

ACTIVE INDUSTRIAL UNIFORM SITE GROUNDWATER EXTRACTION AND TREATMENT SYSTEM

Latitude 40.677°, Longitude -73.365°

REPORT TITLE

Site Management Quarterly
Report No. 32

REPORTING PERIOD

October 1, 2012 through
December 31, 2012

CLIENT

New York State Department of
Environmental Conservation

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation

625 Broadway, 12th Floor, Albany, New York 12233

Site

NYSDEC Site No. 152125, Active Industrial Uniform Site Groundwater Extraction and Treatment System, Village of Lindenhurst, Town of Babylon, Suffolk County, New York.



Project Background and Site Description

The Active Industrial Uniform (the Site) groundwater extraction and treatment system (GWE&TS) was designed to recover and treat a chlorinated solvent-contaminated groundwater plume emanating from the Site, a former dry cleaning and laundry facility. Dry cleaning activities were conducted at the Site from the 1980's to 1987. The GWE&TS has been in operation since December 2001; however, D&B assumed site management duties for the Site in February 2005. Refer to [Figure 1](#) for a Site location map depicting the GWE&TS location.

Groundwater Extraction and Treatment System Overview



The GWE&TS consists of two, 8-inch diameter extraction wells, with one located on-site in the southwest portion of the Site (RW-1), and one located off-site, approximately 1,500 feet southwest of the Site (RW-2). As per NYSDEC direction, extraction well RW-2 was shut-down in April 2010 due to low historic VOC concentrations, and is now being monitored on a quarterly basis. Extracted groundwater is conveyed to the GWE&TS building via underground piping to two series-configured packed-tower air strippers. Based on an evaluation of each of the packed-tower air stripper's performance over the last several years of operation and in order to reduce the electrical consumption of the overall GWE&TS, one of the two air stripper towers (Stripper Tower No. 2) was taken out of service in May 2011. Treated groundwater is pumped via underground piping to a storm water basin located approximately 1,000 feet west of the Site, which subsequently discharges into Little Neck Creek, in accordance with all applicable discharge standards. Exhaust gas from each air stripper tower was treated utilizing two granular activated carbon (GAC) vessels in series. Based on low historic contaminant concentrations detected in the air stripper exhaust gas, the air stripper exhaust piping was reconfigured to bypass the GAC vessels and discharge directly to the atmosphere in June 2011, per the direction of the NYSDEC. The GWE&TS is equipped with instrumentation and controls which allow for automated start-up and operation, and an autodial alarm notification system. Refer to [Figure 2](#) for an "as-built" system layout diagram.

As per NYSDEC direction, the GWE&TS was shut-down on December 12, 2012 due to elevated VOC concentrations detected in system aqueous-phase effluent and as a Remedial Site Optimization (RSO) evaluation was planned to be initiated soon after the end of the year.

Regulatory Requirements/Cleanup Goals

Site-specific remedial goals have been established through the remedy selection process and are documented in the Record of Decision (ROD), dated March 1997. The



site-specific goals outlined in the March 1997 ROD are provided in [Attachment A](#). The overall goal is to meet all appropriate Standards, Criteria, and Guidance (SCGs) and to be protective of human health and the environment. Implementation of the GWE&TS is specifically focused on the following goals:

- Reduce, control, or eliminate contaminated media to the extent practicable;
- Eliminate the threat to surface waters by remediating groundwater to the extent practicable;
- Mitigate the impacts of contaminated groundwater to the environment;
- Prevent, to the extent possible, migration of contaminants;
- Provide for attainment of SCGs for groundwater, soil and indoor air within the limits of the affected area, to the extent practical; and
- Reduce the threat of inhalation of site-related vapor-phase contaminants to residents within homes downgradient of the Site.

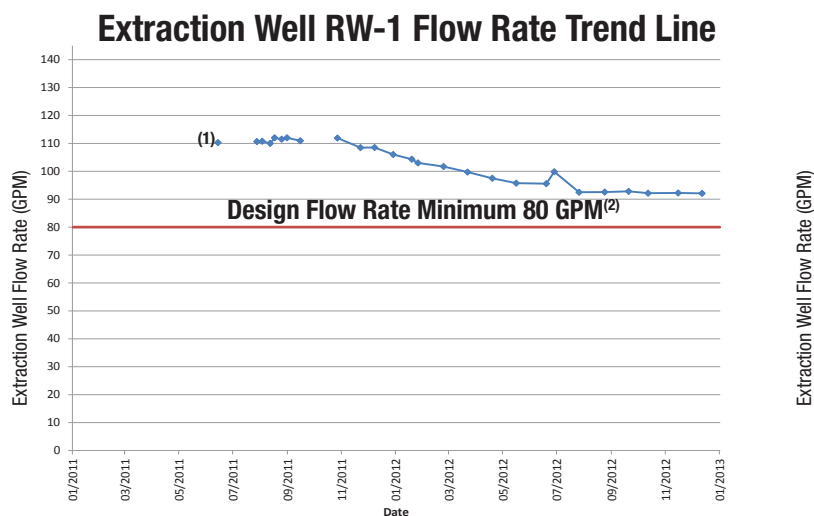
Treatment System Performance Summary

The GWE&TS performance during the current reporting period and since D&B assumed O&M duties in February 2005 is summarized below.

System Extraction Rates and Total Flow Volumes			
	RW-1	RW-2⁽¹⁾	System Effluent
Average Pumping Rate - Current Reporting Period	92 gpm	NA	93 gpm
Average Pumping Rate - Previous Reporting Period	93 gpm	NA	93 gpm
Average Pumping Rate to Date	76 gpm	80 gpm	104 gpm
Total Flow Volume - Current Reporting Period	8,676,102 gal.	NA	8,740,910 gal.
Total Flow Volume to Date	342,024,559 gal.	129,900,729 gal.	469,953,446 gal.

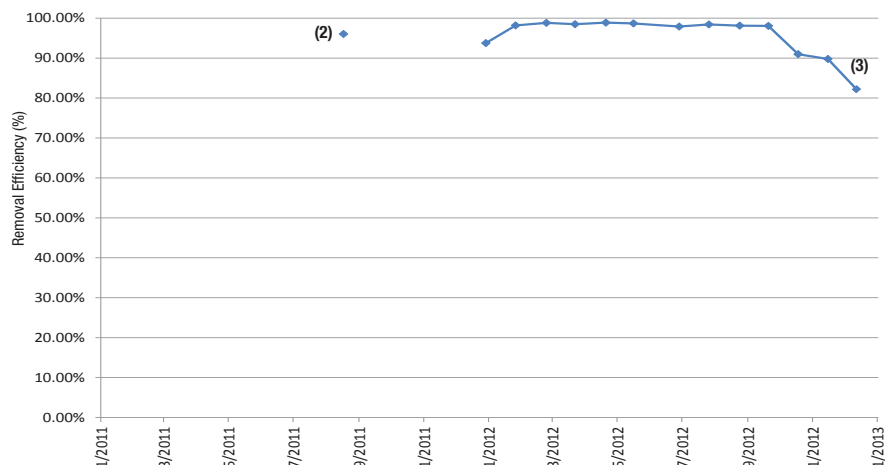
NA: Not applicable

1. As described above, extraction well RW-2 was shut down in April 2010 based on low historic VOC concentrations, as per NYSDEC direction.



1. The GWE&TS did not operate the majority of the time from December 2010 through July 2011 and September 2011 through October 2011 due to a carbon vessel bed screen failure and residential neighbor complaints pertaining to a loud noise being emitted by the GWE&TS exhaust piping.
2. Based on design information presented in the Active Industrial design documents, containment of the Active Industrial chlorinated plume could be achieved with on-site extraction well RW-1 operating at a minimum of 80% of the design flow rate of 100 GPM (80 GPM).

Air Stripper VOC Removal Efficiency ⁽¹⁾



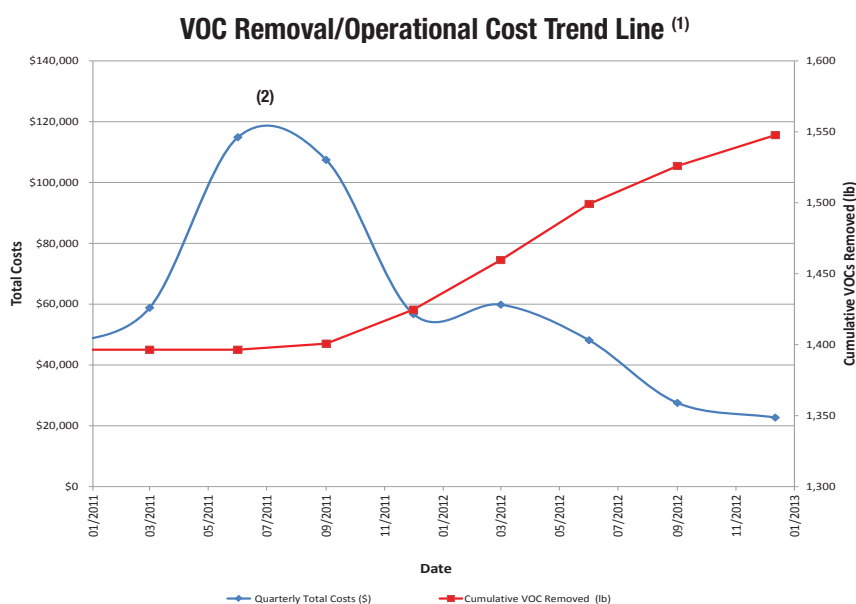
1. The packed-tower air strippers have operated at an approximate efficiency ranging from 82.16% to 99.47% since D&B assumed O&M duties in February 2005.
2. The GWE&TS did not operate the majority of the time from December 2010 through July 2011 and September 2011 through October 2011 due to a shut down related to a carbon vessel bed screen failure and residential neighbor complaints pertaining to a loud noise being emitted by the GWE&TS exhaust piping.
3. The GWE&TS was shut-down in December 2012 due to elevated VOC concentrations detected in system aqueous-phase effluent.



VOC Removal Assessment	
VOC Removal - Current Reporting Period	21.72 lbs.
VOC Removal - Previous Reporting Period	26.79 lbs.
Average VOC Removal to Date	26.33 lbs.
Total VOC Removal to Date	1,548 lbs.

VOC Removal Costs ⁽¹⁾	
VOC Removal Cost - Current Reporting Period ⁽²⁾	\$1,045 per lb.
VOC Removal Cost - Previous Reporting Period	\$1,027 per lb.
Average VOC Removal Cost to Date ⁽²⁾	\$1,899 per lb.

1. The VOC removal costs include monthly utility charges, maintenance costs and engineering costs. Capital construction costs and NYSDEC project management effort are not included in this evaluation.
2. Average calculated from when D&B assumed O&M duties in February 2005 through this reporting period.



1. The VOC removal costs include monthly utility charges, maintenance costs and engineering costs. Capital construction costs and NYSDEC project management effort are not included in this evaluation.
2. Costs reflected for these reporting periods are primarily the result of contaminated soil excavation activities and NYSDEC-approved system modifications, per the approval of the NYSDEC.



System Operation and Maintenance

Routine and non-routine maintenance completed during this reporting period and a summary of the alarm conditions and associated GWE&TS runtime/downtime for this reporting period are summarized below. Refer to [Attachment B](#) for operation and maintenance logs, as prepared by the NYSDEC “call-out” contractor for this reporting period.

Routine Equipment Maintenance Schedule Summary

Major System Component	Manufacturer	Model Number	Maintenance Frequency	Maintenance Summary					
				Current Reporting Period			Next Reporting Period		
				Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13
Extraction Well Pump RW-1	Grundfos Pump Corp.	150550-2	As needed based on flow trends						
Extraction Well Pump RW-2	Grundfos Pump Corp.	1505100-5	As needed based on flow trends						
Pressure Blower ⁽¹⁾	Cincinnati Fan	PB-18	Bi-Monthly						
Vapor Carbon Vessels	Cameron Great Lake	VS7.2x6.7x8.6-5000-DUAL	As needed based on analytical results						
Air Strippers	Branch Environmental	48T-25H	As needed based on contaminant concentrations						
Air Stripper Transfer Pumps	Magnatex Pumps, Inc.	MTA-A10-P-F20-2-FE	Quarterly			12/19/12			

Planned Activity

- Note that the pressure blower maintenance item was not completed during this reporting period. Pressure blower, as well as air stripper transfer pump maintenance, will be scheduled upon start-up of the GWE&TS.

Non-Routine System Maintenance:

- Based on VOC exceedances detected in aqueous-phase effluent, the GWE&TS was shut down on December 12, 2012. In addition, the packing and piping on the first air stripper was inspected on December 12, 2012; and
- A waste composite sample was collected from the air stripper packing material in anticipation of a packing material change-out to increase the stripper tower efficiencies on December 19, 2012.

General Facility Maintenance:

- The Site was assessed for potential damage due to Hurricane Sandy on October 31, 2012. No damage was noted; and
- According to the “call-out” contractor’s Site Activities Log for this reporting period, debris was cleared out of an on-site “shed” on December 12, 2012.



System Runtime/Downtime Summary

Runtime - Current Reporting Period ⁽¹⁾	1,572 hours	71.2%
Downtime - Current Reporting Period ⁽¹⁾⁽²⁾	636 hours	28.8%
Total Runtime to Date ⁽³⁾	53,040 hours	78.3%
Total Downtime to Date ⁽³⁾	14,707 hours	21.7%

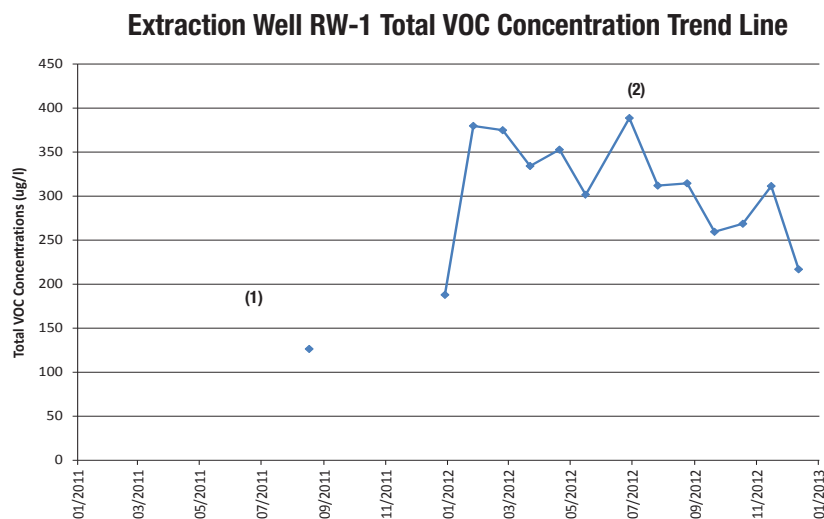
1. Total elapsed runtime for current reporting period is 2,208 hours (October 1, 2012 through December 31, 2012).
2. The majority of this downtime is due to a power outage associated with Hurricane Sandy, as well as the system being shut down due to elevated VOC concentrations in aqueous-phase effluent.
3. Based on when D&B assumed O&M duties in February 2005.

Alarm Conditions:

- Due to Hurricane Sandy, a power outage caused the GWE&TS to shut-down on October 29, 2012. The “call-out” contractor restarted the GWE&TS on November 5, 2012; and
- According to the “call-out” contractor’s Site Activities Log for this reporting period, an alarm was triggered on December 31, 2012. However, the “call-out” contractor noted that the GWE&TS was shut down and no alarm condition existed at the Site. Note that the GWE&TS was shut down on December 12, 2012.

System Monitoring and Sampling Results

A summary of the pertinent routine treatment system monitoring and sampling results are provided below.



1. The GWE&TS did not operate during the majority of the time from December 2010 through July 2011 and September 2011 through October 2011 due to a carbon vessel bed screen failure and a continuous loud noise emitted by the GWE&TS exhaust piping.
2. This increase in total VOC concentration in extraction well RW-1 influent may be attributable to a lagging effect of the disturbance of the subsurface and contaminants during the latest soil removal IRM completed in June and July 2011.



Extraction Well RW-1 - System Influent Contaminant Concentration Ranges/Averages ⁽¹⁾				
Contaminant ⁽²⁾	Current Reporting Period	Previous Reporting Period	Average to Date	Class GA Groundwater Standard
<u>Tetrachloroethene (PCE)</u>	130 ug/l - 190 ug/l	160 ug/l - 200 ug/l	224 ug/l	5.0 ug/l
<u>Trichloroethene (TCE)</u>	29 ug/l - 44 ug/l	37 ug/l - 41 ug/l	61 ug/l	5.0 ug/l
<u>cis-1,2-Dichloroethene (cis-1,2-DCE)</u>	56 ug/l - 75 ug/l	60 ug/l - 82 ug/l	95 ug/l	5.0 ug/l
<u>Vinyl chloride (VC)</u>	1.4 ug/l - 1.7 ug/l	1.8 ug/l - 2.2 ug/l	0.82 ug/l	2.0 ug/l
Iron	136 ug/l - 382 ug/l	138 ug/l - 192 ug/l	173 ug/l	300 ug/l
Manganese	989 ug/l - 1,040 ug/l	984 ug/l - 1,060 ug/l	1,235 ug/l	300 ug/l
Sodium	23,600 ug/l - 26,500 ug/l	25,400 ug/l - 27,000 ug/l	25,162 ug/l	20,000 ug/l
pH	6.06 - 6.09	5.90 - 6.08	6.2	6.5-8.5

ND: Constituent concentration below the analytical detection limit. - - : Not analyzed.

Red font denotes an exceedance of the applicable standard.

1. Only includes constituents consistently or periodically detected in exceedance of their respective Class GA Groundwater Standard.
2. Click on the blue-colored contaminants for graphs of VOC concentrations over the last 2 years for VOCs detected above the Class GA Groundwater Standards for this and/or the previous reporting periods.

Aqueous-Phase Air Stripper Effluent Concentration Ranges ⁽¹⁾			
Discharge Permit Parameters	Current Reporting Period	Previous Reporting Period	Site-Specific Effluent Limit
PCE	9.7 ug/l - 16 ug/l	1.3 ug/l - 2.0 ug/l	4.0 ug/l
TCE	3.5 ug/l - 5.3 ug/l	0.41 ug/l - 0.68 ug/l	10.0 ug/l
cis-1,2-DCE	11 ug/l - 17 ug/l	2.7 ug/l - 3.2 ug/l	10.0 ug/l
VC	ND	ND	10.0 ug/l
Iron	1,970 ug/l	646 ug/l	4,000 ug/l
Manganese	2,280 ug/l	1,950 ug/l	2,000 ug/l
Sodium	27,300 ug/l	28,100 ug/l	NA
pH	7.90	7.98	6.0 - 9.0

ND: Constituent concentration below the analytical detection limit. NA: Not applicable.

1. Only includes constituents historically detected in exceedance of their respective Class GA Groundwater Standard in influent water.

Refer to [Attachment C](#) for analytical data results. Based on direction from NYSDEC, and as aqueous-phase VOC concentrations exceeded site-specific discharge limits during this reporting period, the GWE&TS was shut-down on December 12, 2012. It was noted that the pressure blower velocity of 970 cubic feet per minute (cfm) during December 2012 was below the design velocity of 1,100 cfm, which may have caused or contributed to the aqueous-phase effluent exceedances noted during this reporting period. It should be noted that a RSO evaluation is currently being performed to evaluate the GWE&TS equipment efficiency and operation.



Vapor-Phase Air Stripper Effluent Concentrations ⁽¹⁾			
	Current Reporting Period	Previous Reporting Period	Site-Specific Limits
PCE	0.0069 lbs/hr	--	0.007 lbs/hr
TCE	0.001 lbs/hr	--	0.006 lbs/hr
Xylene	ND	--	0.001 lbs/hr
1,2-DCE (total)	0.002 lbs/hr	--	0.003 lbs/hr
VC	0.000028 lbs/hr	--	0.014 lbs/hr
1,1,1-TCA	ND	--	0.001 lbs/hr
Maximum Total VOC Emissions	0.010 lbs/hr	--	0.5 lbs/hr ⁽²⁾

ND: Constituent concentration below the analytical detection limit. NA: Not applicable. -- : Not analyzed.

Red font denotes an exceedance of the applicable site-specific limit.

1. Vapor-phase effluent samples for laboratory analysis are collected on a semi-annual basis and were not collected during the previous reporting period.
2. The site-specific effluent limit of 0.5 lbs/hr was developed in consultation with the NYSDEC and is utilized as a means to monitor total vapor-phase VOCs emitted by the GWE&TS.

A waste composite sample was collected from the air stripper packing material in anticipation of a packing material change-out to increase the stripper tower efficiencies on December 19, 2012. The sample was analyzed for VOCs, metals, pH, flashpoint and reactivity, as well as Toxicity Characteristic Leaching Procedure (TCLP) VOCs and metals, which were held pending the total VOC and metal results. Due to low concentrations of total VOCs and metals, NYSDEC elected to not analyze the sample for TCLP VOCs or metals. Based on the analytical results, the packing material will likely be disposed off-site as non-hazardous material. Refer to [Attachment D](#) for the laboratory analytical report.

Quarterly Groundwater Monitoring Summary

The network of groundwater monitoring wells was sampled to determine groundwater quality at, and in the vicinity of, the Site. Samples were collected from ten on-site groundwater monitoring wells (MW-101 through MW-108, MW-4D and MW-5S), three off-site groundwater monitoring wells (MW-109, MW-111 and MW-2S) and off-site extraction well RW-2.

The locations of the on-site groundwater monitoring wells are depicted on [Figure 3](#) and the locations of off-site groundwater monitoring wells are depicted on [Figure 4](#).

Groundwater Monitoring Well Condition Summary:

All groundwater monitoring wells and extraction well RW-2 were found to be accessible during the groundwater monitoring sampling events conducted on November 9 and 12, 2012. Although all groundwater monitoring wells were located as indicated on the Site map, no wells had visible well IDs. All monitoring well concrete well pads, protective casings, surface seals, PVC well risers, well plugs and locks were observed to be present and in good condition, with the following exceptions:

- The well lock at monitoring well MW-4D is missing;
- Missing bolts were observed at monitoring wells MW-101, MW-102, MW-104 through MW-106, MW-108, MW-109, MW-111 and MW-4D;
- The surface seals at monitoring well MW-104 and MW-5S are missing; and
- Concrete well pads and protective casings are not present at monitoring well locations MW-104 and MW-5S.

A summary of the field inspection logs for all groundwater monitoring wells assessed during this reporting period are provided in [Attachment E](#).



Groundwater Monitoring Results Summary:

A headspace reading was collected utilizing a PID at each groundwater monitoring well immediately after the removal of the well caps and plugs. The on-site groundwater monitoring wells exhibited concentrations of total VOCs ranging from 0.3 ppm to a maximum concentration of 667 ppm detected in groundwater monitoring well MW-4D. The off-site groundwater monitoring wells exhibited concentrations of total VOCs ranging from 0.0 ppm to a maximum concentration of 1.1 ppm detected in groundwater monitoring well MW-2S.

Below is a table summarizing the site-specific contaminants of concern in on-site and off-site groundwater. Refer to [Attachment C](#) for analytical data results.

Site-Specific Contaminant of Concern Concentrations									
Monitoring Well ^(1,2)	PCE		TCE		cis-1,2-DCE		Vinyl Chloride		Site-Specific 2-Year Contaminant Trend Analysis
	Current Reporting Period	Previous Reporting Period	Current Reporting Period	Previous Reporting Period	Current Reporting Period	Previous Reporting Period	Current Reporting Period	Previous Reporting Period	
On-Site Monitoring Wells									
MW-101	1.2 ug/l	NS	0.36 ug/l	NS	ND	NS	ND	NS	Stable
MW-102	1.6 ug/l	NS	0.40 ug/l	NS	ND	NS	ND	NS	Stable
MW-103	3.4 ug/l	1.6 ug/l	0.36 ug/l	0.38 ug/l	0.20 ug/l	ND	ND	ND	Decreasing
MW-104	34 ug/l	83 ug/l	4.0 ug/l	6.2 ug/l	6.5 ug/l	2.1 ug/l	ND	ND	Increasing
MW-105	0.67 ug/l	1.9 ug/l	0.27 ug/l	0.55 ug/l	ND	0.33 ug/l	ND	ND	Decreasing
MW-106	6.4 ug/l	4.2 ug/l	4.1 ug/l	4.3 ug/l	32 ug/l	23 ug/l	9.0 ug/l	5.5 ug/l	Decreasing
MW-107	6.7 ug/l	1.9 ug/l	0.92 ug/l	0.74 ug/l	1.3 ug/l	1.6 ug/l	ND	ND	Stable
MW-108	3.6 ug/l	NS	0.24 ug/l	NS	ND	NS	ND	NS	Decreasing
MW-4D ⁽⁴⁾	100,000 ug/l	89,000 - 110,000 ug/l	10,000 ug/l	7,900 - 9,700 ug/l	93 ug/l	ND	ND	ND	NA
MW-5S	0.59 ug/l	58 ug/l	0.79 ug/l	1.9 ug/l	0.24 ug/l	ND	ND	ND	Increasing
Off-Site Monitoring Wells									
MW-109	1.5 ug/l	NS	2.3 ug/l	NS	2.0 ug/l	NS	ND	NS	Stable
MW-111	ND	NS	ND	NS	ND	NS	ND	NS	Stable
MW-2S	7.0 ug/l	42 ug/l	2.4 ug/l	6.8 ug/l	8.8 ug/l	13 ug/l	0.96 ug/l	0.34 ug/l	Decreasing
RW-2 ⁽³⁾	68 ug/l	0.28 ug/l	40 ug/l	0.43 ug/l	23 ug/l	ND	ND	ND	Increasing

ND: Constituent concentration below the analytical detection limit.

NS: Not sampled. NA: Not applicable

Red font denotes an exceedance of the constituents Class GA Groundwater Standard (5.0 ug/l for PCE, TCE and cis-1,2-DCE, and 2.0 ug/l for VC).

In addition to the contaminants listed in the table, 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, chlorobenzene, chloroform, methylene chloride and trans-1,2-dichloroethene were detected in one or more monitoring well sample; however, these analytes were detected at concentrations well below their respective Class GA Groundwater Standards.

1. Click on monitoring well IDs, with the exception of monitoring well MW-4D, for graphs depicting contaminant concentrations over the last 2 years in wells exhibiting exceedances of the Class GA Groundwater Standards for this and the previous reporting period.

2. Groundwater monitoring wells MW-101, MW-102, MW-108, MW-109 and MW-111 are now sampled on a semi-annual basis. As such, samples were not collected during the previous reporting period.

3. Extraction well RW-2 is now sampled on a quarterly basis in order to better monitor off-site contaminant concentrations.

4. Monitoring well MW-4D was sampled on July 10 and September 27, 2012 during the previous monitoring period.



The majority of the groundwater monitoring wells exhibit overall decreasing or stable concentrations of the site-specific contaminants over the past 2-year period. However, several increases in site-specific contaminant concentrations were noted in several monitoring wells, including off-site extraction well RW-2, during this reporting period, as compared to the last several reporting periods. A figure depicting total VOC concentrations in on-site and off-site wells is provided as [Figure 5](#).

As detailed above, newly uncovered on-site monitoring well MW-4D exhibited extremely high concentrations of PCE and TCE. Note monitoring well MW-4D is screened at a depth approximately 30 feet deeper than on-site extraction well RW-1 and the on-site monitoring wells.

Data Validation:

All sample results have been reviewed by D&B and deemed valid and usable for environmental assessment purposes. No qualification of the data was necessary based upon D&B's review. Data Validation Checklists are presented in [Attachment E](#).

Findings and Recommendations

Findings:

- General: The GWE&TS was operational for the vast majority of this reporting period;
- GWE&TS Operation: As a result of power outages resulting from Hurricane Sandy, the GWE&TS was down between October 29 and November 5, 2012;
- GWE&TS Maintenance: Routine maintenance of the pressure blower was not completed as per the requirements of the April 2002 O&M Plan;
- Aqueous-Phase Effluent Exceedances: As detailed above, several site-specific VOCs (PCE and cis-1,2-DCE) were detected at concentrations in exceedance of the GWE&TS site-specific effluent limits. In addition, manganese was detected in exceedance of its site-specific effluent limit;
- Monitoring Well Conditions: All groundwater monitoring wells were observed to be in good condition, with the following exceptions:
 - No monitoring wells had visible IDs;
 - The well lock at monitoring well MW-4D is missing;
 - Missing bolts were observed at monitoring wells MW-101, MW-102, MW-104 through MW-106, MW-108, MW-109, MW-111 and MW-4D;
 - The surface seals at monitoring well MW-104 and MW-5S are missing; and
 - Concrete well pads and protective casings are not present at monitoring wells MW-104 and MW-5S; and
- Monitoring Well Contaminant Concentrations: On-site groundwater monitoring wells MW-104, MW-106, MW-107 and MW-4D, off-site monitoring well MW-2S and extraction well RW-2 exhibited one or more of the site-specific VOCs at concentrations exceeding their respective Class GA Groundwater Standards during this reporting period. Several wells exhibited higher than typical site-specific contaminant concentrations during this reporting period.

As detailed above and in the previous Quarterly Report, newly uncovered on-site monitoring well MW-4D exhibited extremely high concentrations of PCE and TCE. Based on field observation, the total depth of monitoring well MW-4D is approximately 58.2 feet below grade. Based on historic screened interval information, the well was constructed with a 10-foot screen. As a result, monitoring well MW-4D is screened approximately 23 feet deeper than on-site extraction well RW-1 (screened at 10 to 35 feet below grade), as well as the site-wide monitoring well network (screened at 5 to 15 feet below grade). It should be noted that, based on soil sampling performed as part of a Remedial Site Optimization



(RSO) at the site, the clay surface of the Gardiners Clay unit is located below the Site at a depth of approximately 69.5 feet below grade and is likely acting as a “confining unit” for the contaminant plume in this area. Based on the relatively dense nature of chlorinated solvents, the contaminant plume may be migrating along the top clay surface of the Gardiners Clay unit. The RSO evaluation currently being completed will focus on this issue, as well as the increase in site-specific contaminants in GWE&TS aqueous-phase effluent detected during this reporting period.

Recommendations:

- General GWE&TS: As per NYSDEC direction, the GWE&TS will remain off while the RSO evaluation is being performed;
- Aqueous-Phase Effluent Exceedances: It is recommended that the NYSDEC “call-out” contractor verify that, when operating, the pressure blower is operating at a velocity of 1,100 cfm in order to ensure the GWE&TS is efficiently removing recovered concentrations of VOCs;
- Monitoring Well Conditions: Well IDs should be permanently fixed and clearly marked on each groundwater monitoring well for identification purposes. In addition, it is recommended to install protective casings and well pads at monitoring wells MW-104 and MW-5S in order to ensure these wells are properly protected;
- Groundwater Sampling: Based on the elevated contaminant concentrations detected in on-site monitoring well MW-4D, D&B recommends that this monitoring well be sampled on a quarterly basis; and
- RSO Evaluation: As detailed above, a RSO evaluation is currently being performed to further investigate residual on-site contamination, GWE&TS equipment efficiency and operation, and possibly consider alternative remedial technologies, such as monitored natural attenuation (MNA) and/or in-situ chemical injections. In addition to evaluating the GWE&TS equipment efficiency, the RSO will also include the following:
 - Extraction Well ROI Analysis: In order to ensure on-site extraction well RW-1 is operating at an optimal and efficient flow rate, a radius of influence (ROI) analysis for the extraction well will be performed as part of the RSO evaluation.
 - Plume Re-delineation: Based on the elevated contaminant concentrations detected in on-site monitoring well MW-104, MW-106, MW-108 and MW-4D, off-site monitoring well MW-2S and off-site extraction well RW-2, several temporary wells will be installed and sampled at and downgradient of the Site to more accurately define the current location and depth of the groundwater plume as part of the RSO evaluation. Based on the results of the temporary well sampling, it may be warranted to install additional permanent monitoring wells in these areas, again operate extraction well RW-2 and/or modify the current extraction well configuration in order to optimize and accelerate the recovery and treatment of the entire groundwater plume.

Reclassification/Delisting Evaluation

The Site was originally listed as a Class 2 Inactive Hazardous Waste Site by the NYSDEC in November 1990. Since this time, completion of the following project phases has occurred, as summarized below:

<i>Project Phases and Completion Dates</i>	
<i>Project Phase</i>	<i>Completion Date</i>
Remedial Investigation	04/1994
Phase II Remedial Design Investigation	12/1998
Remedial Design	06/2000
Groundwater Extraction and Treatment System Construction	12/2001 ⁽¹⁾
UST Removal and Phase I Contaminated Soil Removal IRM	06/2010
Phase II Contaminated Soil Removal IRM	07/2011

1. Construction of the GWE&TS was completed in December 2001. The GWE&TS was placed into routine operation in December 2001 and D&B assumed O&M duties in February 2005.



**NYSDEC Site No. 152125 - Active Industrial Uniform Site
Groundwater Extraction and Treatment System**

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Given the above, it does not appear that the Active Industrial Uniform Site can be reclassified at this time, pursuant to the requirements identified in 6 NYCRR §375-2.7, as site-related contamination has not been fully remediated and continues to constitute a significant threat to public health and the environment. As such, Site delisting is not recommended at this time, as all remediation and post-remediation activities have not been satisfactorily completed. Work continues to address residual on-site contamination and system optimization to expedite overall remediation and site closure.

Report Certification:

I have personally examined and am familiar with the information submitted in the referenced report. To the best of my knowledge and belief, and based upon my inquiry of those individuals immediately responsible for obtaining the information reported therein, I certify that the submitted information is true, accurate, and complete.

Project Director:

Richard M. Walka
Senior Vice President

3.12.13

Date

Project Manager:

Stephen E. Tauss
Geologist II

3/12/13

Date