001	mg/l	EPA 200.7	11/29/10	PJC
Cadmium	<0.004	0.004	mg/l	EPA 200.7	11/29/10	PJC
Chromium	<0.005	0.005	mg/l	EPA 200.7	11/29/10	PJC
Copper	<0.010	0.010	mg/l	EPA 200.7	11/29/10	PJC
Lead	0.060	0.040	mg/l	EPA 200.7	11/29/10	PJC
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	11/24/10	MLC
Nickel	<0.010	0.010	mg/l	EPA 200.7	11/29/10	PJC
Selenium	<0.050	0.050	mg/l	EPA 200.7	11/29/10	PJC
Silver	<0.020	0.020	mg/l	EPA 200.7	11/29/10	PJC
Thallium	<0.100	0.100	mg/l	EPA 200.7	11/29/10	PJC
Zinc	0.103	0.020	mg/l	EPA 200.7	11/29/10	PJC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/23/10

Work Order #: 1011-23189

PROJECT# 33688.00 CENTERDALE MANOR

Sample # 002

SAMPLE DESCRIPTION: GZ-2 (P-4)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TPH						
TPH GC/FID	<100	100	ug/l	SW846 8100M	11/24/10	CDC
Extraction date	Extracted			SW846 3510	11/24/10	JEB
Volatile Organic Compounds						
Benzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Bromobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Bromochloromethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Bromodichloromethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Bromoform	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Bromomethane	<7	7	ug/l	SW-846 8260B	11/24/10	MMM
n-Butylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Sec-butylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
tert-Butylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Carbon Tetrachloride	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Chlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Chloroethane	<5	5	ug/l	SW-846 8260B	11/24/10	MMM
Chloroform	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Chloromethane	<5	5	ug/l	SW-846 8260B	11/24/10	MMM
2-Chlorotoluene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
4-Chlorotoluene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Dibromochloromethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2-Dibromo-3-Chloropropane	<2	2	ug/l	SW-846 8260B	11/24/10	MMM
1,2-Dibromoethane(EDB)	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Dibromomethane	<2	2	ug/l	SW-846 8260B	11/24/10	MMM
1,2-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,3-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,4-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Dichlorodifluoromethane	<5	5	ug/l	SW-846 8260B	11/24/10	MMM
1,1-Dichloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2-Dichloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1-Dichloroethene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
cis-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
trans-1,2-Dichloroethylene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,3-Dichloropropane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/23/10

Work Order #: 1011-23189

PROJECT# 33688.00 CENTERDALE MANOR

Sample # 002

SAMPLE DESCRIPTION: GZ-2 (P-4)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
2,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1-Dichloropropene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Ethylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Hexachlorobutadiene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Isopropylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
p-Isopropyltoluene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Methylene Chloride	<5	5	ug/l	SW-846 8260B	11/24/10	MMM
Naphthalene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
n-Propylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Styrene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1,1,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1,2,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Tetrachloroethene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Toluene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2,3-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2,4-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1,1-Trichloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,1,2-Trichloroethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Trichloroethene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Trichlorofluoromethane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2,3-Trichloropropane	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,2,4-Trimethylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
1,3,5-Trimethylbenzene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Vinyl Chloride	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
o-Xylene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
m,p-Xylene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Total Xylene	<1	1	ug/l	SW-846 8260B	11/24/10	MMM
Methyl Tertiary Butyl Ether (MTBE)	<2	2	ug/l	SW-846 8260B	11/24/10	MMM
Acetone	<10	10	ug/l	SW-846 8260B	11/24/10	MMM
Surrogates			RANGE	SW-846 8260B	11/24/10	MMM
Dibromofluoromethane	100		86-118%	SW-846 8260B	11/24/10	MMM
Toluene-d8	100		88-110%	SW-846 8260B	11/24/10	MMM
4-Bromofluorobenzene	100		86-115%	SW-846 8260B	11/24/10	MMM
1,2 Dichloroethane-d4	102		80-120%	SW-846 8260B	11/24/10	MMM
Semi-Volatile Organic Compounds						
Acenaphthene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/23/10

Work Order #: 1011-23189

PROJECT# 33688.00 CENTERDALE MANOR

Sample # 002

SAMPLE DESCRIPTION: GZ-2 (P-4)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Acenaphthylene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Anthracene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzdine	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzo(a)anthracene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzo(b)fluoranthene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzo(k)fluoranthene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzo(g,h,i)perylene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Benzo(a)pyrene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Bis(2-chloroethyl)ether	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Bis(2-Chloroethoxy)methane	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Bis(2-Chloroisopropyl)Ether	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Bis(2-ethylhexyl)phthalate	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
4-Bromophenyl phenyl ether	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Butylbenzyl phthalate	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Chloronaphthalene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
4-Chlorophenyl phenyl ether	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Chrysene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Dibenzo(a,h)anthracene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Di-n-butyl phthalate	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
1,2-Dichlorobenzene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
1,3-Dichlorobenzene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
1,4-Dichlorobenzene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
3,3'-Dichlorobenzidine	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Diethyl phthalate	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Dimethyl phthalate	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4-Dinitrotoluene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,6-Dinitrotoluene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Di-n-octyl phthalate	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
1,2-Diphenylhydrazine	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Fluoranthene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Fluorene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Hexachlorobenzene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Hexachlorobutadiene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Hexachlorocyclopentadiene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Hexachloroethane	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Indeno(1,2,3-cd)pyrene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Isophorone	<5	5	ug/l	SW-846 8270D	11/29/10	CBM

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/23/10

Work Order #: 1011-23189

PROJECT# 33688.00 CENTERDALE MANOR

Sample # 002

SAMPLE DESCRIPTION: GZ-2 (P-4)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Naphthalene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Nitrobenzene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
N-nitrosodimethylamine	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
N-nitrosodiphenylamine	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
N-nitrosodi-n-propylamine	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Phenanthrene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Pyrene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
1,2,4-Trichlorobenzene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
4-Chloro-3-methylphenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Chlorophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4-Dichlorophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4-Dimethylphenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Methyl-4,6-dinitrophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4-Dinitrophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Nitrophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
4-Nitrophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Pentachlorophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Phenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4,5-Trichlorophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2,4,6-Trichlorophenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Methylnaphthalene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
2-Methylphenol	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
3 & 4-Methylphenols	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Acetophenone	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Aniline	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Azobenzene	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
4-Chloroaniline	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Dibenzofuran	<5	5	ug/l	SW-846 8270D	11/29/10	CBM
Surrogates			RANGE	SW-846 8270D	11/29/10	CBM
Phenol-d5	45		15-110%	SW-846 8270D	11/29/10	CBM
2-Fluorophenol	35		15-110%	SW-846 8270D	11/29/10	CBM
2,4,6-Tribromophenol	74		15-110%	SW-846 8270D	11/29/10	CBM
Nitrobenzene-d5	75		30-130%	SW-846 8270D	11/29/10	CBM
2-Fluorobiphenyl	60		30-130%	SW-846 8270D	11/29/10	CBM
P-Terphenyl-d14	69		30-130%	SW-846 8270D	11/29/10	CBM

Total Metals

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/23/10

Work Order #: 1011-23189

PROJECT# 33688.00 CENTERDALE MANOR

Sample # 002

SAMPLE DESCRIPTION: GZ-2 (P-4)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Antimony	<0.100	0.100	mg/l	EPA 200.7	11/29/10	PJC
Arsenic	<0.05	0.05	mg/l	EPA 200.7	11/29/10	PJC
Beryllium	<0.001	0.001	mg/l	EPA 200.7	11/29/10	PJC
Cadmium	<0.004	0.004	mg/l	EPA 200.7	11/29/10	PJC
Chromium	<0.005	0.005	mg/l	EPA 200.7	11/29/10	PJC
Copper	<0.010	0.010	mg/l	EPA 200.7	11/29/10	PJC
Lead	0.060	0.040	mg/l	EPA 200.7	11/29/10	PJC
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	11/24/10	MLC
Nickel	<0.010	0.010	mg/l	EPA 200.7	11/29/10	PJC
Selenium	<0.050	0.050	mg/l	EPA 200.7	11/29/10	PJC
Silver	<0.020	0.020	mg/l	EPA 200.7	11/29/10	PJC
Thallium	<0.100	0.100	mg/l	EPA 200.7	11/29/10	PJC
Zinc	0.083	0.020	mg/l	EPA 200.7	11/29/10	PJC

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Bldg. 2
Hudson, MA 01749
Tel: 888-228-3334
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type ^T	Preservation Code ^F	Matrix Code ^M														
11/03/10	2-330pm	GZ-1 (P-8)	G	6		GW	X	X	X	X										
11/23/10	3-32p	GZ-2 (P-4)	G	6		GW	X	X	X	X										

Client Information				Project Information					
Company Name:	GZA Geo Environmental, Inc			Project Name:	Centerville Manor 233688.00				
Address:	530 BROADWAY			P.O. Number:	Project Number:				
City / State / Zip:	Providence RI 02907			Report To:	IGOR RUNGE @ GZA.COM		Phone:	401-4140	Fax:
Telephone:	401-421-4140		Fax:	Sampled by:	Brian Mendez				
Contact Person:	IGOR Runge			Quote No:	Email address: IGOR.RUNGE@GZA.COM				

Relinquished By	Date	Time	Received By	Date	Time
<i>[Signature]</i>	11/23/10	4:03pm	<i>[Signature]</i>	11/23/10	1:00

Turn Around Time	
Normal	EMAIL Report
5 Business days. Possible surcharge.	
<input checked="" type="checkbox"/> Rush 2	(business days)
Lab Use Only	
Sample Pick Up Only	
RIAL sampled; attach field hours	
<input checked="" type="checkbox"/>	Shipped on ice
Workorder No: 211-23189	

Project Comments								
Circle if applicable:	GW-1,	GW-2,	GW-3,	S-1,	S-2, S-3	MCP Data Enhancement QC Package?	Yes	No
Bill to hopkinton ELL LABORATORY P.O.#						9.4°C		



CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.
Attn: Mr. Igor Runge
530 Broadway
Providence, RI 02909

Date Received: 11/29/10
Date Reported: 12/1/10
P.O. #:
Work Order #: 1011-23400

DESCRIPTION: GZA PROJECT #33688.00 CENTERDALE MANOR

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies.
The specific methodologies are listed in the methods column of the Certificate Of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844

This Certificate represents all data associated with the referenced work order and is paginated for completeness. The complete Certificate includes one attachment; the original Chain of Custody.

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:

Data Reporting

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/29/10

Work Order #: 1011-23400

GZA PROJECT #33688.00 CENTERDALE MANOR

Sample # 001

SAMPLE DESCRIPTION: GZ-1 (P-8) (1011-23189-001)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
PCB						
Aroclor-1016	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1221	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1232	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1242	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1248	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1254	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1260	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Surrogate			RANGE	SW-846 8082	12/1/10	CBM
Tetrachloro-m-xylene (TCMX)	50		30-150%	SW-846 8082	12/1/10	CBM
Decachlorobiphenyl	28*		30-150%	SW-846 8082	12/1/10	CBM
Extraction date	Extracted			SW846 3510	11/30/10	JEB

* Surrogate below recommended range, additional sample was not available to allow for a re-extraction and re-analysis.

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 11/29/10

Work Order #: 1011-23400

GZA PROJECT #33688.00 CENTERDALE MANOR

Sample # 002

SAMPLE DESCRIPTION: GZ-2 (P-4) (1011-23189-002)

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/23/2010 @ 14:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
PCB						
Aroclor-1016	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1221	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1232	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1242	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1248	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1254	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Aroclor-1260	<0.5	0.5	ug/l	SW-846 8082	12/1/10	CBM
Surrogate			RANGE	SW-846 8082	12/1/10	CBM
Tetrachloro-m-xylene (TCMX)	50		30-150%	SW-846 8082	12/1/10	CBM
Decachlorobiphenyl	25*		30-150%	SW-846 8082	12/1/10	CBM
Extraction date	Extracted			SW846 3510	11/30/10	JEB

* Surrogate below recommended range, additional sample was not available to allow for a re-extraction and re-analysis.

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Bldg. 2
Hudson, MA 01749
Tel: 888-228-3334
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type ^T	Preservation Code ^F	Matrix Code ^M														
11-23-10	1400	GZ-1 (P8) L1011-23189-001	G	1 AG LP	GW	X														
11-23-10	1400	GZ-2 (P4) L1011-23189-002	G	1 AG LP	GW	X														

Client Information				Project Information			
Company Name: GZA Geo Environmental, Inc.				Project Name: Centerdale Manor			
Address: 530 Broadway				P.O. Number:		Project Number: 33088.00	
City / State / Zip: Providence, RI 02909				Report To:		Phone: Fax:	
Telephone: 401-4110		Fax:		Sampled by:		Quote No: Email address:	
Contact Person: Igor Runge							

Relinquished By	Date	Time	Received By	Date	Time
Per phone conversation w/ Igor Runge	11-23-10	0905	Ukita Wray	11-23-10	0905

Turn Around Time	
Normal	<input checked="" type="checkbox"/> EMAIL Report
5 Business days. Possible surcharge.	
<input checked="" type="checkbox"/> Rush	2 (business days)

Project Comments	
Circle if applicable: GW-1, GW-2, GW-3, S-1, S-2, S-3	MCP Data Enhancement QC Package? Yes No
Relog w/ # 1011-23189-001 & 002	

Lab Use Only	
Sample Pick Up Only	
RIAL sampled; attach field hours	
Shipped on ice	
Workorder No: 1011-23400	

Container Types: P=Poly, G=Glass, AG=Amber Glass, V=Vial, St=Sterile
 Preservation Codes: NP=None, N=HNO₃, H=HCl, S=H₂SO₄, SH=NaOH, SB=NaHSO₄, M=MeOH, T=Na₂S₂C Z=ZnOAc, I=Ice
 Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, Sl=Sludge, A=Air, B=Bulk/Solid, O=



CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.
Attn: Mr. Igor Runge
530 Broadway
Providence, RI 02909

Date Received: 12/6/10
Date Reported: 12/7/10
P.O. #:
Work Order #: 1012-23958

DESCRIPTION: GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies.
The specific methodologies are listed in the methods column of the Certificate Of Analysis.

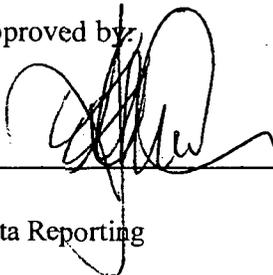
Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844

This Certificate represents all data associated with the referenced work order and is paginated for completeness. The complete Certificate includes one attachment; the original Chain of Custody.

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:



Data Reporting

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.
Date Received: 12/6/10
Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 001

SAMPLE DESCRIPTION: A-1

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Metals						
Arsenic	2.8	2.6	mg/kg dry	SW-846 6010	12/7/10	PJC
Moisture	7		%	SM2540 G.	12/7/10	KAC

Sample # 002

SAMPLE DESCRIPTION: A-2

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Metals						
Arsenic	<2.7	2.7	mg/kg dry	SW-846 6010	12/7/10	PJC
Moisture	6		%	SM2540 G.	12/7/10	KAC

Sample # 003

SAMPLE DESCRIPTION: A-3

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Metals						
Arsenic	<2.4	2.4	mg/kg dry	SW-846 6010	12/7/10	PJC
Moisture	8		%	SM2540 G.	12/7/10	KAC

Sample # 004

SAMPLE DESCRIPTION: A-4

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Metals						
Arsenic	<2.6	2.6	mg/kg dry	SW-846 6010	12/7/10	PJC
Moisture	7		%	SM2540 G.	12/7/10	KAC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.
Date Received: 12/6/10
Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 005

SAMPLE DESCRIPTION: A-5

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Metals						
Arsenic	<2.7	2.7	mg/kg dry	SW-846 6010	12/7/10	PJC
Moisture	8		%	SM2540 G.	12/7/10	KAC

Sample # 006

SAMPLE DESCRIPTION: A-6

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Metals						
Arsenic	2.6	2.4	mg/kg dry	SW-846 6010	12/7/10	PJC
Moisture	7		%	SM2540 G.	12/7/10	KAC

Sample # 007

SAMPLE DESCRIPTION: A-7

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Metals						
Arsenic	<2.6	2.6	mg/kg dry	SW-846 6010	12/7/10	PJC
Moisture	9		%	SM2540 G.	12/7/10	KAC

Sample # 008

SAMPLE DESCRIPTION: A-8

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Metals						
Arsenic	2.4	2.3	mg/kg dry	SW-846 6010	12/7/10	PJC
Moisture	7		%	SM2540 G.	12/7/10	KAC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 12/6/10

Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 009

SAMPLE DESCRIPTION: S-1

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TPH						
TPH GC/FID	<11	11	mg/kg dry	SW846 8100M	12/7/10	CDC
Moisture	7		%	SM2540 G.	12/7/10	KAC
PCB						
Aroclor-1016	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1221	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1232	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1242	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1248	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1254	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1260	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Surrogate			RANGE	SW-846 8082	12/7/10	CBM
Tetrachloro-m-xylene (TCMX)	90		30-150%	SW-846 8082	12/7/10	CBM
Decachlorobiphenyl	103		30-150%	SW-846 8082	12/7/10	CBM
Extraction date	Extracted			SW846 3546	12/7/10	KAC
Volatile Organic Compounds						
Benzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Bromobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Bromochloromethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Bromodichloromethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Bromoform	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Bromomethane	<0.11	0.11	mg/kg dry	5035/8260B	12/7/10	MMM
n-Butylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Sec-butylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
tert-Butylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Carbon Tetrachloride	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Chlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Chloroethane	<0.11	0.11	mg/kg dry	5035/8260B	12/7/10	MMM
Chloroform	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Chloromethane	<0.11	0.11	mg/kg dry	5035/8260B	12/7/10	MMM
2-Chlorotoluene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
4-Chlorotoluene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Dibromochloromethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dibromo-3-Chloropropane	<0.04	0.04	mg/kg dry	5035/8260B	12/7/10	MMM

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 12/6/10

Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 009

SAMPLE DESCRIPTION: S-1

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,2-Dibromoethane(EDB)	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Dibromomethane	<0.04	0.04	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dichlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,3-Dichlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,4-Dichlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Dichlorodifluoromethane	<0.11	0.11	mg/kg dry	5035/8260B	12/7/10	MMM
1,1-Dichloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dichloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1-Dichloroethene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
cis-1,2-Dichloroethene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
trans-1,2-Dichloroethylene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dichloropropane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,3-Dichloropropane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
2,2-Dichloropropane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1-Dichloropropene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Ethylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Hexachlorobutadiene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Isopropylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
p-Isopropyltoluene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Methylene Chloride	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
n-Propylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Naphthalene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Styrene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,1,2-Tetrachloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,2,2-Tetrachloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Tetrachloroethene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Toluene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,3-Trichlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,4-Trichlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,1-Trichloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,2-Trichloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Trichloroethene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Trichlorofluoromethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,3-Trichloropropane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,4-Trimethylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,3,5-Trimethylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Vinyl Chloride	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 12/6/10

Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 009

SAMPLE DESCRIPTION: S-1

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
o-Xylene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
m,p-Xylene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Total Xylene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Methyl Tertiary Butyl Ether (MTBE)	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Surrogates			RANGE	5035/8260B	12/7/10	MMM
Dibromofluoromethane	87		70-130%	5035/8260B	12/7/10	MMM
Toluene-d8	98		70-130%	5035/8260B	12/7/10	MMM
4-Bromofluorobenzene	96		70-130%	5035/8260B	12/7/10	MMM
1,2 Dichloroethane-d4	100		70-130%	5035/8260B	12/7/10	MMM
PAH						
Naphthalene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Acenaphthylene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Acenaphthene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Fluorene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Phenanthrene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Anthracene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Fluoranthene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Pyrene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Benzo(a)anthracene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Chrysene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Benzo(b)fluoranthene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Benzo(k)fluoranthene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Benzo(a)pyrene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Indeno(1,2,3-cd)pyrene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Dibenzo(a,h)anthracene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Benzo(g,h,i)perylene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
2-Methylnaphthalene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Moisture	7		%	SM2540 G.	12/7/10	KAC
Surrogates			RANGE	SW-846 8270D	12/7/10	CBM
Nitrobenzene-d5	67		30-130%	SW-846 8270D	12/7/10	CBM
2-Fluorobiphenyl	78		30-130%	SW-846 8270D	12/7/10	CBM
P-Terphenyl-d14	88		30-130%	SW-846 8270D	12/7/10	CBM
Extraction date	Complete			SW846 3546	12/7/10	JEB
Total Metals						
Arsenic	2.4	2.4	mg/kg dry	SW-846 6010	12/7/10	PJC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 12/6/10

Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 009

SAMPLE DESCRIPTION: S-1

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Barium	7.8	0.48	mg/kg dry	SW-846 6010	12/7/10	PJC
Cadmium	<0.24	0.24	mg/kg dry	SW-846 6010	12/7/10	PJC
Chromium	2.9	1.4	mg/kg dry	SW-846 6010	12/7/10	PJC
Lead	3.6	1.9	mg/kg dry	SW-846 6010	12/7/10	PJC
Mercury	<0.11	0.11	mg/kg dry	SW-846 7471A	12/7/10	PJC
Selenium	<9.6	9.6	mg/kg dry	SW-846 6010	12/7/10	PJC
Silver	1.3	0.96	mg/kg dry	SW-846 6010	12/7/10	PJC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 12/6/10

Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 010

SAMPLE DESCRIPTION: S-2

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TPH						
TPH GC/FID	<11	11	mg/kg dry	SW846 8100M	12/7/10	CDC
Moisture	8		%	SM2540 G.	12/7/10	KAC
PCB						
Aroclor-1016	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1221	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1232	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1242	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1248	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1254	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Aroclor-1260	<0.1	0.1	mg/kg dry	SW-846 8082	12/7/10	CBM
Surrogate			RANGE	SW-846 8082	12/7/10	CBM
Tetrachloro-m-xylene (TCMX)	68		30-150%	SW-846 8082	12/7/10	CBM
Decachlorobiphenyl	73		30-150%	SW-846 8082	12/7/10	CBM
Extraction date	Extracted			SW846 3546	12/7/10	KAC
Volatile Organic Compounds						
Benzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Bromobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Bromochloromethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Bromodichloromethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Bromoform	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Bromomethane	<0.11	0.11	mg/kg dry	5035/8260B	12/7/10	MMM
n-Butylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Sec-butylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
tert-Butylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Carbon Tetrachloride	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Chlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Chloroethane	<0.11	0.11	mg/kg dry	5035/8260B	12/7/10	MMM
Chloroform	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Chloromethane	<0.11	0.11	mg/kg dry	5035/8260B	12/7/10	MMM
2-Chlorotoluene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
4-Chlorotoluene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Dibromochloromethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dibromo-3-Chloropropane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 12/6/10

Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 010

SAMPLE DESCRIPTION: S-2

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,2-Dibromoethane(EDB)	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Dibromomethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dichlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,3-Dichlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,4-Dichlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Dichlorodifluoromethane	<0.11	0.11	mg/kg dry	5035/8260B	12/7/10	MMM
1,1-Dichloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dichloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1-Dichloroethene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
cis-1,2-Dichloroethene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
trans-1,2-Dichloroethylene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dichloropropane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,3-Dichloropropane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
2,2-Dichloropropane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1-Dichloropropene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Ethylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Hexachlorobutadiene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Isopropylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
p-Isopropyltoluene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Methylene Chloride	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
n-Propylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Naphthalene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Styrene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,1,2-Tetrachloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,2,2-Tetrachloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Tetrachloroethene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Toluene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,3-Trichlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,4-Trichlorobenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,1-Trichloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,2-Trichloroethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Trichloroethene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Trichlorofluoromethane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,3-Trichloropropane	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,4-Trimethylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
1,3,5-Trimethylbenzene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Vinyl Chloride	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 12/6/10

Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 010

SAMPLE DESCRIPTION: S-2

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
o-Xylene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
m,p-Xylene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Total Xylene	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Methyl Tertiary Butyl Ether (MTBE)	<0.02	0.02	mg/kg dry	5035/8260B	12/7/10	MMM
Surrogates			RANGE	5035/8260B	12/7/10	MMM
Dibromofluoromethane	88		70-130%	5035/8260B	12/7/10	MMM
Toluene-d8	97		70-130%	5035/8260B	12/7/10	MMM
4-Bromofluorobenzene	96		70-130%	5035/8260B	12/7/10	MMM
1,2 Dichloroethane-d4	97		70-130%	5035/8260B	12/7/10	MMM
PAH						
Naphthalene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Acenaphthylene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Acenaphthene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Fluorene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Phenanthrene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Anthracene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Fluoranthene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Pyrene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Benzo(a)anthracene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Chrysene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Benzo(b)fluoranthene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Benzo(k)fluoranthene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Benzo(a)pyrene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Indeno(1,2,3-cd)pyrene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Dibenzo(a,h)anthracene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Benzo(g,h,i)perylene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
2-Methylnaphthalene	<0.36	0.36	mg/kg dry	SW-846 8270D	12/7/10	CBM
Moisture	8		%	SM2540 G.	12/7/10	KAC
Surrogates			RANGE	SW-846 8270D	12/7/10	CBM
Nitrobenzene-d5	63		30-130%	SW-846 8270D	12/7/10	CBM
2-Fluorobiphenyl	77		30-130%	SW-846 8270D	12/7/10	CBM
P-Terphenyl-d14	86		30-130%	SW-846 8270D	12/7/10	CBM
Extraction date	Complete			SW846 3546	12/7/10	JEB
Total Metals						
Arsenic	<2.4	2.4	mg/kg dry	SW-846 6010	12/7/10	PJC

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 12/6/10

Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 010

SAMPLE DESCRIPTION: S-2

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Barium	8.1	0.48	mg/kg dry	SW-846 6010	12/7/10	PJC
Cadmium	<0.24	0.24	mg/kg dry	SW-846 6010	12/7/10	PJC
Chromium	2.5	1.4	mg/kg dry	SW-846 6010	12/7/10	PJC
Lead	3.0	1.9	mg/kg dry	SW-846 6010	12/7/10	PJC
Mercury	<0.10	0.10	mg/kg dry	SW-846 7471A	12/7/10	PJC
Selenium	<9.6	9.6	mg/kg dry	SW-846 6010	12/7/10	PJC
Silver	1.3	0.96	mg/kg dry	SW-846 6010	12/7/10	PJC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 12/6/10

Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 011

SAMPLE DESCRIPTION: TB

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Volatile Organic Compounds						
Benzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Bromobenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Bromochloromethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Bromodichloromethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Bromoform	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Bromomethane	<0.25	0.25	mg/kg dry	5035/8260B	12/7/10	MMM
n-Butylbenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Sec-butylbenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
tert-Butylbenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Carbon Tetrachloride	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Chlorobenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Chloroethane	<0.25	0.25	mg/kg dry	5035/8260B	12/7/10	MMM
Chloroform	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Chloromethane	<0.25	0.25	mg/kg dry	5035/8260B	12/7/10	MMM
2-Chlorotoluene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
4-Chlorotoluene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Dibromochloromethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dibromo-3-Chloropropane	<0.10	0.10	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dibromoethane(EDB)	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Dibromomethane	<0.10	0.10	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dichlorobenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,3-Dichlorobenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,4-Dichlorobenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Dichlorodifluoromethane	<0.25	0.25	mg/kg dry	5035/8260B	12/7/10	MMM
1,1-Dichloroethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dichloroethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,1-Dichloroethene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
cis-1,2-Dichloroethene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
trans-1,2-Dichloroethylene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,2-Dichloropropane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,3-Dichloropropane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
2,2-Dichloropropane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,1-Dichloropropene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Ethylbenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Hexachlorobutadiene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA / Geoenvironmental, Inc.

Date Received: 12/6/10

Work Order #: 1012-23958

GZA FILE# 33688 CENTERDALE MANOR NORTH PROVIDENCE, RI

Sample # 011

SAMPLE DESCRIPTION: TB

SAMPLE TYPE: GRAB

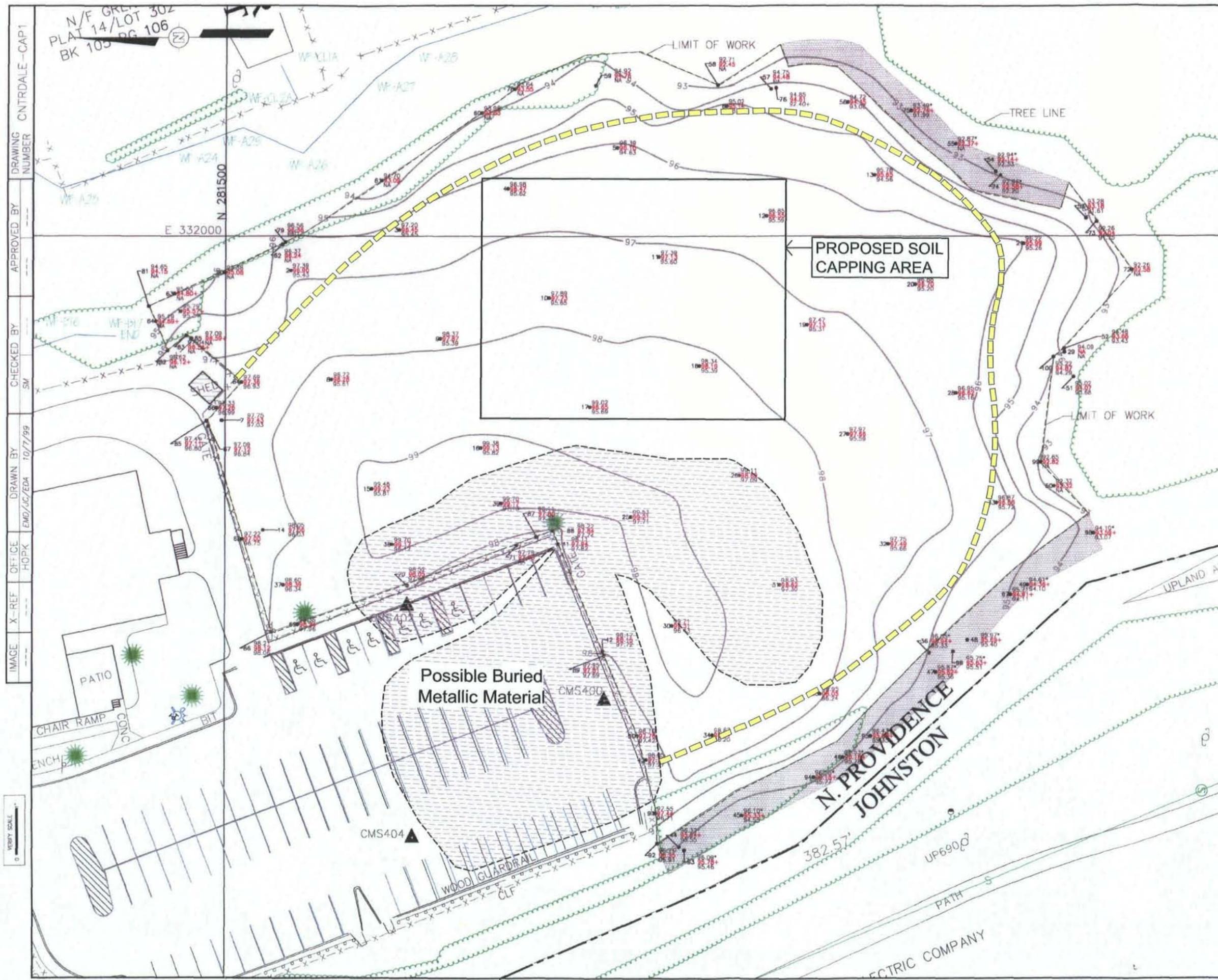
SAMPLE DATE/TIME: 12/06/2010

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Isopropylbenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
p-Isopropyltoluene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Methylene Chloride	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Naphthalene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
n-Propylbenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Styrene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,1,2-Tetrachloroethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,2,2-Tetrachloroethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Tetrachloroethene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Toluene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,3-Trichlorobenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,4-Trichlorobenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,1-Trichloroethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,1,2-Trichloroethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Trichloroethene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Trichlorofluoromethane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,3-Trichloropropane	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,2,4-Trimethylbenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
1,3,5-Trimethylbenzene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Vinyl Chloride	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
o-Xylene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
m,p-Xylene	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Methyl Tertiary Butyl Ether (MTBE)	<0.05	0.05	mg/kg dry	5035/8260B	12/7/10	MMM
Moisture	<1		%	SM2540 G.	12/7/10	DPD
Surrogates			RANGE	5035/8260B	12/7/10	MMM
Dibromofluoromethane	91		70-130%	5035/8260B	12/7/10	MMM
Toluene-d8	97		70-130%	5035/8260B	12/7/10	MMM
4-Bromofluorobenzene	95		70-130%	5035/8260B	12/7/10	MMM
1,2 Dichloroethane-d4	93		70-130%	5035/8260B	12/7/10	MMM



APPENDIX D

TEMPORARY CAPPING PLAN



LEGEND

- | | | | |
|---|------------------------|-----|---------------------|
| ☐ | CATCH BASIN | ● | GUY WIRE |
| ○ | DRAIN MANHOLE | + | SIGN |
| ○ | ELECTRIC MANHOLE | ● | TREE |
| ○ | COMMUNICATIONS MANHOLE | ☐ | HAYBALES |
| ○ | SEWER MANHOLE | ☐ | LEDGE |
| ○ | TELEPHONE MANHOLE | ☐ | CONCRETE |
| ○ | MANHOLE | --- | FENCE |
| ○ | CURB INLET | --- | WETLAND LINE |
| ○ | GAS VALVE | --- | DRAIN LINE |
| ○ | GAS SHUT OFF VALVE | --- | SEWER LINE |
| ○ | WATERGATE | --- | TELEPHONE/ELEC LINE |
| ○ | WATER SHUT OFF VALVE | --- | TOWNLIME |
| ○ | FIRE HYDRANT | ⊙ | BENCHMARK |
| ○ | POST INDICATOR VALVE | ⊙ | BOUND |
| ○ | MONITOR WELL | ⊙ | IRON PIPE OR ROD |
| ○ | SOIL SAMPLE | ⊙ | DRILL HOLE |
| ○ | LIGHT POLE | | |
| ○ | POWER POLE | | |

--- RIP RAP
 --- GRG POINT IDENTIFICATION
 --- GRG POINT LOCATION
 --- AS-BUILT FINAL GRADE ELEVATION
 --- AS-BUILT TOP OF FINAL COVER ELEVATION
 --- AS-BUILT TOP OF GEOTEXTILE ELEVATION
 --- APPROXIMATE TOP OF RIP RAP ELEVATIONS
 --- ESTIMATED ELEVATIONS
 --- RED ELEVATIONS ARE APPLICABLE TO DRAWING

SCALE
 0 20 40 60 FEET

GZA UPDATES 7 DEC. 2010
GZA SOIL CAPPING PLAN

--- Approximate Location Of Hay Bales (Dec. 2010)



88C ELM STREET
 HOPKINTON, MASSACHUSETTS
 (508) 435-9561

SITE MAP
CAP #1 FINAL COVER CONTOURS
 CENTREDALE MANOR
 NORTH PROVIDENCE, RHODE ISLAND

N/F GREEN 302 PLAT 14/LOT 302 BK 105 PG 106
 DRAWING NUMBER: CNTRDALE-CAP1
 APPROVED BY: [Signature]
 CHECKED BY: SM
 DRAWN BY: EMD/AC/EDA 10/7/99
 OFFICE: HOPK
 IMAGE X-REF: [Blank]
 VERY SCALE: 0 10 20 30 40 50 60 70 80 90 100 FEET

GZA-1\DMA\338884\GZA\GZA_DMS\338884\GZA\GZA_SOIL_CAPPING_PLAN.dwg [GZA SOIL CAPPING PLAN] January 31, 2011 - 11:05am notLarge



APPENDIX E

SOILS MANAGEMENT PLAN

APPENDIX E
SOILS MANAGEMENT PLAN

Centredale Manor Facility
2074 Smith Street
North Providence, Rhode Island

This *Soils Management Plan* (SMP) has been prepared to describe activities to properly manage soil during emergency repairs to an underground water line at the Centredale Manor facility in North Providence, Rhode Island.

As documented in prior reports and studies, some soil may contain various contaminants, including Dioxin and PCBs. Soils excavated will be managed as if contaminated with the identified contaminants of concern. Excavated trench soils will be returned to the trench. There will be no disposal of soils off-Site. According to guidance by personnel from USEPA and RIDEM, soil sampling will not be required and regulations governing the creation of a landfill are not applicable. This will allow for a fast-track effort that will be protective of human health and the environment.

General

- The excavation site perimeter (active work area) will be lined with chain link fencing, hay bales, and silt fence. Pedestrian and vehicle access along the driveway for the Centredale Manor and the Brookside Village will be maintained during all construction activities especially for the use of emergency vehicles. Trucking and equipment personnel will be made aware of the potential of emergency vehicles entering the site and will be ready to implement an immediate road clearing protocol.
- Personnel onsite who enter active work areas are required to have 40 hour HAZWOPPER training. Daily health and safety meetings will be performed by the site safety supervisor. Safety meetings and stop of activities can be issued by onsite personnel who observe an imminent unsafe working condition.
- Designated earthwork procedures must be followed during the excavation, utility installation, backfill, or containment operations to prevent cross-contamination of the contaminated onsite material and the clean burrowed material. Specifically, separate crews and equipment will be designated for each area or operation. In those circumstances during which the same piece of equipment is required to handle contaminated and clean materials/soils, separate buckets (excavator/bobcat) or blades (bulldozer) will be assigned for each material/soil. Hauling onsite contaminated or clean burrowed materials/soils will be limited to designated trucks that will be used for only one of the two materials/soils, clean or contaminated.

- Designated decontamination zones and procedures for both equipment and workers will be implemented prior to the start of earthwork activities on a daily basis. Personnel decontamination zones and procedures will include disposable containers for disposable personal protection clothing and hand washing areas. Equipment decontamination areas will include water containment areas.
- A limited air monitoring program will be used during construction activities that are likely to generate dust (see GZA HASP).

Trench Excavation

- Trench excavation will commence at the Smith Street end and work toward the Centredale Manor facility. A designated excavator will be used to excavate trench soils and temporarily place soils adjacent to the trench. The damaged pipe and other large debris will remain in the ground.
- The trench excavation process will be immediately followed (from the Smith Street end) by a pipe replacement crew. The new water lines (consisting of one 4-inch diameter and one 8-inch diameter HDPE pipe) will be installed. Excavated soils will be returned to the trench. As manageable sections are completed, the area will be covered by a geotextile fabric to act as the physical barrier separating the potentially contaminated soils from the top soil. Area will be brought up to grade with clean fill and top soil to a combined depth of 12 inches (except areas to be covered by an impermeable material sidewalk) and hydroseeded with a mixture of grass seeds that include annual rye for cold temperature germination. Area will be revisited in the spring and additional seed applied as needed.
- It should be recognized that frozen ground and/or snow cover may necessitate modification in the protocol.
- At the completion of each work day, daily containment or dust control will be maintained by applying polyethylene sheeting over potentially contaminated areas and open excavations, as needed.

Soil Disposal

- All excavated soils will be returned to the trench. There will transport/disposal of soils off-Site or to other areas of the property.



APPENDIX F
FIELD REPORTS

FIELD SUMMARY

DATE: December 4, 2010

REPORT NO.: 01

FILE NO. 33688

PROJECT:

Centerdale Manor – Water-line Replacement

CLIENT:

Cornerstone Corporation, Inc.

CONTRACTOR:

Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water)

WEATHER CONDITIONS:

Sunny, 30's

ATTACHMENTS:

Field Sketch



1. The undersigned, Neal Westkott, arrived on site at 1045 and 1230 hours on Saturday, December 4, 2010 to observe earthwork operations of the proposed water line replacement at 2074 Smith Street, North Providence, RI.
2. Equipment Operating:
 - 1-John Deere 444K Front End Loader
 - 1-John Deere M322D Rubber tire Excavator
 - 2-"Power Prime" Groundwater Pumps
 - 1-Dual 10 Micron Fiber Filtration Unit
3. Work Performed and Observations Made:
 - a. Site Resources sub contractor, S&M Farms, installed a continuous perimeter of hay bales and siltation fence around the CAP 1 area, and along the lower elevation site perimeter of the proposed water-line trench alignment. Site Resources established a continuous perimeter of temporary fencing around the entire work zone.
 - b. Site Resources installed an entry construction pad at the opening into the Cap #1 containment area. The construction pad consisted of a shallow excavation lined with filter fabric and backfilled with 3" minus material.
 - c. Continuous stock piling of offsite clean borrow granular fill, crushed stone, and bedding sand was unloaded in the paved parking area east of the proposed water line alignment, located within the perimeter of the work zone.
 - d. Upon arrival, Rain for Rent Water Treatment Company had begun installation of the 8" diameter PVC dewatering manifold and tributary well point attachment hoses. Set up of the proposed water injection system had commenced. During set up of the well injection system, the undersigned observed the hydrant connection and discussed with the Rain for Rent personnel what the actual injection wash fluids would be generated during each well point. The undersigned contacted Mark DePasquale of Site Resources. Potential solutions to the accumulation of potentially contaminated surface water from the well injection involved excavation of trenches and pumping the residual water into frac tanks which were not on site. Site Resources concluded to abandon the "jetting" of the wellpoints and instead install the well points with a dry drilling operation that would commence on Monday, December 6, 2010.
4. The undersigned, GZA representative Neal Westkott, departed at 1230 hours and 1430 hours.

ON-JOB TIME	<u>3.75</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.5</u>
TOTAL TIME	<u>5.25</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:



S&M Farms installed silt fencing and hay bale perimeter b/w work area and

Rain For Rent began set up of 8" diameter dewatering manifold, parallel to proposed trench alignment. Rain for Rent terminated the proposed method of jet injection of the well points due to the excess of surface water.

Site Resources continued stock piling of burrow fill materials.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -01 Date: 12-4-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 6, 2010

REPORT NO.: 02

FILE NO. 33688

PROJECT:

Centerdale Manor – Water-line Replacement

CLIENT:

Cornerstone Corporation, Inc.

CONTRACTOR:

Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water)

WEATHER CONDITIONS:

Sunny, 20's

ATTACHMENTS:

Field Sketch



1. The undersigned, Neal Westcott, arrived on site at 0930 hours on Monday, December 6, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.
2. Equipment Operating:
 - Site Resources LLC:
 - 1-Catapillar 444K Front End Loader
 - 1-Catapillar M322D Rubber tire Excavator
 - 1-Komatsu PC 300Steel Track Excavator
 - 1- GMC C5500 Site Work Truck
 - O'Sullivan Drilling Company:
 - 1- IngersolRand Ram 590 Hydraulic Rock Drill
 - Rain for Rent:
 - 2-"Power Prime" Groundwater Pumps
 - 1-Dual 10 Micron Fiber Filtration Unit
3. Work Performed and Observations Made:
 - a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
 - b. O'Sullivan Drilling Company completed 88 well point installations. Each dewatering well point is a 1 ½" or 3" diameter PVC 12 foot long well with 2.5 feet of screen. Containment of drill spoils was achieved for each well point following these procedures; Prior to drilling each well point, a 10'x10' piece of 15mm polyethylene sheeting was placed below the drill rig and hay bales were placed between the drill rig and the adjacent driveway. All drill spoils, drill wash, and groundwater was contained on the poly sheeting. After completion of drilling the borehole and installation of the PVC dewatering well, the poly sheeting was carefully rolled, sealing the residual drilling debris and placed in a polyethylene garbage bag. Any surrounding soil observed to be contaminated with drill spoils during the drilling operation was disposed of into the garbage bag. Clean borrowed filter sand was placed into each borehole through the use of the designated clean CAT M322D. Prior to the completion for the day, all potentially contaminated materials and drilling spoils were placed into a double lined dumpster, designated as contaminated waste only and stored within the work-zone, Reference the attached field sketch for approximate locations of well points installed on this date.
 - c. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
 - d. During all earthwork operations, any personnel who entered the work zone was OSHA 40 hour HAZWOPER trained and maintained Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations included safety

FIELD SUMMARY

DATE: December 6, 2010

REPORT NO.: 02

FILE NO. 33688

glasses, hard hats, steel-toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.

- e. On this date no equipment left the work zone.
- f. Upon arrival, Rain for Rent Water Treatment Company had continued installation of the 8" diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump.



- 4. The undersigned, GZA representative Neal Westkott, left at 1900 hours.

ON-JOB TIME	<u>9.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>11.25</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:



O'Sullivan Drilling and Blasting Co. installed 88 well points on this date.

Site Resources installed a temporary fence perimeter around the work zone.

Rain for Rent installed dewatering pump and manifold extraction connection.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -02 Date: 12-6-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 7, 2010

REPORT NO.: 03

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water)

WEATHER CONDITIONS: Sunny, 20's

ATTACHMENTS: Field Sketch



1. The undersigned, Neal Westcott, arrived on site at 0700 hours on Tuesday, December 7, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1-Caterpillar M322D Rubber Tire Excavator
- 1-Komatsu PC 300Steel Track Excavator
- 1- GMC C5500 Site Work Truck
- 1- Caterpillar 420E Rubber Tire Backhoe

O'Sullivan Drilling Company:

- 1- IngersollRand Ram 590 Hydraulic Rock Drill

Rain for Rent:

- 2-"Power Prime" Groundwater Pumps
- 1-Dual 10 Micron Fiber Filtration Unit
- 1-21,000 gallon Frac Tank
- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. O'Sullivan Drilling Company completed 54 well point installations, totaling 142 well points. Each dewatering well point is a 1 1/2" diameter PVC 12 foot long well with 2.5 feet of screen. Containment of drill spoils was achieved for each well point following these procedures; Prior to drilling operations, conducted minor regrading of the existing soil less than 12" below existing grades and created surface to slope away from the adjacent driveway. Removal of the existing sidewalk, 4"thick asphalt binder, located in front of the Centerdale Manor building. Locally at each well point a 10'x10' piece of 15mm polyethylene sheeting was placed below the drill rig prior to drilling. Hay bales were placed between the drill rig and the adjacent driveway. All drill spoils, drill wash, and groundwater was contained on the poly sheeting. After completion of drilling the borehole and installation of the PVC dewatering well, the poly sheeting was carefully rolled, sealing the residual drilling debris and placed in a garbage bag. Any surrounding soil observed to be contaminated during the drilling operations was also disposed of into the garbage bag or capped with clean burrow fill. Clean burrowed filter sand was placed into each borehole through the use of the designated clean CAT M322D equipment. Prior to completion for the day, all potentially contaminated materials and drilling spoils, were placed into a double lined dumpster, designated as contaminated waste only and stored within the work-zone. Reference the attached field sketch for approximate locations of well points installed on this date.

FIELD SUMMARY

DATE: December 7, 2010

REPORT NO.: 03

FILE NO. 33688



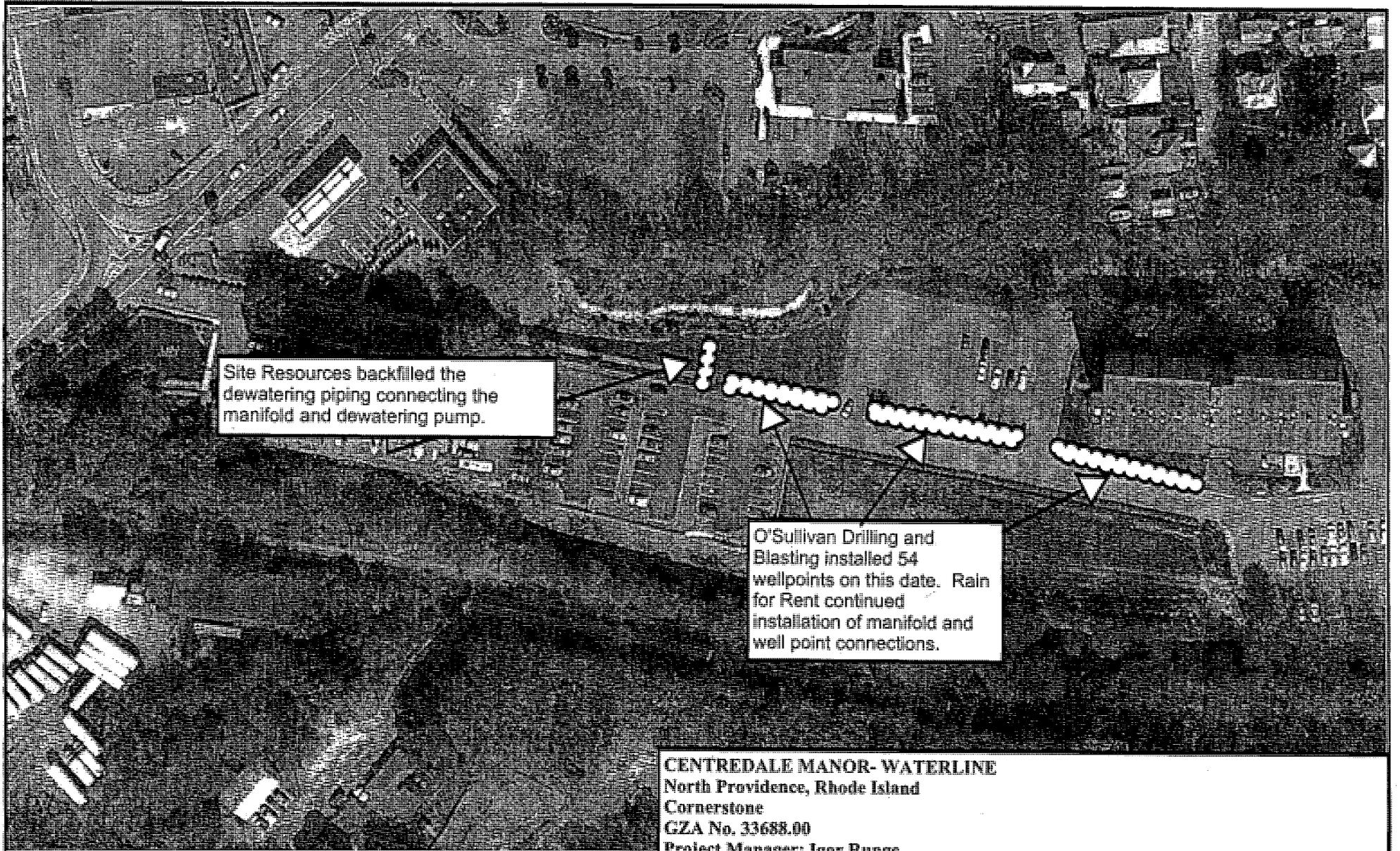
- c. Rain for Rent Water Treatment Company had continued installation of the 8" diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump. Three carbon vessel units arrived onsite, each with approximately 700 gallon capacity containing granular activated carbon. A 21,000 gallon sediment Frac Tank arrived onsite.
- d. Site Resources excavated a shallow 8" to 12" trench to provide coverage for the 8" diameter manifold extraction line connecting the well point manifold network to the extraction pump. No pumping procedures occurred on this date. Thermal insulation for the carbon filter units is scheduled to be installed on the following date to prevent freezing during the carbon activation 24 hour period. Four magnetic heaters and a circulation pump are scheduled to be installed into the Frac tank to also prevent freezing.
- e. Upon completion of earthwork operations for this day, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
- f. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations included safety glasses, hard hats, steel-toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
- g. On this date no equipment left the work zone.

4. The undersigned and GZA representative Neal Westkott left at 1830 hours.

ON-JOB TIME	<u>11.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>13.25</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:



Site Resources backfilled the dewatering piping connecting the manifold and dewatering pump.

O'Sullivan Drilling and Blasting installed 54 wellpoints on this date. Rain for Rent continued installation of manifold and well point connections.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -03 Date: 12-7-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 8, 2010

REPORT NO.: 04

FILE NO. 33688

PROJECT:

Centerdale Manor – Water-line Replacement

CLIENT:

Cornerstone Corporation, Inc.

CONTRACTOR:

Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water)

WEATHER CONDITIONS:

Sunny, 20's

ATTACHMENTS:

Field Sketch



1. The undersigned, Neal Westcott, arrived on site at 0700 hours on Wednesday, December 8, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1-Caterpillar M322D Rubber tire Excavator
- 1-Komatsu PC 300Steel Track Excavator
- 1- GMC C5500 Site Work Truck
- 1- Caterpillar 420E Rubber Tire Backhoe

O'Sullivan Drilling Company:

- 1- IngersolRand Ram 590 Hydraulic Rock Drill

Rain for Rent:

- 2-"Power Prime" Groundwater Pumps
- 1-Dual 10 Micron Fiber Filtration Unit
- 1-21,000 gallon Frac Tank
- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. O'Sullivan Drilling Company completed 13 well point installations, totaling in 155 well points. Two groups of four and six well points were installed in the Centerdale Manor eastern parking area entrances. The remaining three well points were installed along the proposed water-line alignment at the immediate water-line connection to the building, directly north of the main entrance. Each dewatering well point is a 1 ½" diameter PVC 12 foot long well with 2.5 feet of screen. Containment of drill spoils was achieved for each well point following these procedures; Prior to drilling operations, removal of the existing asphalt binder was conducted to prevent the drill wash to enter the adjacent roadway. Locally at each well point, a 10'x10' piece of 15mm polyethylene sheeting was placed below the drill rig prior to drilling. Hay bales were placed between the drill rig and the adjacent driveway. All drill spoils, drill wash, and groundwater was contained on the poly sheeting. After completion of drilling the borehole and installation of the PVC dewatering well, the poly sheeting was carefully rolled, sealing the residual drilling debris and placed in a polyethylene garbage bag. Any surrounding soil observed to be contaminated during the drilling operations was also disposed of into the garbage bag or capped with clean borrow fill. Clean borrowed filter sand was placed into each borehole through the use of the designated clean CAT M322D equipment. Prior to the completion of the day, all contaminated materials, drilling spoils, were placed into a double lined dumpster,

FIELD SUMMARY

DATE: December 8, 2010

REPORT NO.: 04

FILE NO. 33688



- designated as contaminated waste only and stored within the work-zone. Reference the attached field sketch for approximate locations of well points installed on this date.
- c. The undersigned observed petroleum odors, staining, and sheens during the drilling operations of the group of four well points located in the northern entrance to the eastern Centredale Manor parking area. Any contaminated material in the immediate local of the drilling was shoveled and placed into the poly sheeting, wrapped in a garbage bag, and disposed of into the double lined dumpster.
 - d. Prior to the installation of the three well points located directly north of the Centredale Building entrance, Site Resources excavated in the general area of the existing duct-bank to verify its location prior to drilling. The duct-bank was observed to be 3 feet below the existing grade. During the excavation all removed spoils were placed on poly sheeting and was placed back into the trench. During the excavation the operator designated two individual machine buckets for either clean material or potentially contaminated soil.
 - e. O'Sullivan Drilling Company completed the installation of 13 monitoring wells located approximately four feet east of the alignment of the previously installed well points, and spaced every fifty-feet between the proposed hot-box location and the main entrance way into the Centredale Manor Building. Each monitoring well is a 1 1/2" diameter PVC 12 foot long well with 2.5 feet of screen. Containment of drill spoils was achieved for each well point following these procedures; Prior to drilling operations, minor regrading of the existing cap material, less than 12" below existing grades, created surface pitch away from the adjacent driveway. Locally at each well point a 10'x10' piece of 15mm polyethylene sheeting was placed below the drill rig prior to drilling. Hay bales were placed between the drill rig and the adjacent driveway. All drill spoils, drill wash, and surfaced groundwater was contained on the poly sheeting. After completion of drilling the borehole and installation of the PVC dewatering well, the poly sheeting was carefully rolled, sealing the residual drilling debris and placed in a garbage bag. Any surrounding soil observed to be contaminated during the drilling operations was also disposed of into the garbage bag or capped with clean burrow fill. Clean burrowed filter sand was placed into each borehole through the use of the designated clean CAT M322D equipment. Prior to the completion for the day, all potentially contaminated materials and drilling spoils, were placed into a double lined dumpster, designated as contaminated waste only and stored within the work-zone. Reference the attached field sketch for approximate locations of well points installed on this date.
 - f. Rain for Rent Water Treatment Company had continued installation of the 8" diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump. Approximately the northern 300 feet of the dewatering network was vacuum tested for connection seals. All major components of the treatment system were connected. Rain for Rent conveyed to the undersigned that heat coil wrap, insulation, and a suitable generator would be installed on the following day.
 - g. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill, or covered with 15mm poly sheeting.
 - h. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel-toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
 - i. On this date no equipment left the work zone.

4. The undersigned, GZA representative Neal Westkott, left at 1900 hours.

ON-JOB TIME	<u>12.0</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>

Neal Westkott
PREPARED BY:

FIELD SUMMARY

DATE: December 8, 2010

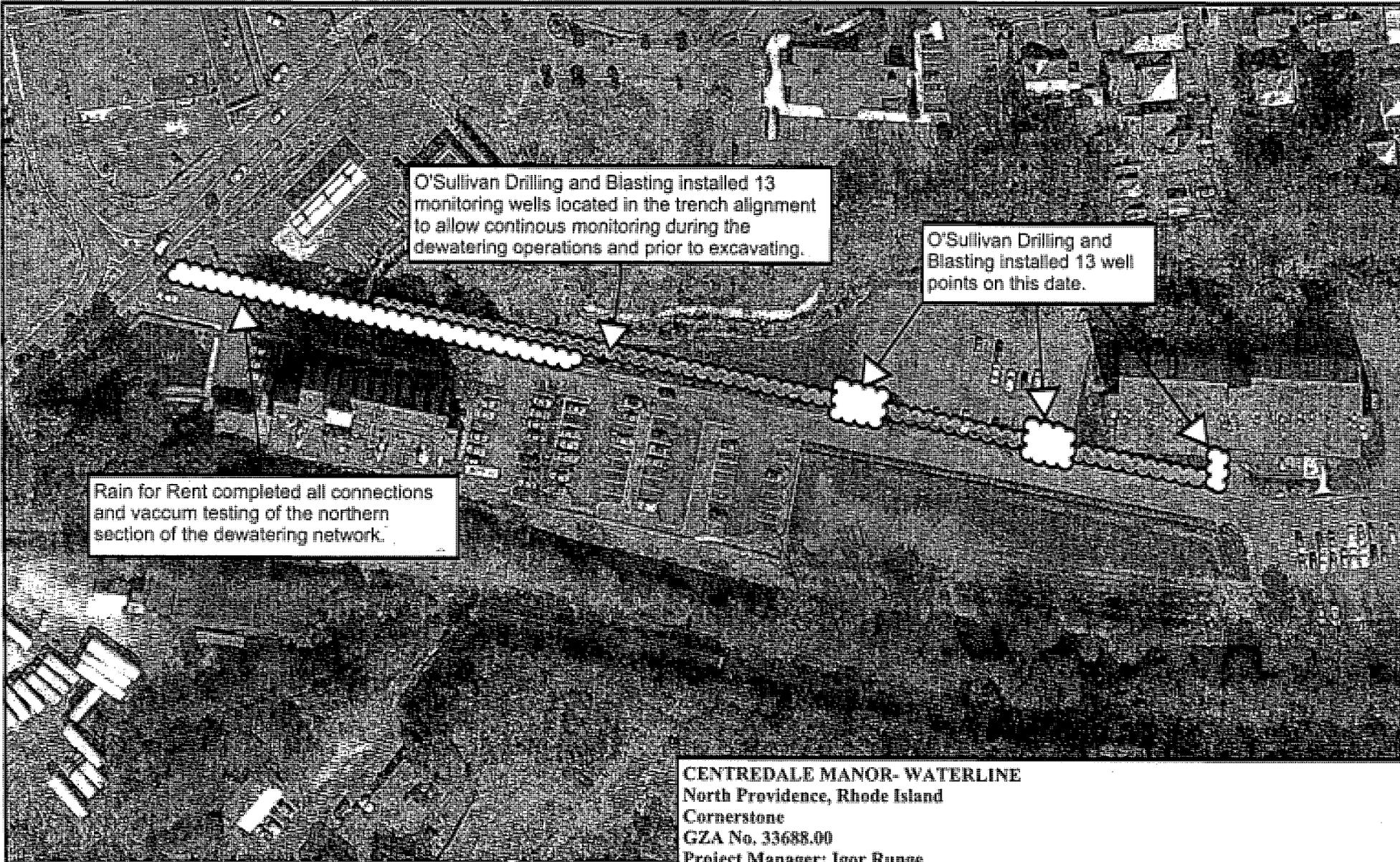
REPORT NO.: 04

FILE NO. 33688

TOTAL TIME 13.75

Igor Runge, Ph.D., P.H.
REVIEWED BY:





O'Sullivan Drilling and Blasting installed 13 monitoring wells located in the trench alignment to allow continuous monitoring during the dewatering operations and prior to excavating.

O'Sullivan Drilling and Blasting installed 13 well points on this date.

Rain for Rent completed all connections and vacuum testing of the northern section of the dewatering network.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -04 Date: 12-8-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 9, 2010

REPORT NO.: 05

FILE NO. 33688

PROJECT:

Centerdale Manor – Water-line Replacement

CLIENT:

Cornerstone Corporation, Inc.

CONTRACTOR:

Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W.Walsh Company (Temporary Water), O'Sullivan Drilling & Blasting Co.

WEATHER CONDITIONS:

Sunny, 20's

ATTACHMENTS:

Field Sketch



1. The undersigned, Neal Westcott, arrived on site at 0700 hours on Thursday, December 9, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.
2. Equipment Operating:
 - Site Resources LLC:
 - 1-Caterpillar 444K Front End Loader
 - 1-Caterpillar M322D Rubber tire Excavator
 - 1-Komatsu PC 300Steel Track Excavator
 - 1- GMC C5500 Site Work Truck
 - 1- Caterpillar 420E Rubber Tire Backhoe
 - O'Sullivan Drilling Company:
 - 1- IngersolRand Ram 590 Hydraulic Rock Drill
 - Rain for Rent:
 - 2-"Power Prime" Groundwater Pumps
 - 1-Dual 10 Micron Fiber Filtration Unit
 - 1-21,000 gallon Frac Tank
 - 3- Carbon Adsorption Vessels
3. Work Performed and Observations Made:
 - a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
 - b. Site Resources removed all asphalt sidewalks within the area of the proposed water line alignment. All asphalt was removed from site to be recycled.
 - c. Site Resources completed a temporary equipment decontamination area located in the southern entrance to the work zone. The 20' by 30' area of asphalt was cut and stripped. Approximately 6" of the asphalt base material was excavated to form a sloping grade which pitched to one corner which would be a sump pit for the residual decontamination wash. The area was lined with two layers of 15mm poly sheeting and backfilled with washed crushed stone. The perimeter of the decontamination basin was lined with hay bales. Reference the attached photographs.
 - d. Rain for Rent Water Treatment Company had continued installation of the 8" diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump. Approximately the northern 300 feet of the dewatering network was vacuum tested for connection seals. All major components of the treatment system were connected.
 - e. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
 - f. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of

FIELD SUMMARY

DATE: December 9, 2010

REPORT NO.: 05

FILE NO. 33688

the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.

g. On this date no equipment left the work zone.

4. The undersigned and GZA representative Neal Westkott left at 1630 hours.



ON-JOB TIME	<u>9.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>11.25</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:

Site Resources removed all existing sidewalks

Rain for Rent completed all connections of dewatering and treatment system

Site Resources constructed equipment decontamination area.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -05 Date: 12-9-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 10&11, 2010

REPORT NO.: 06

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water), O'Sullivan Drilling and Blasting Company, SCO-VAL Mobile Power Washing Company

WEATHER CONDITIONS: Sunny, 20's

ATTACHMENTS: Field Sketch



1. The undersigned, Neal Westcott, arrived on site at 0700 hours on Friday, December 10, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1-Caterpillar M322D Rubber tire Excavator
- 1-Komatsu PC 300Steel Track Excavator
- 1- GMC C5500 Site Work Truck
- 1- Caterpillar 420E Rubber Tire Backhoe

O'Sullivan Drilling Company:

- 1- IngersolRand Ram 590 Hydraulic Rock Drill

Rain for Rent:

- 2-"Power Prime" Groundwater Pumps
- 1-Dual 10 Micron Fiber Filtration Unit
- 1-21,000 gallon Frac Tank
- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. During the daily site meeting with all parties, the decision to commence excavation for the proposed water-lines was achieved at approximately 1500 hours.
- c. O'Sullivan Drilling and Blasting subcontractor SCO-VAL Mobile Power Wash decontaminated the IngersolRand hydraulic percussion rock drill in the previously constructed decontamination area. During the power wash process, all residual water was contained within the crushed stone and poly sheeting detention basin. Following the completion decontamination, the drill rig was mobilized directly out of the work zone without contact of contaminated materials and onto the Centredale Manor driveway and onto O'Sullivan's truck and trailer.
- d. During all earthwork operations associated with the water line installation, GZA implemented an air monitoring program as described in all work plan submittals. During trenching activities a DustTrak II Aerosol Monitor Model 8535, with all weather protective housing and tri-pod, was placed with 100 feet of earthwork activities. Dust levels were monitored in accordance with threshold levels described in the GZA Health and Safety program. During earthwork operations on this date, a maximum mg/m^3 recording was approximately 0.455. VOC monitoring was achieved the use of an Ion Science PhoCheck Photovoltaic Impurity Detector (PID). Period readings were performed within the area of

FIELD SUMMARY

DATE: December 10&11, 2010

REPORT NO.: 06

FILE NO. 33688



the excavation. A maximum of 0.2 PPM was recorded during earthwork operations on this date. No specific odors were observed with the excavation.

- e. Rain for Rent Water Treatment Company had completed installation of the 8" diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump. Approximately 200 feet of the dewatering network was vacuum tested for connection seals. All major components of the treatment system were connected. At approximately 2100 hours, the dewatering network began to extract groundwater into the Frac tank. The approximate flow rate into the frac tank was 20 gallons per minute. Prior to dewatering and after five hours of dewatering operations, groundwater elevations were recorded in the monitoring wells within the work area potentially influenced by the dewatering system.

Monitoring Well	Reading Prior to Dewatering (feet below grade)	Time of Readings (12/9/2010)	Reading after 5 hours of Dewatering system Activated	Time of Readings (12/10/2010)
MW-1	8.2	1530	8.3	0230
MW-2	7.3	1532	7.7	0233
MW-3	6.0	1537	6.7	0238
MW-4	5.3	1541	6.0	0240
MW-5	4.5	1546	5.2	0246

- f. At approximately 2130 hours, Rain for Rent filled the three carbon vessel units with potable water supplied from the temporary 8" diameter water line located north of the Centredale Manor building.
- g. Site Resources commenced earthwork operations in association with the installation of 8" and 4" water-line connections between Smith Street and the Centredale Manor. The excavation began approximately 30-feet of the Smith Street connection. Earthwork processes implemented during the installation of the waterline was as followed; The total depth of the excavation never exceeded 4'6" below the surrounding grade. The sides of excavation were sloped to match a ratio of 1.5 horizontal to 1 vertical unit measurement. The top 1 foot of the excavation sides was bench cut in order to create an open excavation less than 4 feet in depth. The excavated material was placed in a narrow wind row along the eastern edge of the excavation, and placed beyond the excavation dimensions described above. Following the installation of both waterlines, the trench was backfilled in multiple one foot lifts of excavated material and compacted with multiple passes of the double drum vibratory trench compactor. The area which the excavated material was temporarily placed on top of, was over excavated approximately 6-inches and used as backfill material within the trench area. At no time during earthwork operations was any onsite material removed from within the work zone perimeter, with the exception of the asphalt binder sidewalk.
- h. On this date, approximately 180 lineal feet of ductile 4" and 8" diameter piping was installed between Smith Street and the proposed meter house location. Approximately 120 lineal feet of PVC 8" and 4" diameter piping was installed extending south of the proposed meter house location. Reference the attached field sketch for the approximate location pipe installation.
- i. GZA GeoEnvironmental implemented a water quality monitoring program of the dewatering treatment system prior to discharge into the tailrace located east of work area. As specified in the dewatering work plan, water quality was analyzed through turbidity measurements. The following table presents the hourly recordings of the groundwater treatment discharge. The turbidity results recorded with the use of a LaMotte 2020 Turbidometer, measured in NTU's, and are listed in order relating to elapsed time from the initiated time of discharge.

FIELD SUMMARY

DATE: December 10&11, 2010

REPORT NO.: 06

FILE NO. 33688



- j. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
 - k. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
 - l. On this date no equipment left the work zone.
4. The undersigned, GZA representative Neal Westkott, left at 0900 hours on Saturday, December 11, 2010.

ON-JOB TIME	<u>26</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>27.75</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:

Site Resources excavated, installed, and backfilled 4" and 8" PVC waterline. GZA performed air quality monitoring during all earthwork.

Rain for Rent commenced dewatering and treatment prior to earthwork. GZA performed water quality monitoring of the system discharge

Site Resources excavated, installed, and backfilled 4" and 8" ductile waterline connections b/w Smith St. and the existing hot box. GZA performed air quality monitoring during all earthwork.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -06 Date: 12-10 thru 12-11-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 11, 2010

REPORT NO.: 07

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement
CLIENT: Cornerstone Corporation, Inc.
CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W.Walsh Company (Temporary Water),
WEATHER CONDITIONS: Sunny, 20's
ATTACHMENTS: Field Sketch



1. The undersigned, Shane Robat, arrived on site at 0700 hours on Saturday, December 11, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.
2. Equipment Operating:
 - Site Resources LLC:
 - 1-Caterpillar 444K Front End Loader
 - 1-Caterpillar M322D Rubber tire Excavator
 - 1-Komatsu PC 300Steel Track Excavator
 - 1- GMC C5500 Site Work Truck
 - 1- Caterpillar 420E Rubber Tire Backhoe
 - Rain for Rent:
 - 2-“Power Prime” Groundwater Pumps
 - 1-Dual 10 Micron Fiber Filtration Unit
 - 1-21,000 gallon Frac Tank
 - 3- Carbon Adsorption Vessels
3. Work Performed and Observations Made:
 - a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
 - b. During all earthwork operations associated with the water line installation, GZA implemented an air monitoring program as described in all work plan submittals. During trenching activities a DustTrak II Aerosol Monitor Model 8535, with all weather protective housing and tri-pod, was placed within 50 feet of earthwork activities. Dust levels were monitored in accordance with threshold levels described in the GZA Health and Safety program. During earthwork operations on this date, a maximum mg/m^3 recorded was approximately 0.417. VOC monitoring was achieved through the use of an Ion Science PhoCheck Photovoltaic Impurity Detector (PID). Period readings were performed within the area of the excavation. A maximum of 0.5 PPM was recorded during earthwork operations on this date. No specific odors were observed with the excavation.
 - c. Rain for Rent Water Treatment Company had completed installation of the 8” diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump. Approximately 300 lineal feet of the dewatering network was operational on this date generating an approximate flow rate of 40 gallons per minute from the well points into the Frac tank. The area which the dewatering network was extracting groundwater from was on the proposed trench alignment between 200 feet and 500 feet from the Smith Street connection. Reference the attached field sketch for approximate location of the dewatering operations. At approximately 1130 hours Rain for Rent activated the discharge from the treatment system and as result water quality testing would be performed on an hourly basis.
 - d. GZA GeoEnvironmental implemented a water quality monitoring program of the dewatering treatment system prior to discharge into the tailrace located east of work area. As specified in the dewatering work plan, water quality was analyzed through turbidity

FIELD SUMMARY

DATE: December 11, 2010

REPORT NO.: 07

FILE NO. 33688

measurements taken directly from the discharge hose. The following table presents the hourly recordings of the groundwater treatment discharge. The turbidity results recorded with the use of a LaMotte 2020 Turbidimeter, measured in NTU's, and are listed in order relating to elapsed time from the initiated time of discharge.

Time	Reading (NTU)
1130 hours	9.0
1230 hours	7.5
1330 hours	8.0
1430 hours	8.0
1530 hours	5.5
1630 hours	4.5
1730 hours	2.9



- e. Site Resources continued earthwork operations in association with the installation of 8" and 4" water-line and electrical conduit connections between Smith Street and the Centredale Manor. Earthwork processes implemented during the installation of the waterline was as follows; The total depth of the excavation never exceeded 4'6" below the surrounding grade. The sides of excavation were sloped to match a ratio of 1.5 horizontal to 1 vertical unit measurement. The top 1 foot of the excavation sides was bench cut in order to create an open excavation less than 4 feet in depth. The excavated material was placed in a narrow wind row along the eastern edge of the excavation, and placed beyond the excavation dimensions described above. Following the installation of both waterlines, the trench was backfilled in multiple one foot lifts of excavated material and compacted with multiple passes of the double drum vibratory trench compactor. The area which the excavated material was temporarily placed on top of, was over excavated approximately 6-inches and used as backfill material within the trench area. At no time during earthwork operations was any onsite material removed from within the work zone perimeter, with the exception of the asphalt binder sidewalk. Constant observations were made of the temporarily stock piled material to confirm no soil run-off or water extending beyond the limits of the wind row which potentially could contaminate the surrounding areas.
 - f. On this date, 160 lineal feet of PVC 8" and 4" diameter piping and four 2" diameter PVC electrical conduits were installed between the proposed meter house location and the Centredale Manor Building. Reference the attached field sketch for the approximate location pipe installation.
 - g. Site Resources completed fabrication of the 8" and 4" diameter water line connections associated with the proposed meter house. The existing concrete "hot-box" structure was cored in several locations in order to connect the subsurface waterlines to the above ground systems.
 - h. Upon completion of earthwork operations on this date, all areas of the work zone that potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
 - i. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
 - j. On this date no equipment left the work zone..
4. The undersigned, GZA representative Shane Robat, left at 1730 hours on Saturday, December 11, 2010.

ON-JOB TIME 10.5
 TRAVEL TIME 1.0

Shane Robat
 PREPARED BY:

FIELD SUMMARY

DATE: December 11, 2010

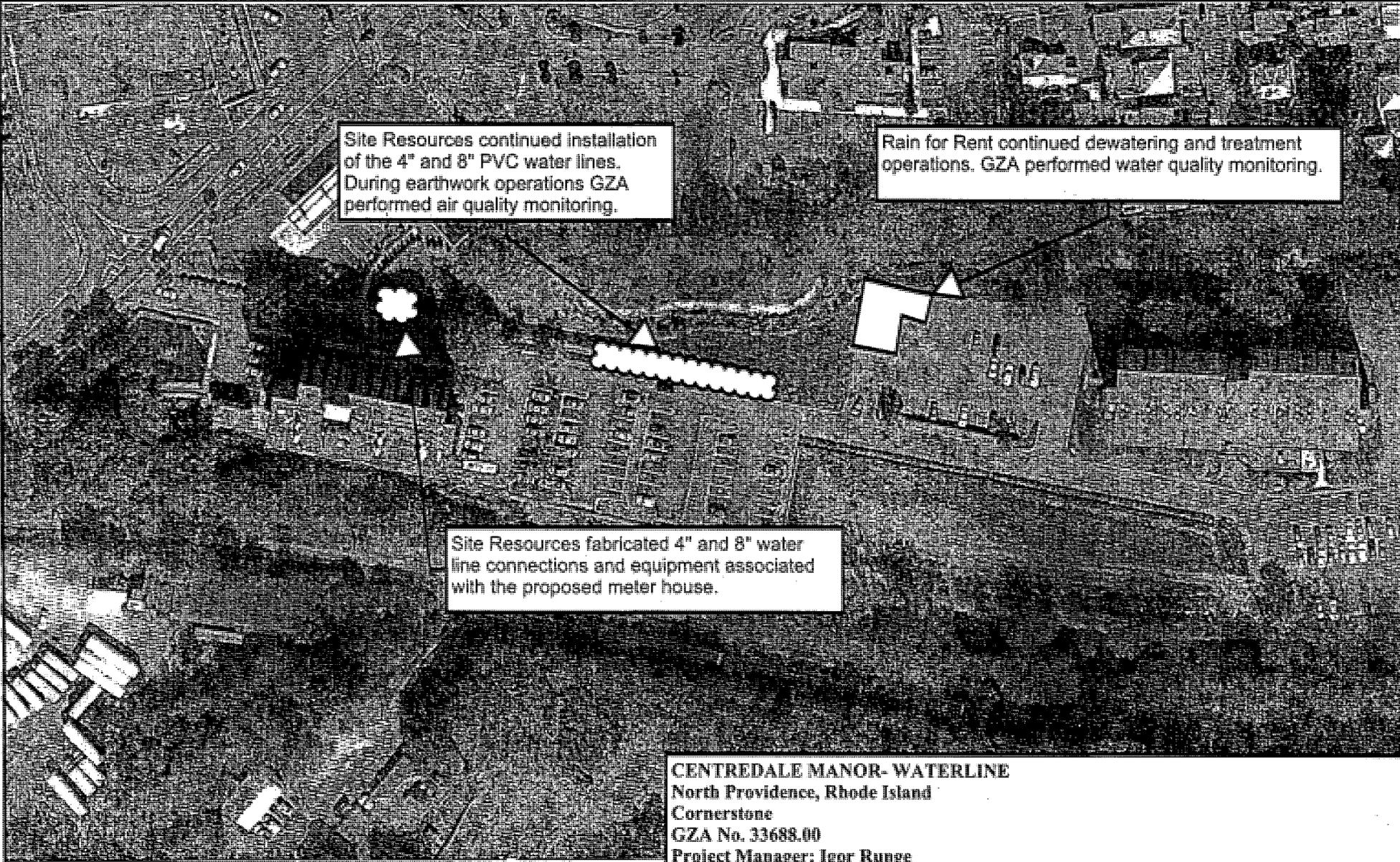
REPORT NO.: 07

FILE NO. 33688

OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>12.25</u>

Igor Runge, Ph.D., P.H.
REVIEWED BY:





Site Resources continued installation of the 4" and 8" PVC water lines. During earthwork operations GZA performed air quality monitoring.

Rain for Rent continued dewatering and treatment operations. GZA performed water quality monitoring.

Site Resources fabricated 4" and 8" water line connections and equipment associated with the proposed meter house.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -07 Date: 12-11-10
Drawn by: SJR

FIELD SUMMARY

DATE: December 11&12, 2010

REPORT NO.: 08

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement
CLIENT: Cornerstone Corporation, Inc.
CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W.Walsh Company (Temporary Water),
WEATHER CONDITIONS: Partly cloudy, 30's
ATTACHMENTS: Field Sketch



1. The undersigned, Neal Westkott, arrived on site at 1730 hours on Saturday, December 11, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1-Caterpillar Mini Excavator
- 1-Caterpillar M322D Rubber tire Excavator
- 1-Komatsu PC 300Steel Track Excavator
- 1- GMC C5500 Site Work Truck
- 1- Caterpillar 420E Rubber Tire Backhoe

Rain for Rent:

- 2-“Power Prime” Groundwater ###/min Pumps
- 1-Dual 10 Micron Fiber Filtration Unit
- 1-21,000 gallon Frac Tank
- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. Site Resources mobilized a Caterpillar Mini Excavator to the Centredale Manor site.
- c. During all earthwork operations associated with the water line installation, GZA implemented an air monitoring program as described in all work plan submittals. During trenching activities a DustTrak II Aerosol Monitor Model 8535, with all weather protective housing and tri-pod, was placed within 50 feet of earthwork activities. Dust levels were monitored in accordance with threshold levels described in the GZA Health and Safety program. During earthwork operations on this date, a maximum mg/m^3 recording was approximately 0.5. VOC monitoring was achieved the use of an Ion Science PhoCheck Photovoltaic Impurity Detector (PID). Period readings were performed within the area of the excavation. A maximum of 1.3 PPM was recorded during earthwork operations on this date. No specific odors were observed with the excavation.
- d. Rain for Rent Water Treatment Company had completed installation of the 8” diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump. Approximately 300 lineal feet of the dewatering network was operational on this date generating an approximate flow rate of 40 gallons per minute from the well points into the Frac tank. The area which the dewatering network was extracting groundwater from was on the proposed trench alignment between 200 feet and 500 feet from the Smith Street connection. Reference the attached field sketch for approximate location of the dewatering operations.
- e. GZA GeoEnvironmental implemented a water quality monitoring program of the dewatering treatment system prior to discharge into the tailrace located east of work area.

FIELD SUMMARY

DATE: December 11&12, 2010

REPORT NO.: 08

FILE NO. 33688

As specified in the dewatering work plan, water quality was analyzed through turbidity measurements taken directly from the discharge hose. The following table presents the hourly recordings of the groundwater treatment discharge. The turbidity results recorded with the use of a LaMotte 2020 Turbidimeter, measured in NTU's, and are listed in order relating to elapsed time from the initiated time of discharge.

Time	Reading (NTU)	Time	Reading (NTU)
1830 hours	1.5	0130 hours	1.3
1930 hours	0.8	0230 hours	3.5
2030 hours	0.95	0330 hours	0.75
2130 hours	0.7	0430 hours	0.5
2230 hours	0.85	0530 hours	0.65
2330 hours	0.9	0630 hours	0.75
2430 hours	1.1	0730 hours	0.7



- f. Site Resources continued earthwork operations in association with the installation of 8" and 4" water-line connections between Smith Street and the Centredale Manor. Earthwork processes implemented during the installation of the waterline was as followed; The total depth of the excavation never exceeded 4'6" below the surrounding grade. The sides of excavation were sloped to match a ratio of 1.5 horizontal to 1 vertical unit measurement. The top 1 foot of the excavation sides was bench cut in order to create an open excavation less than 4 feet in depth. The excavated material was placed in a narrow wind row along the eastern edge of the excavation, and placed beyond the excavation dimensions described above. Following the installation of both waterlines, the trench was backfilled in multiple one foot lifts of excavated material and compacted with multiple passes of the double drum vibratory trench compactor. The area which the excavated material was temporarily placed on top of, was over excavated approximately 6-inches and used as backfill material within the trench area. At no time during earthwork operations was any onsite material removed from within the work zone perimeter, with the exception of the asphalt binder sidewalk. Constant observations were made of the temporarily stock piled material to confirm no soil run-off or water extending beyond the limits of the wind row which potentially could contaminate the surrounding areas.
- g. On this date, 120 lineal feet of PVC 8" and 4" diameter piping and four 2" diameter electrical conduits were installed between the proposed meter house location and the Centredale Manor Building. Reference the attached field sketch for the approximate location pipe installation.
- h. Site Resources had excavated the area directly adjacent to Smith Street for the proposed connection of the ductile water lines to the City of North Providence water supply lateral connections. Both the 4" and 8" diameter city water lines were exposed. The excavation was backfilled with crushed stone to an elevation of the bottom inverts of the proposed waterline connections. Both the newly installed waterlines connected to the proposed meter house and to the City of North Providence's supply were left exposed to be pressure tested and chlorinated at a later date. Reference the attached field sketch for the approximate location of above mentioned operations.
- i. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations were either temporarily capped with clean fill or covered with 15mm poly sheeting.
- j. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.

FIELD SUMMARY

DATE: December 11&12, 2010

REPORT NO.: 08

FILE NO. 33688

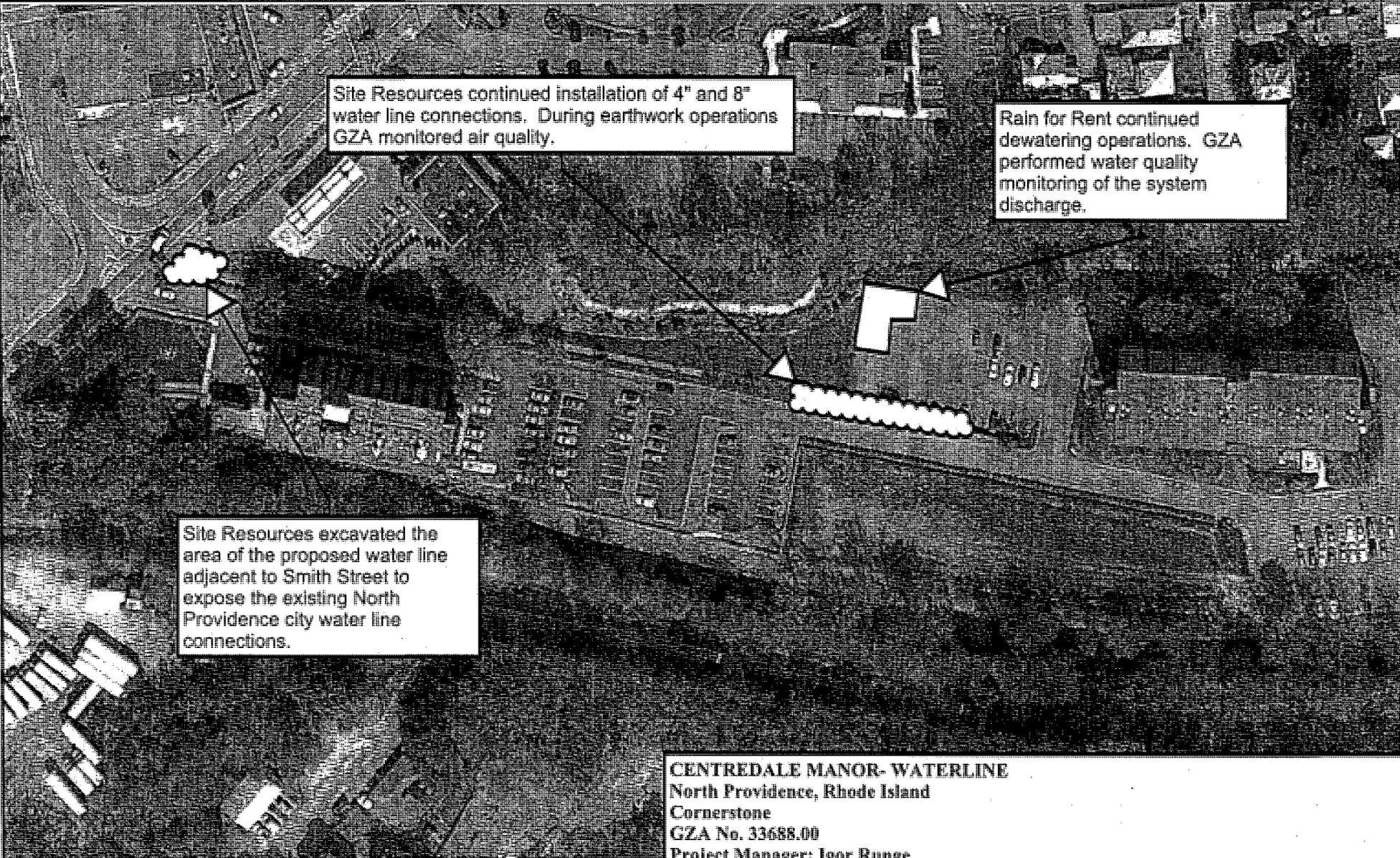
- k. On this date no equipment left the work zone. The attached Equipment Summary sheet summarizes all equipment operations associated with daily use, arrival and departure on site, and decontamination performance.
4. The undersigned and GZA representative Neal Westkott left at 0930 hours on Saturday, December 12, 2010.



ON-JOB TIME	<u>16.0</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>17.75</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:



Site Resources continued installation of 4" and 8" water line connections. During earthwork operations GZA monitored air quality.

Rain for Rent continued dewatering operations. GZA performed water quality monitoring of the system discharge.

Site Resources excavated the area of the proposed water line adjacent to Smith Street to expose the existing North Providence city water line connections.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -08 Date: 12-11 thru 12-12-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 12, 2010

REPORT NO.: 09

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS: Cloudy followed by rain, 40's

ATTACHMENTS: Field Sketch



1. The undersigned, Shane Robot, arrived on site at 0800 hours on Sunday, December 12, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1-Caterpillar Mini Excavator
- 1-Caterpillar M322D Rubber tire Excavator
- 1-Komatsu PC 300Steel Track Excavator
- 1- GMC C5500 Site Work Truck
- 1- Caterpillar 420E Rubber Tire Backhoe

Rain for Rent:

- 2-“Power Prime” Groundwater Pumps
- 1-Dual 10 Micron Fiber Filtration Unit
- 1-21,000 gallon Frac Tank
- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. During all earthwork operations associated with the water line installation, GZA implemented an air monitoring program as described in all work plan submittals. During trenching activities a DustTrak II Aerosol Monitor Model 8535, with all weather protective housing and tri-pod, was placed within 50 feet of earthwork activities. Dust levels were monitored in accordance with threshold levels described in the GZA Health and Safety program. During earthwork operations on this date, a maximum mg/m^3 recorded was approximately 0.355.
- c. VOC monitoring was achieved the use of an Ion Science PhoCheck Photovoltaic Impurity Detector (PID). Period readings were performed within the area of the excavation. A maximum of 0.2 PPM was recorded during earthwork operations on this date. No specific odors were observed with the excavation.
- d. Rain for Rent Water Treatment Company had completed installation of the 8” diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump. Approximately 300 lineal feet of the dewatering network was operational on this date generating an approximate flow rate of 40 gallons per minute from the well points into the Frac tank. The area which the dewatering network was extracting groundwater from was on the proposed trench alignment between 300 feet and 600 feet from the Smith Street connection. Reference the attached field sketch for approximate location of the dewatering operations.
- e. GZA GeoEnvironmental continued a water quality monitoring program of the dewatering treatment system prior to discharge into the tailrace located east of work area. As specified

FIELD SUMMARY

DATE: December 12, 2010

REPORT NO.: 09

FILE NO. 33688

in the dewatering work plan, water quality was analyzed through turbidity measurements taken directly from the discharge hose. The following table presents the hourly recordings of the groundwater treatment discharge. The turbidity results recorded with the use of a LaMotte 2020 Turbidimeter, measured in NTU's, and are listed in order relating to elapsed time from the initiated time of discharge.

Time	Reading (NTU)	Time	Reading (NTU)
0830 hours	1.5	1530 hours	8.9
0930 hours	2.0	1630 hours	4.2
1030 hours	1.1	1730 hours	0.3
1130 hours	0.5	1830 hours	1.2
1230 hours	0.75	1930 hours	1.3
1330 hours	0.95		
1430 hours	5.6		



- f. Site Resources continued earthwork operations in association with the installation of 8" and 4" water-line and electrical conduit connections between Smith Street and the Centredale Manor. Earthwork processes implemented during the installation of the waterline was as follows; The total depth of the excavation never exceeded 4'6" below the surrounding grade. The sides of excavation were sloped to match a ratio of 1.5 horizontal to 1 vertical unit measurement. The top 1 foot of the excavation sides was bench cut in order to create an open excavation less than 4 feet in depth. The excavated material was placed in a narrow wind row along the eastern edge of the excavation, and placed beyond the excavation dimensions described above. Following the installation of both waterlines, the trench was backfilled in multiple one foot lifts of excavated material and compacted with multiple passes of the double drum vibratory trench compactor. The area which the excavated material was temporarily placed on top of, was over excavated approximately 6-inches and used as backfill material within the trench area. At no time during earthwork operations was any onsite material removed from within the work zone perimeter, with the exception of the asphalt binder sidewalk. Constant observations were made of the temporarily stock piled material to confirm no soil run-off or water extending beyond the limits of the wind row which potentially could contaminate the surrounding areas. Geotextile fabric was applied to the completed trench area, from the meter house to the north end of Centerdale Manor's parking lot.
- g. On this date, 120 lineal feet of PVC 8" and 4" diameter piping and four- 2" diameter PVC electrical conduits were installed between the proposed meter house location and the Centredale Manor Building. Reference the attached field sketch for the approximate location pipe installation.
- h. Site Resources had to discontinue earthwork operations due to the heavy rain event which would affect work until the following morning. The rain began in the afternoon. All hay bales, silt fences, and geotextile fabric areas were checked to prepare for the heavy rain that was forecast for the area.
- i. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
- j. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
- k. On this date no equipment left the work zone.

FIELD SUMMARY

DATE: December 12, 2010

REPORT NO.: 09

FILE NO. 33688

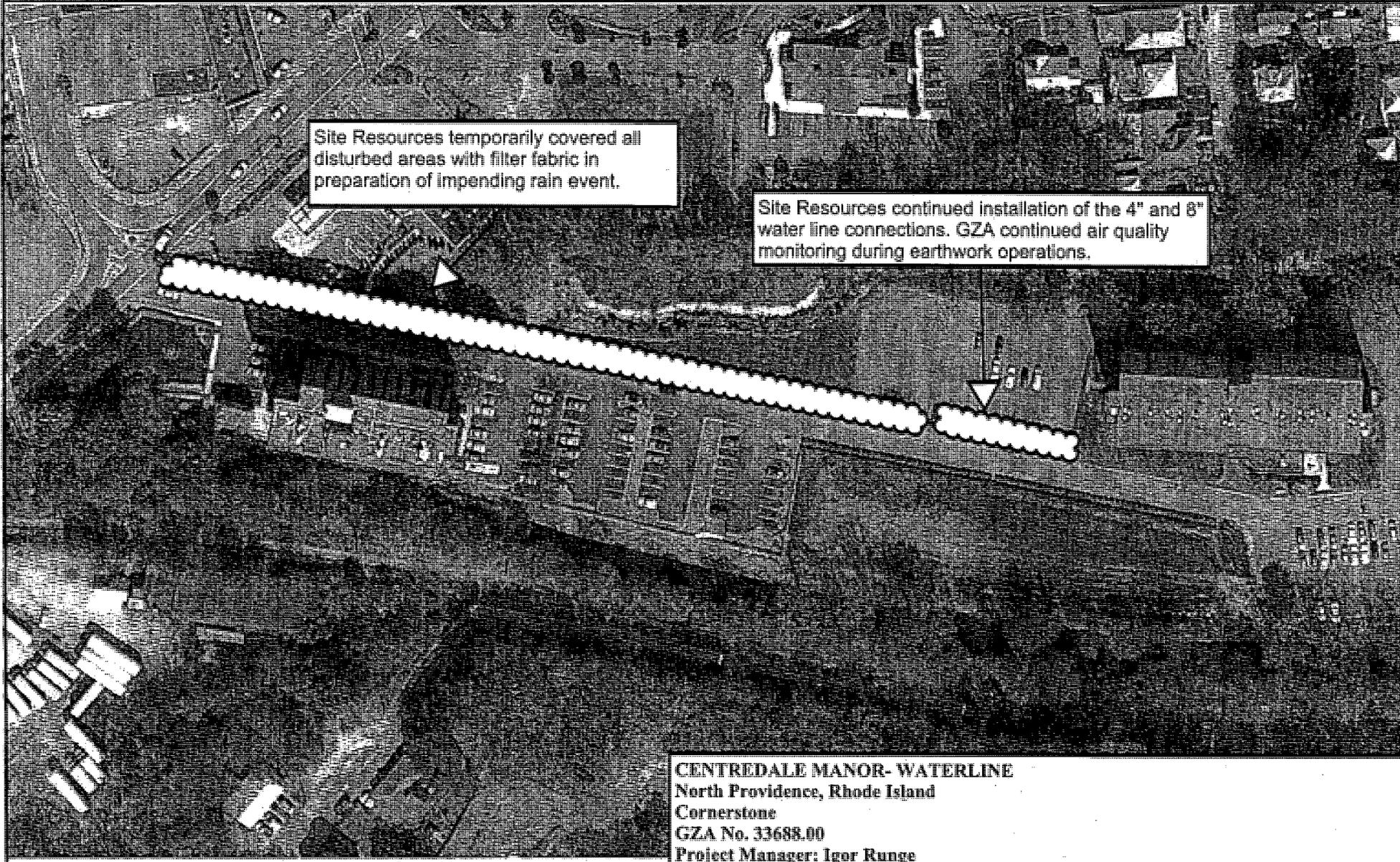
4. The undersigned, GZA representative Shane Robat, left at 2030 hours on Sunday, December 12, 2010.

ON-JOB TIME	<u>12.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>14.25</u>

Shane Robat
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:





Site Resources temporarily covered all disturbed areas with filter fabric in preparation of impending rain event.

Site Resources continued installation of the 4" and 8" water line connections. GZA continued air quality monitoring during earthwork operations.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -09 Date: 12-12-10
Drawn by: SJR

FIELD SUMMARY

DATE: December 12&13, 2010

REPORT NO.: 10

FILE NO. 33688

PROJECT:

Centerdale Manor – Water-line Replacement

CLIENT:

Cornerstone Corporation, Inc.

CONTRACTOR:

Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS:

Rain, then partly cloudy, 40's

ATTACHMENTS:

Field Sketch



1. The undersigned, Neal Westcott, arrived on site at 2000 hours on Sunday, December 12, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.
2. Equipment Operating:
 - Site Resources LLC:
 - 1-Caterpillar 444K Front End Loader
 - 1-Caterpillar Mini Excavator
 - 1-Caterpillar M322D Rubber tire Excavator
 - 1-Komatsu PC 300Steel Track Excavator
 - 1- GMC C5500 Site Work Truck
 - 1- Caterpillar 420E Rubber Tire Backhoe
 - Rain for Rent:
 - 2-"Power Prime" Groundwater Pumps
 - 1-Dual 10 Micron Fiber Filtration Unit
 - 1-21,000 gallon Frac Tank
 - 3- Carbon Adsorption Vessels
3. Work Performed and Observations Made:
 - a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
 - b. No earthwork operations were performed on this date due to the heavy rain event which produced greater than 2" of precipitation over the evening hours during which the undersigned was onsite. The undersigned was onsite to maintain onsite awareness of the potential of surface erosion and cross contamination of the excavated materials beyond the site perimeter. In a preventative measure, filter fabric was used to cover all disturbed areas of the site which could potentially be exposed to rain water erosion. During the evening hours several corrective actions were performed to maintain the site perimeter from being breached with surface erosion. Upon arrival on the morning of 13 December, Site Resources performed general site clean-up activities. It was observed by the undersigned that no signs of contamination had breached the hay bale and silt fence perimeter. Refer to the attached photographs.
 - c. The undersigned observed the groundwater treatment system during the rain event to insure overflow and pump failure did not occur. Rain for Rent was onsite to perform nightly check up on the treatment system. Rain for Rent switched the Frac tank discharge pump from automatic to manual, which enabled the treatment system to continuously discharge treated groundwater and prevent overflow in the Frat tank.
 - d. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.

FIELD SUMMARY

DATE: December 12&13, 2010

REPORT NO.: 10

FILE NO. 33688

e. On this date no equipment left the work zone.

4. The undersigned, GZA representative Neal Westkott, left at 0930 hours on Monday, December 13, 2010.



ON-JOB TIME	<u>13.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.5</u>
TOTAL TIME	<u>15.0</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:



Rain for Rent and GZA monitored dewatering and treatment system during the rain event.

Open excavations and stock piled excavated materials were covered with poly sheeting during the rain event.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -10 Date: 12-12 thru 12-13-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 13, 2010

REPORT NO.: 11

FILE NO. 33688

PROJECT:

Centerdale Manor – Water-line Replacement

CLIENT:

Cornerstone Corporation, Inc.

CONTRACTOR:

Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS:

Partly cloudy, 30's

ATTACHMENTS:

Field Sketch



1. The undersigned, Shane Robat arrived on site at 0730 hours on Monday, December 13, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.
2. Equipment Operating:
 - Site Resources LLC:
 - 1-Caterpillar 444K Front End Loader
 - 1-Caterpillar Mini Excavator
 - 1-Caterpillar M322D Rubber tire Excavator
 - 1-Komatsu PC 300Steel Track Excavator
 - 1- GMC C5500 Site Work Truck
 - 1- Caterpillar 420E Rubber Tire Backhoe
 - Rain for Rent:
 - 2-“Power Prime” Groundwater Pumps
 - 1-Dual 10 Micron Fiber Filtration Unit
 - 1-21,000 gallon Frac Tank
 - 3- Carbon Adsorption Vessels
3. Work Performed and Observations Made:
 - a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
 - b. During all earthwork operations associated with the water line installation, GZA implemented an air monitoring program as described in all work plan submittals. During trenching activities a DustTrak II Aerosol Monitor Model 8535, with all weather protective housing and tri-pod, was placed within 50 feet of earthwork activities. Dust levels were monitored in accordance with threshold levels described in the GZA Health and Safety program. During earthwork operations on this date, a maximum mg/m^3 recorded was approximately 0.1. VOC monitoring was achieved the use of an Ion Science PhoCheck Photovoltaic Impurity Detector (PID). Period readings were performed within the area of the excavation. A maximum of 0.0 PPM was recorded during earthwork operations on this date. No odors were observed with the excavation. Low readings were recorded due to the saturated conditions of soil onsite.
 - c. Rain for Rent Water Treatment Company had completed installation of the 8” diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump. Approximately 300 lineal feet of the dewatering network was operational on this date generating an approximate flow rate between 50 gallons per minute from the well points into the Frac tank. The area which the dewatering network was extracting groundwater from was on the proposed trench alignment between 500 feet and 800 feet from the Smith Street connection. Reference the attached field sketch for approximate location of the dewatering operations.
 - d. GZA GeoEnvironmental continued a water quality monitoring program of the dewatering treatment system. As specified in the dewatering work plan, water quality was analyzed

FIELD SUMMARY

DATE: December 13, 2010

REPORT NO.: 11

FILE NO. 33688

through turbidity measurements taken directly from the discharge hose. The following table presents the hourly recordings of the groundwater treatment discharge. The turbidity results recorded with the use of a LaMotte 2020 Turbidimeter, measured in NTU's, and are listed in order relating to elapsed time from the initiated time of discharge.

Time	Reading (NTU)
0830 hours	30.1
1030 hours	14.2
1230 hours	15.4
1430 hours	11.0
1630 hours	6.5
1830 hours	4.5



- e. Site Resources continued earthwork operations in association with the installation of 8" and 4" PVC water-line, and the four 2" diameter PVC electrical conduit connections between Smith Street and the Centredale Manor. Earthwork processes implemented during the installation of the waterline was as followed; The total depth of the excavation never exceeded 4'6" below the surrounding grade. The sides of excavation were sloped to match a ratio of 1.5 horizontal to 1 vertical unit measurement. The top 1 foot of the excavation sides was bench cut in order to create an open excavation less than 4 feet in depth. The excavated material was placed in a narrow wind row along the eastern edge of the excavation, and placed beyond the excavation dimensions described above. Following the installation of both waterlines, the trench was backfilled in multiple one foot lifts of excavated material and compacted with multiple passes of the double drum vibratory trench compactor. The area which the excavated material was temporarily placed on top of, was over excavated approximately 6-inches and used as backfill material within the trench area. At no time during earthwork operations was any onsite material removed from within the work zone perimeter, with the exception of the asphalt binder sidewalk. Constant observations were made of the temporarily stock piled material to confirm no soil run-off or water was extending beyond the limits of the wind row which potentially could contaminate the surrounding areas.
- f. On this date, 40 lineal feet of PVC 8" and 4" diameter piping and electrical conduits were installed between the proposed meter house location and the Centredale Manor Building. Reference the attached field sketch for the approximate location of pipe installation.
- g. Site Resources completed installation of the fire hydrant and shut-off valve located directly north of the existing parking area.
- h. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
- i. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
- j. On this date no equipment left the work zone.

- 4. The undersigned, GZA representative Shane Robat, left at 1930 hours on Monday, December 13, 2010.

FIELD SUMMARY

DATE: December 13, 2010

REPORT NO.: 11

FILE NO. 33688

ON-JOB TIME	<u>12.0</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>13.75</u>

Shane Robot
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:





Rain for Rent continued monitoring of the dewatering and treatment system following the over night rain event.

Site Resources continued installation of conduits and water line connections.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -11 Date: 12-13-10
Drawn by: SJR

FIELD SUMMARY

DATE: December 13&14, 2010

REPORT NO.: 12

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS: Clear, 10's-20's

ATTACHMENTS: Field Sketch



1. The undersigned, Neal Westcott arrived on site at 1900 hours on Monday, December 13, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1-Caterpillar Mini Excavator
- 1-Caterpillar M322D Rubber tire Excavator
- 1-Komatsu PC 300Steel Track Excavator
- 1- GMC C5500 Site Work Truck
- 1- Caterpillar 420E Rubber Tire Backhoe

Rain for Rent:

- 2-“Power Prime” Groundwater Pumps
- 1-Dual 10 Micron Fiber Filtration Unit
- 1-21,000 gallon Frac Tank
- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. During all earthwork operations associated with the water line installation, GZA implemented an air monitoring program as described in all work plan submittals. During trenching activities a DustTrak II Aerosol Monitor Model 8535, with all weather protective housing and tri-pod, was placed within 50 feet of earthwork activities. Dust levels were monitored in accordance with threshold levels described in the GZA Health and Safety program. During earthwork operations on this date, a maximum mg/m³ recorded was approximately 0.3. VOC monitoring was achieved the use of an Ion Science PhoCheck Photovoltaic Impurity Detector (PID). Period readings were performed within the area of the excavation. A maximum of 1.0 PPM was recorded during earthwork operations on this date. No odors were observed with the excavation. Low readings were recorded due to the saturated conditions of soil onsite.
- c. Rain for Rent Water Treatment Company had completed installation of the 8” diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump. Approximately 300 linear feet of the dewatering network was operational on this date generating an approximate flow rate between 30 gallons per minute from the well points into the Frac tank. The area which the dewatering network was extracting groundwater from was on the proposed trench alignment between 600 feet and 900 feet from the Smith Street connection. Reference the attached field sketch for approximate location of the dewatering operations.
- d. GZA GeoEnvironmental continued a water quality monitoring program of the dewatering treatment system. As specified in the dewatering work plan, water quality was analyzed

FIELD SUMMARY

DATE: December 13&14, 2010

REPORT NO.: 12

FILE NO. 33688

through turbidity measurements taken directly from the discharge hose. The following table presents the hourly recordings of the groundwater treatment discharge. The turbidity results recorded with the use of a LaMotte 2020 Turbidimeter, measured in NTU's, and are listed in order relating to elapsed time from the initiated time of discharge.

Time	Reading (NTU)
2030 hours	0.9
2230 hours	11.5
0130 hours	1.6
0330 hours	2.5
0530 hours	5.2



- e. Site Resources continued earthwork operations with the installation of 8" and 4" PVC water-line, and the four 2" diameter PVC electrical conduit connections between Smith Street and the Centredale Manor. Earthwork processes implemented during the installation of the waterline was as follows; The total depth of the excavation never exceeded 4'6" below the surrounding grade. The sides of excavation were sloped to match a ratio of 1.5 horizontal to 1 vertical unit measurement. The top 1 foot of the excavation sides was bench cut in order to create an open excavation less than 4 feet in depth. The excavated material was placed in a narrow wind row along the eastern edge of the excavation, and placed beyond the excavation dimensions described above. Following the installation of both waterlines, the trench was backfilled in multiple one foot lifts of excavated material and compacted with multiple passes of the double drum vibratory trench compactor. The area which the excavated material was temporarily placed on top of, was over excavated approximately 6-inches and used as backfill material within the trench area. At no time during earthwork operations was any onsite material removed from within the work zone perimeter, with the exception of the asphalt binder sidewalk. Constant observations were made of the temporarily stock piled material to confirm no soil run-off or water was extending beyond the limits of the wind row which potentially could contaminate the surrounding areas.
 - f. On this date, 120 lineal feet of PVC 8" and 4" diameter piping and electrical conduits were installed between the proposed meter house location and the Centredale Manor Building. Associated 90° elbow and exterior shut off valves were installed in the area directly north of the main building entrance of the Centredale Manor. Reference the attached field sketch for the approximate location of pipe installation.
 - g. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
 - h. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
 - i. On this date no equipment left the work zone.
4. The undersigned and GZA representative Neal Westkott left at 0700 hours on Tuesday, December 14, 2010.

ON-JOB TIME	<u>12.0</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>13.75</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.

FIELD SUMMARY

DATE: December 13&14, 2010

REPORT NO.: 12

FILE NO. 33688

REVIEWED BY:



GZA continued water quality monitoring of the dewatering system.

Site resources continued installation of the water line connections. GZA performed air quality monitoring during earthwork operations.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -12 Date:12- 13 thru 12-14-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 14, 2010

REPORT NO.: 13

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS: Sunny, 10's

ATTACHMENTS: Field Sketch



1. The undersigned, Shane Robat arrived on site at 0700 hours on Tuesday, December 14, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1-Caterpillar Mini Excavator
- 1-Caterpillar M322D Rubber tire Excavator
- 1-Komatsu PC 300Steel Track Excavator
- 1- GMC C5500 Site Work Truck
- 1- Caterpillar 420E Rubber Tire Backhoe

Rain for Rent:

- 2-"Power Prime" Groundwater Pumps
- 1-Dual 10 Micron Fiber Filtration Unit
- 1-21,000 gallon Frac Tank
- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. During all earthwork operations associated with the water line installation, GZA implemented an air monitoring program as described in all work plan submittals. During trenching activities a DustTrak II Aerosol Monitor Model 8535, with all weather protective housing and tri-pod, was placed with 50 feet of earthwork activities. Dust levels were monitored in accordance with threshold levels described in the GZA Health and Safety program. During earthwork operations on this date, a maximum mg/m^3 recorded was approximately 0.455. VOC monitoring was achieved the use of an Ion Science PhoCheck Photovoltaic Impurity Detector (PID). Period readings were performed within the area of the excavation. A maximum of 0.0 PPM was recorded during earthwork operations on this date. No odors were observed with the excavation. Low readings were recorded due to the saturated conditions of soil onsite.
- c. Rain for Rent Water Treatment Company had completed installation of the 8" diameter PVC dewatering manifold, tributary well point attachment hoses, and manifold dewatering pump. Approximately 200 lineal feet of the dewatering network was operational on this date generating an approximate flow rate of 40 gallons per minute from the well points into the Frac tank. The area which the dewatering network was extracting groundwater from was on the proposed trench alignment between 730 feet and 930 feet from the Smith Street connection. Reference the attached field sketch for approximate location of the dewatering operations.
- d. GZA GeoEnvironmental continued a water quality monitoring program of the dewatering treatment system. As specified in the dewatering work plan, water quality was analyzed

FIELD SUMMARY

DATE: December 14, 2010

REPORT NO.: 13

FILE NO. 33688

through turbidity measurements taken directly from the discharge hose. The following table presents the hourly recordings of the groundwater treatment discharge. The turbidity results recorded with the use of a LaMotte 2020 Turbidimeter, measured in NTU's.

Time	Reading (NTU)
0930 hours	4.1
1030 hours	9.3
1300 hours	4.5
1430 hours	8.3



- e. Site Resources continued earthwork operations in association with the installation of 8" and 4" PVC water-line, and the four 2" diameter PVC electrical conduit connections between Smith Street and the Centredale Manor. Earthwork processes implemented during the installation of the waterline was as follows; The total depth of the excavation never exceeded 4'6" below the surrounding grade. The sides of excavation were sloped to match a ratio of 1.5 horizontal to 1 vertical unit measurement. The top 1 foot of the excavation sides was bench cut in order to create an open excavation less than 4 feet in depth. The excavated material was placed in a narrow wind row along the eastern edge of the excavation, and placed beyond the excavation dimensions described above. Following the installation of both waterlines, the trench was backfilled in multiple one foot lifts of excavated material and compacted with multiple passes of the double drum vibratory trench compactor. The area which the excavated material was temporarily placed on top of, was over excavated approximately 6-inches and used as backfill material within the trench area. At no time during earthwork operations was any onsite material removed from within the work zone perimeter, with the exception of the asphalt binder sidewalk. Constant observations were made of the temporarily stock piled material to confirm no soil run-off or water was extending beyond the limits of the wind row which potentially could contaminate the surrounding areas.
 - f. On this date, 30 lineal feet of PVC 8" and 4" diameter piping and electrical conduits were installed directly north of the main entrance into the Centredale Manor building, and completed the installation of the PVC water line. Reference the attached field sketch for the approximate location of pipe installation.
 - g. Site Resources installed the fire hydrant located south of the existing Centerdale Manor parking area.
 - h. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
 - i. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
 - j. On this date no equipment left the work zone.
4. The undersigned and GZA representative Shane Robat left at 1930 hours on Tuesday, December 14, 2010.

ON-JOB TIME	<u>12.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>14.25</u>

Shane Robat
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:



Site Resources completed the exterior water line connections. One fire hydrant was installed. GZA monitored air quality during earthwork operations.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -13 Date: 12-14-10
Drawn by: SJR

FIELD SUMMARY

DATE: December 15, 2010

REPORT NO.: 14

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS: Sunny, 10's

ATTACHMENTS: Field Sketch



1. The undersigned, Neal Westcott arrived on site at 0700 hours on Wednesday, December 15, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1-Caterpillar Mini Excavator
- 1-Caterpillar M322D Rubber tire Excavator
- 1-Komatsu PC 300Steel Track Excavator
- 1- GMC C5500 Site Work Truck
- 1- Caterpillar 420E Rubber Tire Backhoe

Rain for Rent:

- 2-“Power Prime” Groundwater Pumps
- 1-Dual 10 Micron Fiber Filtration Unit
- 1-21,000 gallon Frac Tank
- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. During all earthwork operations associated with the water line installation, GZA implemented an air monitoring program as described in all work plan submittals. During trenching activities a DustTrak II Aerosol Monitor Model 8535, with all weather protective housing and tri-pod, was placed with 50 feet of earthwork activities. Dust levels were monitored in accordance with threshold levels described in the GZA Health and Safety program. During earthwork operations on this date, a maximum mg/m^3 recorded was approximately 0.29. VOC monitoring was achieved the use of an Ion Science PhoCheck Photovoltaic Impurity Detector (PID). Period readings were performed within the area of the excavation. A maximum of 0.0 PPM was recorded during earthwork operations on this date. No odors were observed with the excavation. Low readings were recorded due to the saturated conditions of soil onsite.
- c. Rain for Rent began breakdown of connection hoses and manifold piping. Before disconnecting all manifold couplings, Rain for Rent had rinsed fresh water through the manifold. Clean potable water was flushed through the operating treatment network to initiate decontamination. Final breakdown is planned to commence on the following day in order for continuous flushing of the dewatering network to continue during the over night hours.
- d. GZA GeoEnvironmental continued a water quality monitoring program of the dewatering treatment system. As specified in the dewatering work plan, water quality was analyzed through turbidity measurements taken directly from the discharge hose. The following

FIELD SUMMARY

DATE: December 15, 2010

REPORT NO.: 14

FILE NO. 33688

table presents the hourly recordings of the groundwater treatment discharge. The turbidity results recorded with the use of a LaMotte 2020 Turbidimeter, measured in NTU's.

Time	Reading (NTU)
0800 hours	0.2
1130 hours	0.1
1315 hours	0.3
1500 hours	1.3



- e. Site Resources continued earthwork operations in association with the installation of 8" and 4" ductile water-line connections between the newly installed ductile water lines and the existing City of North Providence water supply connections. Earthwork processes implemented during the installation of the waterline was as follows; the total depth of the excavation never exceeded 4'6" below the surrounding grade. The sides of excavation were sloped to match a ratio of 1.5 horizontal to 1 vertical unit measurement. The top 1 foot of the excavation sides was bench cut in order to create an open excavation less than 4 feet in depth. The excavated material was placed in a narrow wind row along the eastern edge of the excavation, and placed beyond the excavation dimensions described above. Following the installation of both waterlines, the trench was backfilled in multiple one foot lifts of excavated material and compacted with multiple passes of the double drum vibratory trench compactor. The area which the excavated material was temporarily placed on top of, was over excavated approximately 6-inches and used as backfill material within the trench area. At no time during earthwork operations was any onsite material removed from within the work zone perimeter, with the exception of the asphalt binder sidewalk. Constant observations were made of the temporarily stock piled material to confirm no soil run-off or water was extending beyond the limits of the wind row.
- f. Site Resources excavated, backfilled and installed two 4" diameter PVC fiber optic conduits between Smith Street and the Centredale Manor parking area. The conduits were placed approximately 12" below the existing grade. Reference the field sketch for approximate location of the earthwork mentioned above.
- g. On the previous date Bragger Engineering had pressure tested and chlorinated the ductile 4" and 8" waterlines between the proposed meter house and Smith Street prior to the water lines were tied in. On this date, Bragger pressure tested the PVC 4" and 8" water lines between the proposed meter house and the mechanical room of the Centredale Manor. Chlorination of both lines would be performed on the following date.
- h. Site Resources filled the existing "hot box" concrete structure and the previously operational 8" steel water line connecting to the Centredale Manor with approximately 31 cubic yards of flowable fill. Site also poured the concrete pad for the new meter house with approximately 5 cubic yards of 3500 psi concrete. The poured concrete pad and exposed water line connections were covered with thermal blankets and heated to prevent cold exposure.
- i. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations were either temporarily capped with clean fill or covered with 15mm poly sheeting.
- j. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
- k. On this date no equipment left the work zone.

FIELD SUMMARY

DATE: December 15, 2010

REPORT NO.: 14

FILE NO. 33688

4. The undersigned and GZA representative Neal Westkott left at 1830 hours on Wednesday, December 15, 2010.



ON-JOB TIME	<u>11.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>13.25</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:

Site Resources filled the existing "hot box" concrete structure and existing water line with flowable fill on this date. Site also poured the concrete pad for the new meter house.

Site Resources installed two 4" PVC fiber optic conduits.

Site Resources connected the newly installed 4" and 8" ductile water lines to the City of North Providence water supply connections. GZA monitored air quality during earthwork operations.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -14 Date: 12-15-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 16, 2010

REPORT NO.: 15

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS: Sunny, 20's

ATTACHMENTS: Field Sketch



1. The undersigned, Neal Westcott arrived on site at 0830 hours on Thursday, December 16, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1- Caterpillar Mini Excavator
- 1-Caterpillar M322D Rubber tire Excavator
- 1-Komatsu PC 300Steel Track Excavator
- 1- GMC C5500 Site Work Truck
- 1- Caterpillar 420E Rubber Tire Backhoe
- 1- Caterpillar D6 Bulldozer

Rain for Rent:

- 2-“Power Prime” Groundwater Pumps
- 1-Dual 10 Micron Fiber Filtration Unit
- 1-21,000 gallon Frac Tank
- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. Site Resources performed final grading of the surface material in trench alignment prior to placing filter fabric over all areas which were disturbed during construction activities. During trenching activities a DustTrak II Aerosol Monitor Model 8535, with all weather protective housing and tri-pod, was placed with 50 feet of earthwork activities. Dust levels were monitored in accordance with threshold levels described in the GZA Health and Safety program. During earthwork operations on this date, a maximum mg/m^3 recorded was approximately 0.013. VOC monitoring was achieved the use of an Ion Science PhoCheck Photovoltaic Impurity Detector (PID). Period readings were performed within the area of the excavation. A maximum of 0.0 PPM was recorded during earthwork operations on this date. No odors were observed with the excavation.
- c. Site Resources mobilized a Caterpillar D6 bulldozer to the site on this date.
- d. Site Resources initiated placement of clean borrowed sand material over the filter fabric in the northern section of the site. Reference the attached field sketch for approximate of capping operations.
- e. Rain for Rent completed breakdown of connection hoses and manifold piping. All major components of the dewatering and treatment system were allowed to gravity drain the remaining contained groundwater through the treatment system.
- f. GZA GeoEnvironmental continued a water quality monitoring program of the dewatering treatment system. As specified in the dewatering work plan, water quality was analyzed through turbidity measurements taken directly from the discharge hose. The following

FIELD SUMMARY

DATE: December 16, 2010

REPORT NO.: 15

FILE NO. 33688

table presents the hourly recordings of the groundwater treatment discharge. The turbidity results recorded with the use of a LaMotte 2020 Turbidimeter, measured in NTU's.

Time	Reading (NTU)
0730 hours	0.2
1000 hours	0.05
1200 hours	0.1
1510 hours	0.1

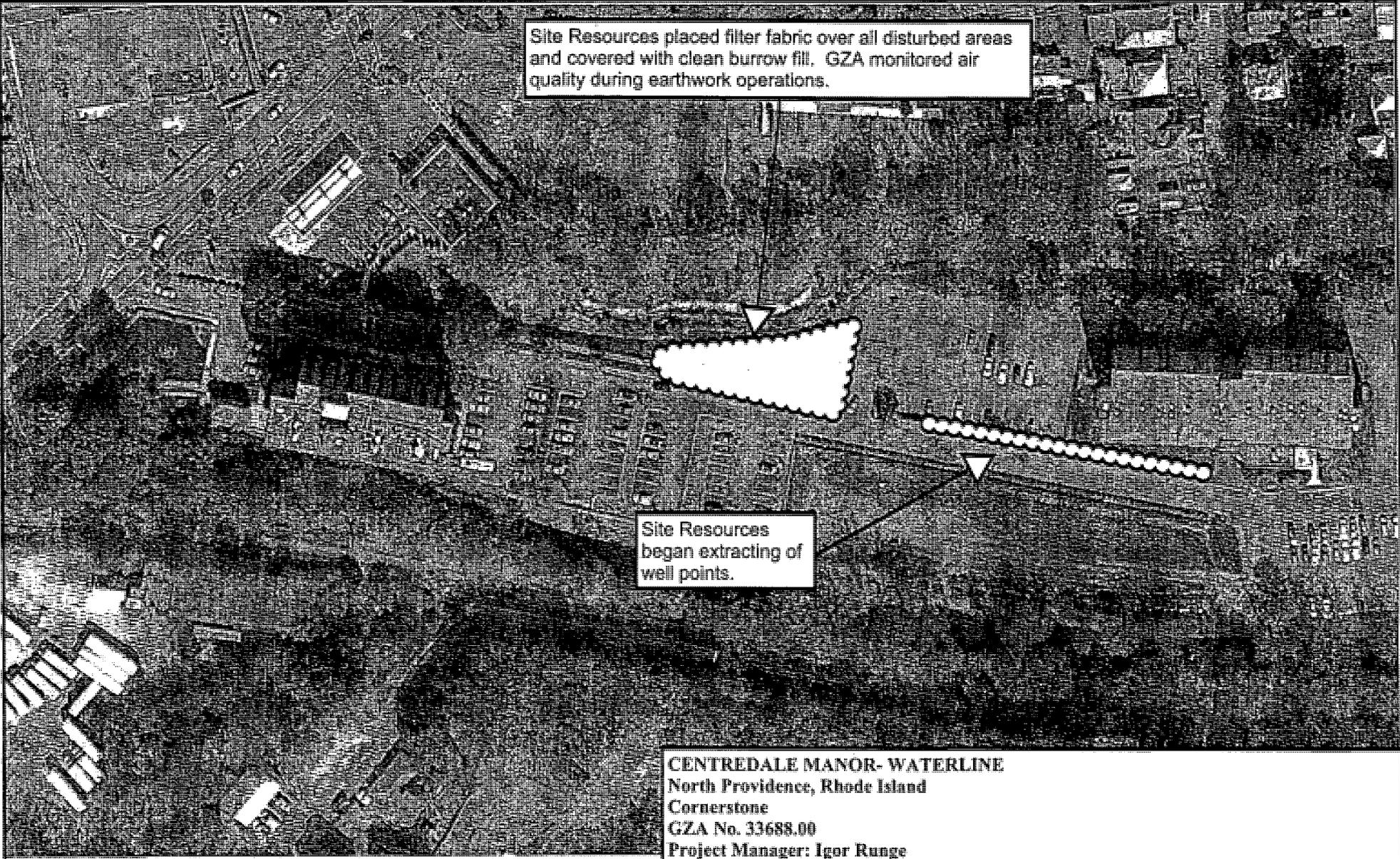


- g. Site Resources began extracting well points and backfilling boreholes with clean sand fill. The contaminated well-points were placed on loading rack with all manifold piping in order to be decontaminated.
 - h. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
 - i. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
 - j. On this date no equipment left the work zone.
4. The undersigned and GZA representative Neal Westkott left at 1830 hours on Thursday, December 16, 2010.

ON-JOB TIME	<u>10.0</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>11.75</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:

An aerial photograph of a construction site. The image shows a large area of cleared land with various structures and equipment. A white, scalloped-edged rectangular area is highlighted in the center, with an arrow pointing to it from a text box below. A dashed line with small circles along its length extends from the right side of the scalloped area towards the right edge of the image, with an arrow pointing to it from a text box above. The overall scene is a mix of dark, textured ground and lighter, more structured areas.

Site Resources placed filter fabric over all disturbed areas and covered with clean burrow fill. GZA monitored air quality during earthwork operations.

Site Resources began extracting of well points.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -15 Date: 12-16-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 17, 2010

REPORT NO.: 16

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS: Sunny, 20's

ATTACHMENTS: Field Sketch



1. The undersigned, Neal Westkott arrived on site at 0700 hours on Friday, December 17, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1-Caterpillar M322D Rubber tire Excavator
- 1-Komatsu PC 300Steel Track Excavator
- 1- GMC C5500 Site Work Truck
- 1- Caterpillar 420E Rubber Tire Backhoe
- 1- Caterpillar D6 Bulldozer

Rain for Rent:

- 2-“Power Prime” Groundwater Pumps
- 1-Dual 10 Micron Fiber Filtration Unit
- 1-21,000 gallon Frac Tank
- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. Site Resources constructed a decontamination area for the equipment. The decontamination wash pit consisted of excavating 6” below grade, lining the area with poly sheeting, and backfilling the area with clean washed crushed stone. The wash area was contained with a perimeter of hay bales which the poly sheeting extended to. All equipment was decontaminated on site, including all dewatering/ treatment equipment provided by Rain for Rent. The Frac tank was drained and decontaminated with the use of a power steamer and was allowed to drain through the filtration units. All connection hoses, manifold piping and well points were decontaminated within the constructed decontamination area by Sol-Val Power Washing Company. All of Site Resources earthwork equipment was decontaminated by Sol-Val within the decontamination area. Any equipment remaining onsite was utilized for placement of the clean fill material. Reference the attached photographs of equipment being decontaminated.
- c. Site Resources demobilized the following equipment on this date; Caterpillar M322D Rubber tire Excavator, Komatsu PC 300Steel Track Excavator , GMC C5500 Site Work Truck, and a Caterpillar 420E Rubber Tire Backhoe. Rain for Rent demobilized all equipment on this date, with the exception of the carbon adsorption vessels.
- d. Site Resources completed extracting well points and backfilling boreholes with clean sand fill. The contaminated well-points were placed on loading rack with all manifold piping in order to be decontaminated.
- e. Site Resources completed placing filter fabric across all disturbed areas in the trench alignment.

FIELD SUMMARY

DATE: December 17, 2010

REPORT NO.: 16

FILE NO. 33688

- f. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
- g. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.

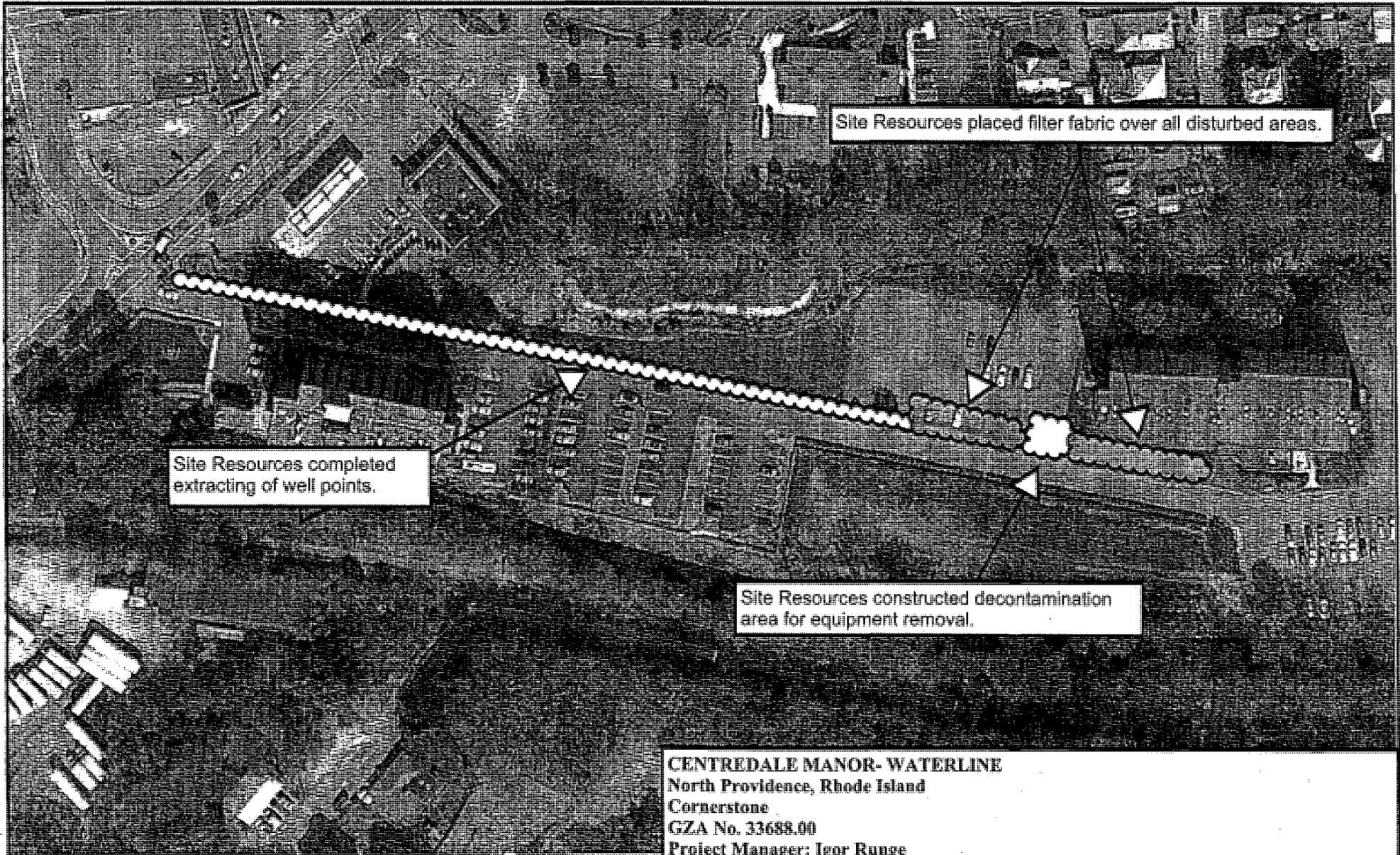


- 4. The undersigned and GZA representative Neal Westkott left at 1730 hours on Friday, December 17, 2010.

ON-JOB TIME	<u>10.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>12.25</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:



Site Resources placed filter fabric over all disturbed areas.

Site Resources completed extracting of well points.

Site Resources constructed decontamination area for equipment removal.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -16 Date: 12-17-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 20, 2010

REPORT NO.: 17

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS: Sunny, 20's

ATTACHMENTS: Field Sketch



1. The undersigned, Neal Westkott arrived on site at 0800 hours on Monday, December 20, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1- Caterpillar Mini Excavator
- 1- Caterpillar D6 Bulldozer

Rain for Rent:

- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. Site Resources completed extracting well points and backfilling boreholes with clean sand fill. The contaminated well-points were placed on loading rack with all manifold piping in order to be decontaminated.
- c. Site Resources completed placing filter fabric across all disturbed areas in the trench alignment.
- d. Site Resources continued placing clean borrowed sand material over the filter fabric in the area between the meter house and the parking area and directly in front of the Centredale Manor building. Reference the attached field sketch for approximate of capping operations.
- e. W. Walsh Company was onsite to disconnect and remove the temporary water line. All connections were disconnected and off loaded from Steere Ave and the Centredale Manor property.
- f. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
- g. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.

4. The undersigned and GZA representative Neal Westkott left at 1530 hours on Monday, December 20, 2010.

ON-JOB TIME	<u>7.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>9.75</u>

Neal Westkott
PREPARED BY:

FIELD SUMMARY

DATE: December 20, 2010

REPORT NO.: 17

FILE NO. 33688

Igor Runge, Ph.D., P.H.
REVIEWED BY:





Site Resources continued placing clean fill over disturbed areas covered with filter fabric.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -17 Date: 12-20-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 21, 2010

REPORT NO.: 18

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS: Sunny, 20's

ATTACHMENTS: Field Sketch



1. The undersigned, Neal Westkott arrived on site at 0800 hours on Tuesday, December 21, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.
2. Equipment Operating:
 - Site Resources LLC:
 - 1-Caterpillar 444K Front End Loader
 - 1- Caterpillar Mini Excavator
 - 1- Caterpillar D6 Bulldozer
 - Rain for Rent:
 - 3- Carbon Adsorption Vessels
3. Work Performed and Observations Made:
 - a. Site Resources maintained a continuous perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
 - b. Site Resources placed approximately 4 cubic yards of flowable fill in to the excavation located in the Centredale Manor mechanical room.
 - c. Site Resources completed placing clean borrowed sand material over the filter fabric in the area between the meter house and Smith Street and in the two parking area entrances. Reference the attached field sketch for approximate of capping operations.
 - d. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
 - e. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.
4. The undersigned and GZA representative Neal Westkott left at 1530 hours on Tuesday, December 21, 2010.

ON-JOB TIME	<u>7.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>9.75</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:



Site Resources completed placing clean fill on this date.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -18 Date: 12-21-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 22, 2010

REPORT NO.: 19

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS: Sunny, 30's

ATTACHMENTS: Field Sketch



1. The undersigned, Neal Westkott arrived on site at 0800 hours on Wednesday, December 22, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.

2. Equipment Operating:

Site Resources LLC:

- 1-Caterpillar 444K Front End Loader
- 1- Caterpillar Mini Excavator
- 1- Caterpillar D6 Bulldozer

Rain for Rent:

- 3- Carbon Adsorption Vessels

3. Work Performed and Observations Made:

- a. Site Resources began breakdown of perimeter of temporary fencing, hay bales, and silt fencing around the entire work zone.
- b. Site Resources removed the previously operational fire hydrant located south of the Centredale Manor main entrance. The existing hydrant was cut several inches below grade and the dead water line was backfilled with the sand borrow material.
- c. Site Resources demobilized the Caterpillar Bulldozer, Caterpillar Mini Excavator, and the Caterpillar Front End Loader offsite. All pieces equipment were considered non-contaminated as both were utilized only for the placement of clean sand borrow. Reference the attached field sketch for approximate of capping operations.
- d. Site Resources backfilled and capped the construction pad entrance into the cap area located south of the Centredale Manor Building. The filter fabric and crushed stone were pulled back from the pavement to prevent surface erosion into the roadway and backfilled with clean borrow material.
- e. Site Resources removed all drilling spoils and contaminated items for disposal were placed in the double lined dumpster and shipped off site to be disposed of as hazardous material.
- f. All excess stock piled borrow material was loaded and hauled off site and was considered non-contaminated material.
- g. Site Resources constructed and installed the new meter house structure. The structure was placed on the previously constructed concrete pad.
- h. Upon completion of earthwork operations on this date, all areas of the work zone which potentially could have been contaminated during daily operations was either temporarily capped with clean fill or covered with 15mm poly sheeting.
- i. During all earthwork operations, any personnel who entered the work zone are OSHA 40 hour HAZWOPER trained and maintained a Level D PPE protection during the course of the day. Personal protective equipment implemented during drilling operations entailed safety glasses, hard hats, steel toe boots, booties, TyVek suits, inner and outer gloves, and dust masks.

FIELD SUMMARY

DATE: December 22, 2010

REPORT NO.: 19

FILE NO. 33688

4. The undersigned and GZA representative Neal Westkott left at 1530 hours on Wednesday, December 22, 2010.

ON-JOB TIME	<u>7.5</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.75</u>
TOTAL TIME	<u>9.75</u>

Neal Westkott
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:





Site Resources completed fabricating the new meter house structure.

Site Resources removed existing fire hydrant and backfilled water line with sand.

CENTREDALE MANOR- WATERLINE
North Providence, Rhode Island
Cornerstone
GZA No. 33688.00
Project Manager: Igor Runge
Field Sketch -19 Date: 12-22-10
Drawn by: NDW

FIELD SUMMARY

DATE: December 23, 2010

REPORT NO.: 20

FILE NO. 33688

PROJECT: Centerdale Manor – Water-line Replacement

CLIENT: Cornerstone Corporation, Inc.

CONTRACTOR: Site Resources, LLC, Gem Plumbing, Inc., Rain for Rent Company (Dewatering), W. Walsh Company (Temporary Water),

WEATHER CONDITIONS: Sunny, 30's

ATTACHMENTS: None



1. The undersigned, James Marsland arrived on site at 0700 hours on Thursday, December 23, 2010 to observe earthwork operations for the proposed water line replacement at 2074 Smith Street, North Providence, RI.
2. Equipment Operating:
 - Site Resources LLC:
None
 - Rain for Rent:
3- Carbon Adsorption Vessels
3. Work Performed and Observations Made:
 - a. Site Resources completed breakdown of perimeter of temporary fencing around the entire work zone. Hay bales/silt fence were left in place in the utility corridor area to help reduce surface erosion into the surrounding areas.
 - b. Site Resources sub contracted a street cleaning company to perform an overall site clean-up. Clean up was delayed due to the current site conditions.
 - c. Gem Plumbing and Heating installed heating units inside the newly constructed meter house unit.
4. The undersigned and GZA representative James Marsland left at 1200 hours on Thursday, December 23, 2010.

ON-JOB TIME	<u>5.0</u>
TRAVEL TIME	<u>1.0</u>
OFFICE TIME	<u>0.5</u>
TOTAL TIME	<u>6.5</u>

James Marsland
PREPARED BY:

Igor Runge, Ph.D., P.H.
REVIEWED BY:



APPENDIX G
PHOTOGRAPHS



Description: Clean fill staging area
Name: 6Dec2010 016



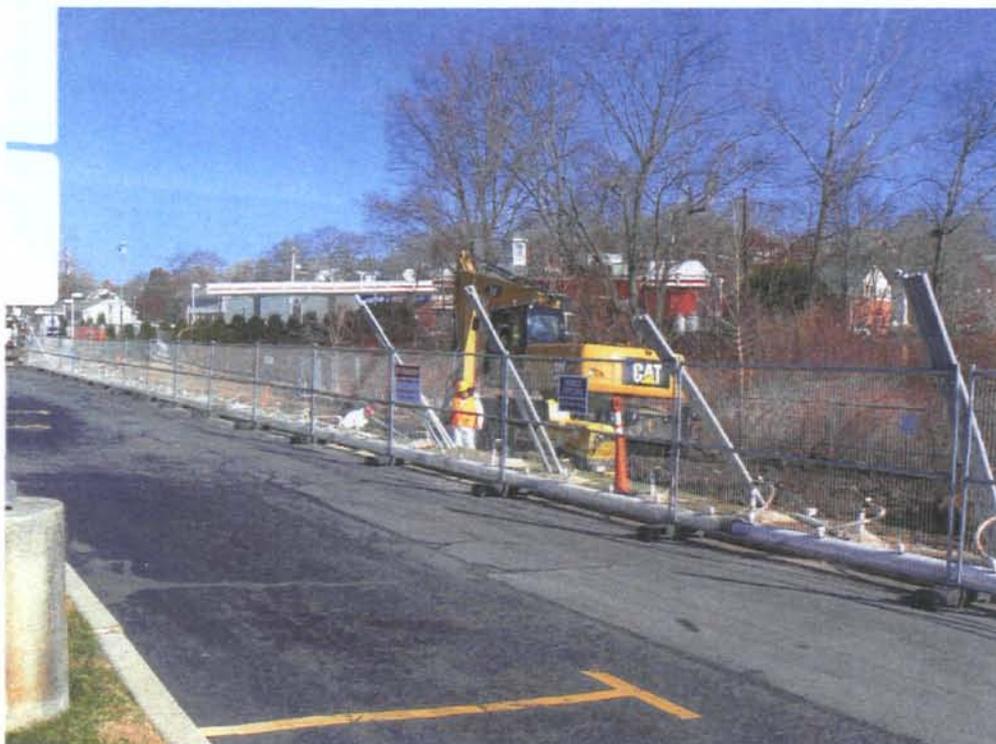
Description: Installation of dewatering components
Name: 6Dec2010 019



Description: Installation of dewatering components
Name: 6Dec2010 021



Description: Temporary waterline
Name: 6Dec2010 013



Description: Trench excavation
Name: 11Dec2010 001



Description: Trench excavation
Name: 11Dec2010 002



Description: Trench excavation
Name: 11Dec2010 004



Description: "Hot Box" components
Name: 11Dec2010 008



Description: On-Site storage
Name: 11Dec2010 009



Description:
Name: 11Dec2010 010



Description: Dewatering components near Centredale Manor buiding
Name: 12Dec2010 001



Description: Laying of fabric in preparation for rain
Name: 12Dec2010 005



Description: Waterline near Smith Street
Name: 12Dec2010 011



Description: Fabric over completed trench
Name: 12Dec2010 019



Description: Dust monitoring meter
Name: 12Dec2010 022



Description: Granular activated carbon vessels
Name: 12Dec2010 026



Description:
Name: 12Dec2010 027



Description: Fabric over completed trench before rain
Name: 12Dec2010 033



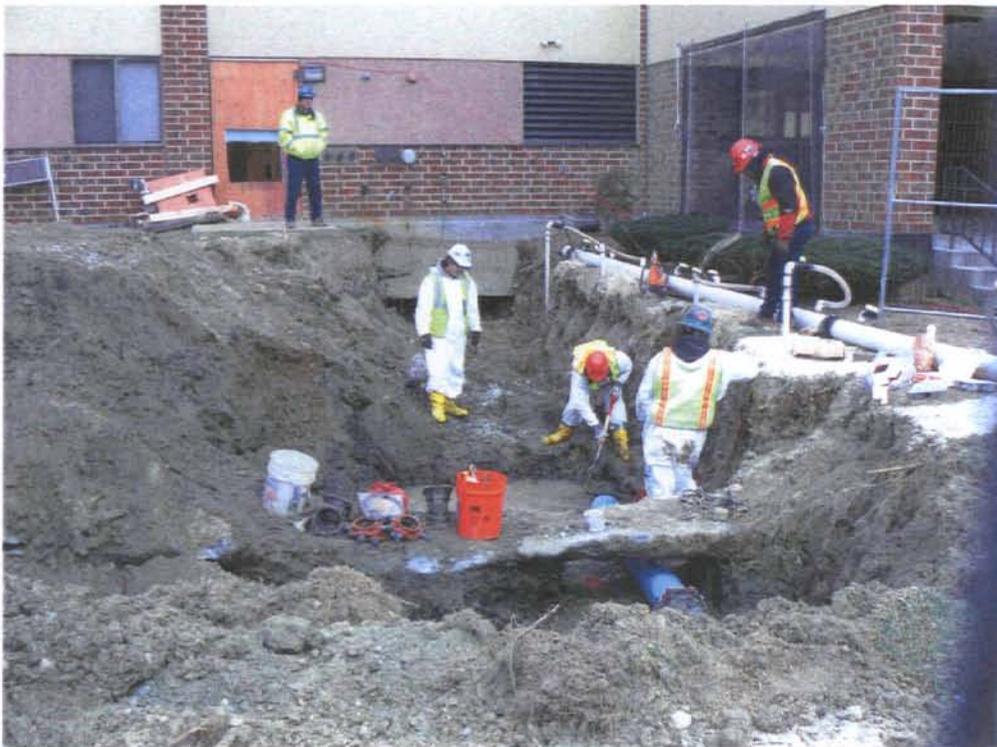
Description: Fabric over completed trench after rain
Name: 13Dec2010 003



Description: Erosion control haybales
Name: 13Dec2010 008



Description: Trenching near Manor building
Name: 14Dec2010 001



Description: Trenching near Manor building
Name: 14Dec2010 002



Description: Removal of damaged waterline
Name: 14Dec2010 013



Description: Building connection
Name: 15Dec2010 004



Description: Laying of fabric
Name: 17Dec2010 003



Description: Temporary waterline icing
Name: 17Dec2010 004



Description: "Hot Box" construction
Name: 17Dec2010 017



Description:
Name: 17Dec2010 023



Description: Arrival of snow
Name: 21Dec2010 002



Description: Application of clean fill over trench
Name: 21Dec2010 005



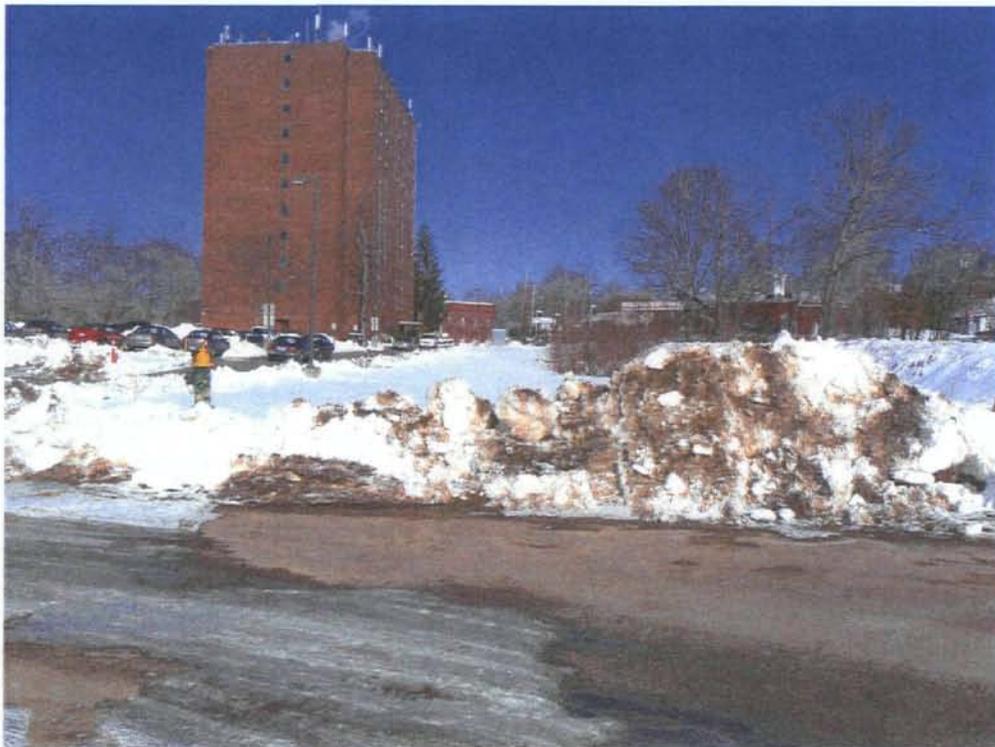
Description:
Name: 21Dec2010 008



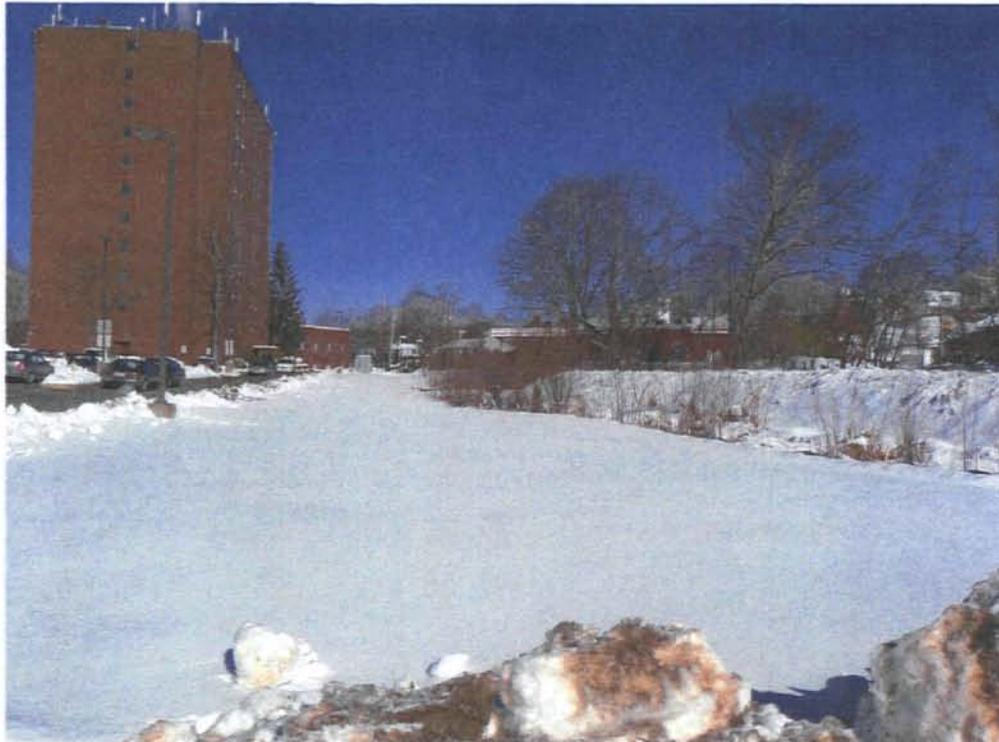
Description: Section of corroded waterline
Name:



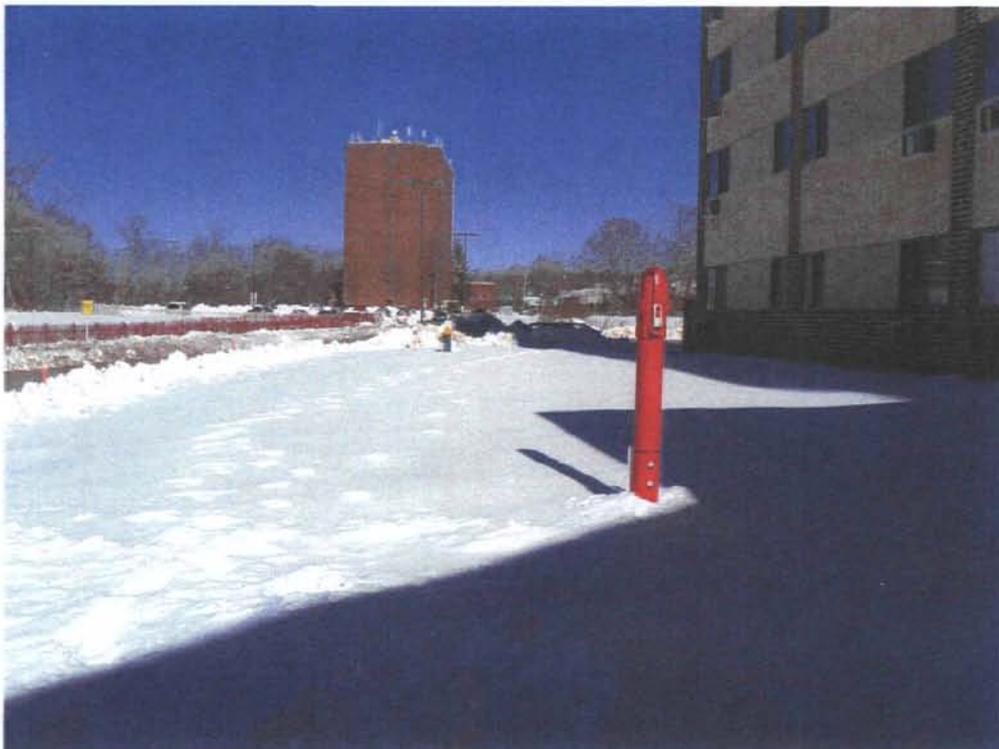
Description:
Name: 17Jan2011 001



Description: Trench Site covered with snow
Name: 17Jan2011 004



Description: Trench Site covered with snow
Name: 17Jan2011 005



Description: Trench Site covered with snow
Name: 17Jan2011 011