Former Interceram Site
20 Fortune Road West
Town of Wallkill
Orange County, New York

Final Engineering Report

NYSDEC Site No. 336045

CHA Project Number: 28574

Prepared for:

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April 7, 2015
(Revised March 1, 2017)

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CERTIFICATION

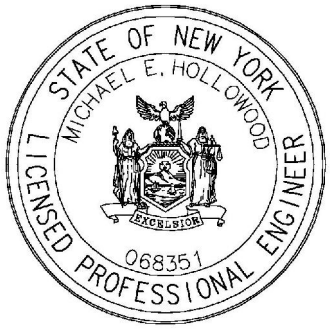
I, the undersigned, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that all construction activities were completed in substantial conformance with the Department-approved Interim Remedial Measure Work Plan. Deviations from the Work Plan are summarized in Section 3.4 of this FER.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Interim Remedial Measure Work Plan and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established for the remedy.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, the undersigned, of Clough Harbour & Associates LLP am certifying as Owner's Designated Site Representative for the Site.

For Clough Harbour & Associates LLP:

(Professional Seal)



Michael Hollowood, P.E.
Printed Name of Certifying Engineer

Signature of Certifying Engineer

March 1, 2017
Date of Certification

068351
NYS Professional Engineer Registration Number

Clough Harbour & Associates LLP
Company

Vice President
Title

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LIST OF ACRONYMS & ABBREVIATIONS

AMSL	Above Mean Sea Level
Approx.	Approximately
ASTM	American Society of Testing & Materials
BGS	Below the Ground Surface
CHA	CHA Consulting, Inc.
DEC	Department of Environmental Conservation
Dia.	Diameter
El.	Elevation
ELAP	Environmental Laboratory Approval Program
EPA	Environmental Protection Agency
FER	Final Engineering Report
Ft.	Feet
HASP	Health & Safety Plan
ID	Identification
IN.	Inches
Inc.	Incorporated
IRM	Interim Remedial Measures
mg/Kg	Milligrams per Kilogram
MW	Monitoring Well
NTU	Nephelometric Turbidity Unit
NY	New York
NYCRR	New York Code, Rules & Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PDF	Portable Document Format
PE	Professional Engineer
PID	Photoionization Detector
ppm	Parts per Million
QA	Quality Assurance
QC	Quality Control
RA	Remedial Action
RAO	Remedial Action Objective
ROD	Record of Decision
SOP	Standard Operating Procedure
TOGS	Technical & Operational Guidance Series
µg/kg	Micrograms per Kilogram
UFPO	Underground Facilities Protective Organization (Dig Safely)
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

1.0 BACKGROUND & SITE DESCRIPTION

1.1 INTRODUCTION

CHA Consulting, Inc. (CHA) has prepared this Final Engineering Report (FER) on behalf of CeramTec North America (CTNA) to document and describe the implementation of remedial activities completed as an Interim Remedial Measure (IRM) in connection with previously documented groundwater contamination associated with historical operations of the former Interceram manufacturing facility (the Site), located at 20 Fortune Road West, in the Town of Wallkill, Orange County, New York (see Figure 1). The remedial activities were completed in accordance with the IRM Work Plan prepared by CHA (Appendix A), dated April 23, 2014 and approved by the New York State Department of Environmental Conservation (NYSDEC) in its letter dated June 5, 2013 (Appendix B). The FER also presents the results of post-remediation groundwater monitoring that was conducted as a component of the IRM Work Plan.

The remedial activities focused on the westernmost portion of the Site and the easternmost portion of the adjacent Rockwood Gardens apartment complex in the vicinity of Buildings 61 and 62, immediately west and downgradient of the Site (see Figure 2).

1.2 PROJECT BACKGROUND

Subsurface investigations conducted by others at the former Interceram property during 1992 and 1993 identified the presence of industrial solvent-related volatile organic compounds (VOCs), including trichloroethene (TCE), tetrachloroethene (PCE) and 1,2-dichloroethene (1,2-DCE), in soil and groundwater on the western portion of the property, extending in a westerly direction from the former exterior chemical storage area to the property line.

A subsurface assessment conducted in September 1993 on the adjacent Rockwood Gardens Apartments property in the area immediately east of Building #62 (referred to as Building #16 at the time of the assessment) identified the presence of TCE in subsurface soils and also in groundwater at concentrations above the New York State Ambient Water Quality Standard.

In late 1995, a remedial investigation was completed by others at the former Interceram site. The investigation included sampling and analysis of surface soil, subsurface soil, soil vapor, indoor air, and groundwater. Results of the investigation indicated the presence of multiple VOCs in groundwater at concentrations exceeding the New York State Ambient Water Quality Standards. In addition, low concentrations of VOCs were also identified in indoor air samples collected from Building #62 on the Rockwood Gardens property. Based on the results of the remedial investigation, a Feasibility Study was completed in 1996 to identify and evaluate the potential remedial alternatives to address the chemical constituents present in the soil and groundwater at the subject site. According to the Record of Decision issued by the NYSDEC in February 1997, the selected remedial action for contaminated soils (Operable Unit 1 or OU-1) included on-site soil treatment using low temperature thermal desorption (LTTD), implementation of a long term groundwater monitoring program, an indoor air sampling program, and a deed restriction ensuring that the premises will be serviced exclusively by public drinking water. The long-term groundwater monitoring requirement included the stipulation that if the rate of natural attenuation was determined to be unsatisfactory, remediation of contaminated groundwater (Operable Unit 2 or OU-2) will be implemented.

Site soils were treated using the LTTD system between January and June 1997. According to the Site Remediation Report dated October 1997, approximately 11,000 cubic yards of soil and rock were excavated from the western portion of the former Interceram property, between the west side of the former Interceram building and the eastern end of the Rockwood Gardens property. Several hundred yards of rock was crushed and decontaminated and returned to the excavation. The remaining soil materials were treated by the LTTD system. In addition, approximately 125 tons of soil were transported off site for disposal. Subsequent to collection and analysis of post-excavation soil samples, the excavations were backfilled with the treated soils.

Since 2001, groundwater monitoring has been conducted annually, including collection of groundwater samples from the monitoring location identified as SUMP on the western portion of the former Interceram property (within the former soil remediation area) and monitoring wells located in the vicinity of Building 62 on the Rockwood Gardens property adjacent to the former Interceram property. Based on historical groundwater elevation data, the direction of groundwater flow in the area of the Site is generally to the west, from the former Interceram property toward the adjacent Rockwood Gardens property Historical groundwater analytical data since 2001 showed fluctuating concentrations of TCE ranging from 290 to 1,400 µg/L at the monitoring

location identified as SUMP (located east and upgradient of Building 62) and concentrations ranging from 4,200 to 17,000 µg/L at the location of monitoring well S-2 (located west and downgradient of Building 62). Historical data showed fluctuating concentrations of cis-1,2-DCE ranging from 290 to 1,400 µg/L at the location of the SUMP, and concentrations ranging from 510 to 1,100 µg/L at S-2. The results from the January 13, 2012 groundwater sampling event (the most recent sampling event prior to implementation of the IRM for OU-2) showed the presence of TCE and cis-1,2-DCE each at concentrations of 1,000 µg/L at the location of the SUMP. Concentrations of these two compounds at the location of S-2 were 8,000 µg/L and 870 µg/L, respectively. These results indicated that there had been no significant reduction in the concentration of these compounds in groundwater since 2001. Concentrations of both TCE and cis-1,2-DCE remained above the established New York State Ambient Water Quality Standards.

In 2008 and 2009, CHA conducted vapor intrusion (VI) investigations at the former Interceram facility and at the Rockwood Gardens apartment complex in Buildings 61, 62, 64, 65 and 66. In 2010, based on the results of the VI investigations, sub-slab depressurization systems (SSDS) were installed in Buildings 61, 62 and 65 to address indoor air concerns within these buildings. No further action was required for Buildings 64 and 66. The SSDS in Buildings 61, 62 and 65 have been monitored periodically since installation and continue to operate. The systems have been inspected annually for proper operation by the environmental contractor that installed them. The most recent inspection was completed in November 2014. System inspection reports have been submitted to the NYSDEC.

In an effort to evaluate downgradient contaminant extent within the shallow aquifer, in advance of anticipated groundwater remedial activities, an additional 1-inch diameter PVC monitoring well (S-9) was installed in December 2012 in the area to the north of Building #61, approximately 100 feet west-northwest of monitoring well S-2. The analytical results of the groundwater sample collected from this new well showed the presence of TCE at a concentration of 260 µg/L (above the New York State Ambient Water Quality Standard), indicating that groundwater in the area between S-2 and S-9 was impacted and should be addressed as part of the anticipated remedial activities.

Based on historical analytical data, discussions during a November 2012 meeting between CHA, CTNA and the NYSDEC, and the December 2012 groundwater analytical results from monitoring well S-9, it was determined that remedial efforts would be focused on the areas immediately to the

east and west of Building 62 (vicinity of the SUMP and monitoring well S-2) and the area to the north of Building 61, between monitoring wells S-2 and S-9.

2.0 SUMMARY OF INTERIM REMEDIAL MEASURE (IRM)

This section summarizes the Remedial Action Objectives (RAOs) established for the IRM implemented for OU-2 and provides a brief description of the selected remedy.

2.1 REMEDIAL ACTION OBJECTIVES

The immediate objective of the IRM for OU-2 was to reduce levels of target contaminants in groundwater to an order of magnitude lower than the most recent analytical results (January 2012), or less, in the vicinity of Building 62 within 1 to 3 years of implementation. Ultimately, the long-term objective is to achieve contaminant reduction sufficient to allow for deactivation of the above-referenced SSDSs, and a decrease in the frequency of groundwater monitoring.

2.2 DESCRIPTION OF IRM

Based on evaluation of factors including contaminants of concern, contaminant concentrations and distribution, depth to water, soil type, groundwater gradient, site structures and other site characteristics, the primary remedial technology selected was in-situ chemical oxidation (ISCO) using a product called PersulfOx™, supplied by Regenesis. PersulfOx™ is a sodium persulfate-based technology which employs a patented catalyst to enhance the oxidative destruction of both hydrocarbons and chlorinated contaminants in the subsurface. The PersulfOx™ product is a dry powder which is easily mixed with water and applied into the contaminated matrix using subsurface injection techniques or soil mixing tools.

The ISCO technology was supplemented with enhanced anaerobic biodegradation, which is the practice of adding hydrogen (an electron donor) to groundwater and/or soil to increase the number and vitality of indigenous microorganisms performing anaerobic bioremediation (reductive dechlorination) on any anaerobically degradable compound or chlorinated contaminant. The product selected to facilitate enhanced anaerobic biodegradation was 3-D Microemulsion (3DME), also supplied by Regenesis, which is a product designed specifically for in-situ treatment of

chlorinated solvent based contaminants. Upon application to the subsurface, 3-D Microemulsion immediately begins to produce hydrogen and to distribute hydrogen-generating compounds to the subsurface through a series of hydration and fermentation reactions. This process provides for an immediate as well as time-release supply of hydrogen to fuel the demands of the anaerobic reductive dechlorination process. The 3-D Microemulsion product is a liquid which can be readily injected into the subsurface or further diluted and mixed with water to form a higher volume microemulsion.

3.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

The remedial technologies described above were implemented via subsurface injection using direct-push (Geoprobe) methods. CHA's subcontractor, Zebra Environmental Corporation (Zebra), provided personnel and direct-push injection equipment for completion of all injection activities, which were observed and documented by a CHA representative. In the areas of the SUMP and S-2 (east and west of Building #62, respectively), both technologies were implemented. In the area of S-9, only Enhanced Anaerobic Biodegradation technology was implemented, based on the lower concentrations of target contaminants in this area. In the areas of the SUMP and S-2, two PersulfOx™ injection events were completed, the second occurring approximately six weeks following the first. A third injection event, for application of the 3-D MicroEmulsion in all three areas, occurred approximately two months following the second PersulfOx™ injection event.

3.1 GOVERNING DOCUMENTS

3.1.1 Work Plan

The IRM was completed in accordance with the NYSDEC-approved Interim Remedial Measure Work Plan dated April 23, 2013.

3.1.2 Site-Specific Health & Safety Plan

CHA developed and implemented a Site-specific Health & Safety Plan (HASP) for the project, a copy of which is included in Appendix C. CHA observed the requirements of this HASP during the implementation of the IRM.

3.1.3 Soils/Materials Management Plan

A Soils/Materials Management Plan was not required for this project.

3.1.4 Storm-Water Pollution Prevention Plan

A Storm-Water Pollution Prevention Plan was not required for this project.

3.1.5 Community Air Monitoring Plan

A Community Air Monitoring Plan was not required for this project.

3.1.6 Citizen Participation Plan

A Citizen Participation Plan was not required for this project. The primary form of public participation for the project was the solicitation of public comments by the NYSDEC via its Fact Sheet, issued in May 2013 (Appendix D). The public comment period was 30 days, beginning on May 6, 2013. According to the NYSDEC, no questions or comments were received from the public during the established comment period.

3.2 REMEDIAL PROGRAM ELEMENTS

3.2.1 Pre-Injection Activities

3.2.1.1 Off-Site Access

With the assistance of the NYSDEC, CTNA obtained authorization from Snow Asset Management to access the Rockwood Gardens property for the purpose of implementing the IRM activities.

3.2.1.2 Utility Clearance

Prior to IRM implementation, a subsurface geophysical investigation was conducted by Underground Imaging Technologies, LLC (UIT) of Latham, New York to identify underground utilities and/or structures within the planned areas of remediation. The investigation was conducted on April 24, 2014 and identified several underground utilities, which were marked on the ground surface and also mapped. The investigation methods and findings were presented in UIT's Subsurface Geophysical Investigation report dated May 15, 2014 (included in Appendix E).

3.2.1.3 Injection Pilot Testing

On April 24, 2014, injection pilot testing was conducted at the former Interceram site and adjacent Rockwood Gardens property in accordance with the NYSDEC-approved IRM Work Plan. The pilot testing was conducted to evaluate the rate at which the subsurface formation would accept the

water/PersulfOx™ solution, thereby aiding in the planning/implementation of full-scale remedial injection activities.

During the pilot testing, the granular PersulfOx™ product was mixed with water at predetermined ratios and the resulting solution was injected via direct-push (Geoprobe) methods at five locations within the areas of targeted remediation: one on the western portion of the former Interceram property (in the vicinity of the SUMP); two in the area immediate east of Building 62 on the Rockwood Gardens property; and two to the west of Building 62 on the Rockwood Gardens property (one in the vicinity of S-2 and one in the vicinity of S-9). At the pilot test location in the vicinity of the SUMP, the PersulfOx™/water solution was injected across a depth range of 5 to 20 feet below grade. At the other locations, the solution was injected across a depth range of 3 to 9 feet below grade. At all of the locations, the solution was accepted by the subsurface formation at a favorable rate and without significant back pressure issues.

3.2.2 Injection Procedures

The first of two PersulfOx™ injection events was conducted during the period from June 2 – 6, 2014. The planned injection points were laid out in a grid pattern (to the extent possible) in each area of remediation, with approximately 15-foot spacing between each point. The prescribed injection point spacing was determined by Regenesis, based on soil conditions and contaminant loading. Figure 3 depicts the approximate injection point locations during this event, which included a total of 38 locations (24 to the east of Building 62 and 14 to the west of Building 62).

At most injection locations, Zebra utilized a track-mounted Geoprobe unit to drive hollow, stainless steel rods to a depth of approximately 9 feet below grade (based on review of soil boring logs from previous work indicating the presence of dense till below this depth). At injection locations in line with and upgradient of the SUMP, the injection rods were advanced to depths generally between 15 and 20 feet below grade, based on the presence of previously disturbed soil in these areas, and to achieve a greater vertical distribution of remedial products, as these locations are within the historical contaminant source area.

Upon reaching the desired depth, an expendable steel point was released from the bottom of the rods and a hose was connected to the top of the rods. The PersulfOx™ was mixed on site with potable water obtained from Rockwood Gardens' municipal water supply, according to mixing ratios provided by Regenesis. The product/water solution was then pumped, under pressure, into the subsurface. The rods were gradually raised in approximate 1-foot intervals during pumping, and a prescribed volume of solution (as determined by Regenesis) was injected at each location from the bottom depth, to depths generally between 3 and 7 feet below grade. Table 1 provides specific information for each injection location, including injection depth interval and amounts of PersulfOx™ and water injected. Upon completion of product injection, each borehole was sealed with bentonite. At locations within paved areas, the surface was restored using blacktop patch. At locations within grass-covered areas, the surface was restored with topsoil.

The second PersulfOx™ injection event was conducted during the period from July 21 – 24, 2014, following the same procedures as the first event, except that the injection locations were off-set from the initial locations by approximately 7.5 feet in order to provide additional product coverage within the area of remediation. Figure 4 depicts the approximate injection locations, which included 21 to the east of Building 62 and 15 to the west of Building 62. Corresponding injection location information is provided in Table 1.

The third and final injection event of the IRM activities was conducted during the period from September 29 – October 8, 2014, following the same procedures as the two previous injection events. This event consisted of injection of the 3-D Microemulsion solution in the areas to the east and west of Building 62 (in the areas of the SUMP and monitoring well S-2, respectively) and also the area to the north of Building 61 (in the area of monitoring well S-9). Figure 5 depicts the approximate injection locations, which included 19 to the east of Building 62, 14 to the west of Building 62; and 12 in the area to the north of Building 61. Corresponding injection location information is provided in Table 1.

3.3 DEVIATIONS FROM THE IRM WORK PLAN

Deviations from the IRM Work Plan were limited to the following:

- Elimination of three planned injection locations immediately west of Rockwood Gardens Building 62, between the building and the sidewalk, due to the presence of multiple

underground utilities running through this area. As an alternative, two injection locations were added to the west of the sidewalk, upgradient of monitoring well S-2.

- Elimination of three planned injection locations within the southernmost portion of the remediation area to the east of Building 62, due to the presence of dense soil conditions which precluded injection.

- Shifting of a few injection locations to the east of Building 62 due to the presence of underground utilities running through this area.

- Addition of an injection location for both PersulfOx™ and 3-D Microemulsion in the immediate vicinity of monitoring well MW-3.

- Reduction, by approximately 30 percent, in the prescribed volume of mixing water used during the 3-D Microemulsion injection in the area to the east of Rockwood Gardens Building 62, due to subsurface saturation and significant daylighting of the injection solution. CHA consulted with Regenesis prior to implementing this change and Regenesis concurred that this was an acceptable modification.

4.0 REMEDIAL PERFORMANCE / DOCUMENTATION SAMPLING

4.1 POST-INJECTION GROUNDWATER SAMPLING EVENTS

On August 28, 2014, approximately one month following the second PersulfOx™ injection event, CHA personnel returned to the Site to conduct groundwater monitoring activities, including measurement of water levels and collection of groundwater samples from the following monitoring wells/points: S-2; S-4, S-7, S-8, S-9, MW-3 and SUMP. Prior to conducting groundwater sampling activities, water levels were measured at each of these locations using an electronic water level meter. At each location, the water level was measured from the top of the well casing. Water levels were used in conjunction with previously surveyed top-of-casing elevations to determine groundwater elevations, which in turn, were used to develop the groundwater contour map included as Figure 6. Based on the groundwater elevation data, the local groundwater flow direction is generally toward the west, which is consistent with historical data.

Following collection of water level measurements, wells S-2, S-4, S-7, S-8 and MW-3 were purged and sampled following low-flow/minimal drawdown sampling methods, utilizing a submersible, pneumatic bladder pump with disposable bladders and polyethylene tubing. The IRM Work Plan stated that groundwater samples would be collected "utilizing methods consistent with the most recent annual groundwater sampling events performed at the site", referring to manual bailing or the use of a peristaltic pump with polyethylene tubing. Low-flow sampling methodology was ultimately selected for use (where feasible) during the post-remedial injection groundwater monitoring events based on the following advantages with this method: 1) minimal disturbance of the sampling point, thereby minimizing sampling artifacts; 2) reduced stress on the formation; 3) less mixing of stagnant casing water with formation water; and 4) better sample consistency/reduced artificial sample variability.

During well purging, at 5-minute intervals, CHA personnel monitored field parameters including temperature, pH, specific conductance, dissolved oxygen and turbidity. Wells were purged until

stabilization of parameters was observed (three consecutive readings within 10 percent) and turbidity levels were below 50 NTUs. Upon stabilization, groundwater samples were collected in laboratory-provided, pre-preserved containers. Between each well, the submersible pump was decontaminated using a solution of potable water and Alconox® detergent. Monitoring well S-9 and the SUMP were purged and sampled via manual bailing with disposable polyethylene bailers; S-9 because of very low yield and the SUMP because of its large diameter (8 inches) and resulting significant well volume. Groundwater sampling logs are included in Appendix G. Purge water was discharged to the pavement, where it evaporated, or to the ground surface in the vicinity of the well from which it was generated. For all wells, upon sample collection, sample containers were labeled and stored in a cooler with ice, pending submittal to the laboratory.

Upon completion of field activities, CHA transported the samples under chain-of-custody protocol to TestAmerica Laboratory's (TestAmerica) service center in Albany, New York. The samples were then transported by TestAmerica to its laboratory in Buffalo, New York for analysis. All samples were analyzed for VOCs by EPA Method 8260.

On January 13, 2015, approximately three months following the 3-D Microemulsion injection event, CHA returned to the Site to conduct a second round of post-injection groundwater monitoring. During this event, in accordance with the IRM Work Plan, only four wells were monitored: S-2, S-9, SUMP and MW-3. The same purging and sampling methods utilized for these wells during the August 2014 sampling event, as described above, were utilized during the January 2015 sampling event. Groundwater sampling logs are included in Appendix H. Purge water was discharged to the pavement where it evaporated, or to the ground surface in the vicinity of the well from which it was generated. Upon completion of field activities, CHA transported the samples under chain-of-custody protocol to TestAmerica's Albany, New York service center. The samples were then transported by TestAmerica to its laboratory in Buffalo, New York for analysis. All samples were analyzed for VOCs by EPA Method 8260.

4.2 GROUNDWATER ANALYTICAL RESULTS

The analytical results from the groundwater sampling events conducted in August 2014 and January 2015 are summarized in Table 3, which also includes historical analytical results and the New York State Ambient Water Quality Standards for comparison purposes. Figures 7 and 8 depict the contaminant concentrations in groundwater at the various well locations for the two sampling events. The results of the August 2014 sampling event indicated that VOCs were not detected at concentrations above laboratory reporting limits at the locations of monitoring wells S-4, S-7 or S-8. These wells were not sampled during the January 2015 sampling event.

The results of the August 2014 and January 2015 sampling events indicated that at the location of S-2 (immediately west of Building 62) the concentrations of the primary contaminants of concern 1,1,1-trichloroethane and trichloroethene were reduced by an order of magnitude as compared with the results from the January 2012 sampling event. In January 2012, 1,1,1-trichloroethane was detected at this location at a concentration of 44 micrograms per Liter (ug/L); in January 2015, this contaminant was not detected above the laboratory reporting limit of 8 ug/L. In January 2012, trichloroethene was detected at a concentration of 8,000 ug/L; in January 2015, this contaminant was detected at a concentration of 370 ug/L. The other primary contaminant of concern, cis-1,2-dichloroethene, was reduced to non-detectable levels at the time of the August 2014 sampling event, but then exhibited apparent rebound to a concentration of 450 ug/L, although still significantly lower in concentration than in January 2012, when it was detected at a concentration of 870 ug/L.

At the location of S-9, downgradient of well S-2, two VOCs (cis-1,2-dichloroethene and trichloroethene) were detected during the August 2014 and January 2015 sampling events. The concentration of trichloroethene was significantly reduced (660 ug/L in August 2014 reduced to 150 ug/L in January 2015), while the concentration of cis-1,2-dichloroethene increased, from 76 ug/L in August 2014 to 390 ug/L in January 2015. This increase may be a result of the breakdown of trichloroethene. It should be noted that this area was not subject to injection of PersulfOx^{TM}, but only 3-D Microemulsion.

At the location of the SUMP, east of Building 62, concentrations of trichloroethene and cis-1,2-dichloroethene were reduced by an order of magnitude as compared with the results from the January 2012 sampling event. In January 2012, both 1,1,1-trichloroethane and cis-1,2-dichloroethene were detected at this location at a concentration of 1,000 ug/L; neither of these contaminants was detected at a concentration above the laboratory reporting limit of 80 ug/L at this location in either the August 2014 or January 2015 sampling event.

At the location of MW-3, near the southeast portion of Building 62, concentrations of the three primary contaminants of concern did not change significantly since the January 2012 sampling event. In January 2015, concentrations of 1,1,1-trichloroethane, cis-1,2-dichloroethene and trichloroethene were detected at concentrations of 12 ug/L, 49 ug/L and 210 ug/L, respectively.

Table 4 presents groundwater analytical results for the compounds 1,1,1-trichloroethane, cis-1,2-dichloroethene, trichloroethene and tetrachloroethene, from the January 2012, August 2014 and January 2015 sampling events.

4.3 SUMMARY

The IRM for OU-2 associated with the former Interceram Site was completed in accordance with the NYSDEC-approved IRM Work Plan. Based on groundwater analytical results presented in Section 4.2, the immediate Remedial Action Objective was achieved, as concentrations of primary contaminants of concern were reduced by an order of magnitude at key monitoring locations. Although the analytical results from January 2015 indicate that concentrations of these contaminants remained above New York State Ambient Water Quality Standards, further reduction in VOC contaminant concentrations is anticipated over time, as bioremediation enhanced by the 3-D Microemulsion product is expected to continue. CHA consulted with Regenesis regarding the post-injection groundwater analytical results, and Regenesis indicated that the results are consistent with expectations and concurs that further reduction in contaminant concentrations is anticipated as a function of bioremediation, enhanced by the 3-D Microemulsion.

5.0 SITE REMEDY

The NYSDEC issued a Record of Decision (ROD) for the Site in March 2015, subsequent to completion of IRM activities and post-IRM groundwater monitoring. Based on the results of investigations completed at the Site and the adjacent Rockwood Gardens property, implementation of the IRM and evaluation of the post-IRM groundwater monitoring data, the NYSDEC selected "No Further Action" as the remedy for the Site. A copy of the complete ROD document is included in Appendix I.

The No Further Action remedy includes the implementation of institutional controls to address residual groundwater contamination. The selected remedy for the Site, as presented in the ROD, includes the following major components:

- Institutional control, in the form of an environmental easement, which:

    1. Requires the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);

    2. Allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

    3. Restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and

    4. Requires compliance with the NYSDEC-approved Site Management Plan.

- Development and implementation of a Site Management Plan, which details the provisions for the following:

    1. Management of future excavations in areas of remaining contamination;

    2. Evaluation of the potential for soil vapor intrusion for any new buildings developed on the Site or affected off-site areas, including provisions for implementing actions recommended to address exposures related to soil vapor intrusion;

3. Management and inspection of the identified engineering controls;

4. Additional applications of the ISCO amendments to address a rise or plateauing of contaminant concentrations or to ensure complete degradation of breakdown products;

5. Maintaining site access controls and NYSDEC notification;

6. Monitoring of groundwater to assess the performance and effectiveness of the remedy;

7. Monitoring for vapor intrusion for any new buildings developed on the Site or affected off-site areas;

8. Schedule of monitoring and frequency of submittals to the NYSDEC; and

9. Continued operation, maintenance, optimization, monitoring, inspection and reporting for the sub-slab depressurization systems currently operating on-site and off-site; and

10. Periodic reviews and certification of the institutional and/or engineering controls.

Note that the ROD previously issued for OU-1 required the implementation of an institutional control in the form of a deed restriction. The environmental easement included in this remedy supersedes the OU-1 ROD requirement for the deed restriction.

An environmental easement was granted to the NYSDEC by the Site owner and was filed in the Orange County Clerk's Office on January 26, 2017. A copy of the environmental easement and recording documents are included in Appendix J. The draft Site Management Plan was submitted to NYSDEC in August 2015 and was finalized in February 2017, following issuance of the environmental easement. The Site Management Plan was revised to incorporate the easement and now serves as the governing document for the Site and the adjacent Rockwood Gardens property. Future monitoring activities will be documented in Periodic Review Reports, in accordance with NYSDEC requirements.

TABLES

Table 1
Chemical Oxidation Injection Point Information
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Walllkill, New York

Date	Injection Point ID #	Injection Depth Interval (bgs)	Pounds/Gallons of Product	Gallons of Water	Intial Pressure (PSI)	Ending Pressure (PSI)
6/2/2014	1	6'-20'	241 pounds of PersulfOx	150	NM	NM
6/2/2014	2	3'-12'	241 pounds of PersulfOx	150	NM	NM
6/2/2014	3	3'-20'	241 pounds of PersulfOx	150	12	12
6/2/2014	4	3'-20'	241 pounds of PersulfOx	150	20	20
6/2/2014	5	3'-20'	241 pounds of PersulfOx	150	20	20
6/2/2014	6	3'-20'	241 pounds of PersulfOx	150	22	17
6/3/2014	7	3'-20'	241 pounds of PersulfOx	150	11	7
6/3/2014	8	3'-20'	241 pounds of PersulfOx	150	25	19
6/3/2014	9	10'-20'	241 pounds of PersulfOx	150	22	17
6/3/2014	10	3'-15'	241 pounds of PersulfOx	150	20	14
6/3/2014	11	4'-12'	241 pounds of PersulfOx	150	20	10
6/3/2014	12	3'-9'	241 pounds of PersulfOx	150	30+	17
6/3/2014	13	3'-9'	95 pounds of PersulfOx	65	30+	25
6/4/2014	14	5.5'-9'	95 pounds of PersulfOx	65	17	15
6/4/2014	15	6'-9'	95 pounds of PersulfOx	65	15	13
6/4/2014	16	3'-9'	95 pounds of PersulfOx	65	18	15
6/4/2014	17	5.5'-9'	95 pounds of PersulfOx	65	15	15
6/4/2014	18	3'-9'	95 pounds of PersulfOx	65	18	13
6/4/2014	19	3'-9'	95 pounds of PersulfOx	65	18	13
6/4/2014	20	7.5'-9'	95 pounds of PersulfOx	65	11	11
6/4/2014	21	5.5'-7.5'	95 pounds of PersulfOx	65	15	11
6/4/2014	22	3'-9'	95 pounds of PersulfOx	65	11	11
6/4/2014	23	4'-9'	95 pounds of PersulfOx	65	11	11
6/4/2014	24	5'-9'	90 pounds of PersulfOx	61	25	22
6/4/2014	25	4'-9'	90 pounds of PersulfOx	61	25	22
6/5/2014	26	5'-9'	90 pounds of PersulfOx	61	11	11
6/5/2014	27	4'-9'	90 pounds of PersulfOx	61	14	12
6/5/2014	28	4'-8'	90 pounds of PersulfOx	61	12	10
6/5/2014	29	3'-9'	90 pounds of PersulfOx	61	12	10
6/5/2014	30	7'-9'	90 pounds of PersulfOx	61	14	12
6/5/2014	31	3'-9'	90 pounds of PersulfOx	61	12	10
6/5/2014	32	4'-9'	90 pounds of PersulfOx	61	15	15
6/5/2014	33	3'-9'	124 pounds of PersulfOx	65	22	18
6/5/2014	34	3'-9'	124 pounds of PersulfOx	65	20	14
6/6/2014	35	3'-9'	124 pounds of PersulfOx	65	17	15
6/6/2014	36	3'-8'	137.5 pounds of PersulfOx	65	18	17
6/6/2014	37	3'-9'	137.5 pounds of PersulfOx	65	22	20
7/21/2014	38	9'-17'	241 pounds of PersulfOx	150	NM	NM
7/21/2014	39	5'-19'	241 pounds of PersulfOx	150	NM	NM
7/21/2014	40	5'-20'	241 pounds of PersulfOx	150	NM	NM
7/22/2014	41	5'-17'	241 pounds of PersulfOx	150	30	18
7/22/2014	42	5'-17'	241 pounds of PersulfOx	150	30	14
7/22/2014	43	8'-16'	241 pounds of PersulfOx	150	35	20
7/22/2014	44	5'-15'	241 pounds of PersulfOx	150	25	20
7/22/2014	45	8'-18'	241 pounds of PersulfOx	150	25	20
7/22/2014	46	8'-20'	241 pounds of PersulfOx	150	NM	NM
7/22/2014	47	6'-14'	241 pounds of PersulfOx	150	35	21
7/22/2014	48	4'-9'	110 pounds of PersulfOx	70	35	21
7/22/2014	49	4'-9'	110 pounds of PersulfOx	70	35	19
7/22/2014	50	4'-9'	110 pounds of PersulfOx	70	NM	NM
7/22/2014	51	4'-9'	110 pounds of PersulfOx	70	34	19
7/23/2014	52	4'-9'	110 pounds of PersulfOx	70	23	11
7/23/2014	53	4'-9'	110 pounds of PersulfOx	70	25	17
7/23/2014	54	4'-9'	110 pounds of PersulfOx	70	20	9
7/23/2014	55	4'-9'	110 pounds of PersulfOx	70	15	15
7/23/2014	56	4'-9'	110 pounds of PersulfOx	70	18	11
7/22/2014	57	4'-9'	110 pounds of PersulfOx	70	35	22
7/23/2014	58	4'-9'	110 pounds of PersulfOx	70	30+	20
7/23/2014	59	6'-9'	110 pounds of PersulfOx	70	30+	18
7/23/2014	60	6'-9'	110 pounds of PersulfOx	70	25	13
7/23/2014	61	5'-8'	110 pounds of PersulfOx	70	30+	25
7/23/2014	62	6'-9'	110 pounds of PersulfOx	70	25	14
7/24/2014	63	4'-7'	110 pounds of PersulfOx	70	30+	22
7/24/2014	64	5'-7.5'	110 pounds of PersulfOx	70	30	24
7/24/2014	65	4'-7.5'	110 pounds of PersulfOx	70	30	25
7/24/2014	66	4.5'-7.5'	110 pounds of PersulfOx	70	30+	15

Table 1
Chemical Oxidation Injection Point Information
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Walllkill, New York

Date	Injection Point ID #	Injection Depth Interval (bgs)	Pounds/Gallons of Product	Gallons of Water	Intial Pressure (PSI)	Ending Pressure (PSI)
7/24/2014	67	5'-9'	110 pounds of PersulfOx	70	28	15
7/24/2014	68	5'-9'	110 pounds of PersulfOx	70	27	15
7/24/2014	69	5'-9'	110 pounds of PersulfOx	70	30	17
7/24/2014	70	6'-9'	110 pounds of PersulfOx	70	27	17
7/24/2014	71	6'-9'	110 pounds of PersulfOx	70	30+	17
7/24/2014	72	4'-9'	110 pounds of PersulfOx	70	28	24
9/29/2014	73	4'-17'	33 gallons of 3DME	294	NM	NM
9/29/2014	74	4'-17'	33 gallons of 3DME	294	17	11
9/29/2014	75	6'-12'	33 gallons of 3DME	294	8	11
9/29/2014	76	7'-17'	33 gallons of 3DME	294	17	10
9/30/2014	77	10'-17'	33 gallons of 3DME	294	12	5
9/30/2014	78	8'-17'	33 gallons of 3DME	294	18	11
9/30/2014	79	3'-9'	16 gallons of 3DME	144	14	12
9/30/2014	80	4'-9'	16 gallons of 3DME	144	14	8
9/30/2014	81	4'-9'	16 gallons of 3DME	144	13	11
9/30/2014	82	4'-9'	16 gallons of 3DME	144	14	6
9/30/2014	83	3'-9'	16 gallons of 3DME	144	13	6
10/1/2014	84	4'-9'	16 gallons of 3DME	144	13	10
10/1/2014	85	4'-9'	16 gallons of 3DME	144	13	7
10/1/2014	86	4'-9'	16 gallons of 3DME	144	8	7
10/1/2014	87	4'-9'	16 gallons of 3DME	144	30+	22
10/1/2014	88	3'-6.5'	20 gallons of 3DME	180	14	8
10/2/2014	89	3'-7'	20 gallons of 3DME	180	25	15
10/2/2014	90	3'-8'	20 gallons of 3DME	180	30+	22
10/2/2014	91	4'-9'	20 gallons of 3DME	180	16	11
10/2/2014	92	4'-9'	20 gallons of 3DME	180	25	13
10/2/2014	93	4'-8'	20 gallons of 3DME	126	21	14
10/2/2014	94	4'-9'	20 gallons of 3DME	126	30+	17
10/2/2014	95	3'-8'	20 gallons of 3DME	126	27	15
10/3/2014	96	3'-9'	20 gallons of 3DME	126	27	8
10/3/2014	97	3'-9'	20 gallons of 3DME	126	22	9
10/3/2014	98	3'-9'	20 gallons of 3DME	126	30+	20
10/3/2014	99	3'-7'	20 gallons of 3DME	126	21	16
10/3/2014	100	3'-9'	20 gallons of 3DME	126	21	11
10/3/2014	101	3'-8'	20 gallons of 3DME	126	28	13
10/6/2014	102	4'-9'	20 gallons of 3DME	126	13	6
10/6/2014	103	4'-9'	20 gallons of 3DME	126	20	15
10/6/2014	104	4'-9'	20 gallons of 3DME	126	30+	18
10/6/2014	105	4'-9'	20 gallons of 3DME	126	27	18
10/6/2014	106	4'-9'	20 gallons of 3DME	126	26	14
10/7/2014	107	4'-9'	20 gallons of 3DME	126	26	17
10/7/2014	108	3'-9'	20 gallons of 3DME	126	28	19
10/7/2014	109	3'-9'	20 gallons of 3DME	126	23	14
10/7/2014	110	3'-9'	20 gallons of 3DME	126	19	8
10/7/2014	111	4'-9'	20 gallons of 3DME	126	27	13
10/7/2014	112	4'-9'	20 gallons of 3DME	126	30+	19
10/7/2014	113	4'-9'	20 gallons of 3DME	126	NM	NM
10/8/2014	114	8'-17'	33 gallons of 3DME	200	13	9
10/8/2014	115	3'-9'	16 gallons of 3DME	100	7	5
10/8/2014	116	4'-15'	33 gallons of 3DME	200	9	7
10/8/2014	117	3'-9'	16 gallons of 3DME	100	13	6

Notes:
NM = Not Measured
bgs = below ground surface
PSI = pounds per square inch

Table 2a
Depth to Water in Monitoring Wells (Feet)
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Wallkill, NY

	Well ID								
	SUMP	**MW-3**	**S-8**	**S-2**	**D-2**	**S-7**	**S-4**	**FRW**	**S-9**
TOC:	729.04	726.18	723.28	719.12	718.84	715.56	701.39	668.79	N/A
12/03/09	6.45	NI	NI	4.38	4.54	NI	NI	1.80	NI
04/06/11	5.00	4.12	NI	3.08	2.77	4.23	0.51	0.54	NI
01/13/12	4.83	4.12	1.67	2.77	2.88	3.45	1.10	0.25	NI
08/28/14	5.40	7.61	6.90	5.82	NM	6.79	7.00	NM	6.41
01/13/15	5.42	4.51	NM	3.88	NM	NM	NM	NM	2.72

Notes:
TOC = Elevation of the reference point, the top of the PVC casing, in feet above mean sea level (MSL).
NI = Data not available; well not yet installed.
NM = No measurement collected for this date.

Table 2b
Groundwater Elevations (Feet above MSL)
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Wallkill, New York

	Well ID								
	SUMP	**MW-3**	**S-8**	**S-2**	**D-2**	**S-7**	**S-4**	**FRW**	**S-9**
TOC:	729.04	726.18	723.28	719.12	718.84	715.56	701.39	668.79	N/A
12/03/09	722.59	NM	NI	714.74	714.30	NI	NI	666.99	NI
04/06/11	724.04	722.06	NI	716.04	716.07	711.33	700.88	668.25	NI
01/13/12	724.21	722.06	721.61	716.35	715.96	712.11	700.29	668.54	NI
08/28/14	723.64	718.57	716.38	713.30	NM	708.77	694.39	NM	N/A
01/13/15	723.62	721.67	NM	715.24	NM	NM	NM	NM	N/A

Notes:
TOC = Elevation of the reference point, the top of the PVC casing, in feet above mean sea level (MSL).
NI = Data not available; well not yet installed.
NM = No measurement collected for this date.
N/A = Data not available

Table 3
Groundwater Analytical Results
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Wallkill, NY

Sample ID		D-2	D-2	D-2	D-2	S-2	S-2	S-2	S-2	S-2	S-2	S-2	S-2	S-2	S-2	S-2	S-2 Dilution 200	S-2	S-2	
Sample Date		11/2007	12/3/2009	4/6/2011	1/13/2012	6/1995	1/2001	1/2002	5/2003	2/2004	5/2005	4/2006	11/2007	12/3/2009	4/6/2011	1/13/2012	1/13/2012	**8/28/2014**	**1/13/2015**	
chemical_name	units																			TOGS 1.1.1 Class GA Ambient WQ Standard
1,1,1-Trichloroethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	44	200 U	24 H	8 U	5
1,1,2,2-Tetrachloroethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	11 H	8 U	5
1,1,2-Trichloroethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	1
1,1-Dichloroethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	8.8	200 U	5.1 H	8 U	5
1,1-Dichloroethene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	31	200 U	5 UH	8 U	5
1,2,4-Trichlorobenzene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	NS
1,2: Dibromo-3-Chloropropane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	0.04
1,2-Dibromoethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	0.0006
1,2-Dichlorobenzene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	3
1,2-Dichloroethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	0.6
1,2-Dichloropropane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	1
1,3-Dichlorobenzene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	3
1,4-Dichlorobenzene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	NS
2-Butanone	ug/l	U	10 U	10 U	10 U	U	U	U	U	U	U	U	U	1000 U	800 U	10 U	2000 U	50 UH	80 U	50
2-Hexanone	ug/l	U	5 U	5 U	5 U	U	U	U	U	U	U	U	U	1000 U	400 U	5 U	1000 U	25 UH	40 U	50
4-Methyl-2-Pentanone	ug/l	U	5 U	5 U	5 U	U	U	U	U	U	U	U	U	200 U	400 U	5 U	1000 U	25 UH	40 U	NS
Acetone	ug/l	U	3.8	10 U	10 U	U	U	U	U	U	U	U	U	1000 U	800 U	10 U	2000 U	50 UH	110	50
Benzene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	1
Benzene, (1-methylethyl)-	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	5
Bromodichloromethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	50
Bromoform	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	50
Bromomethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	11 UH	8 U	5
Carbon Disulfide	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	6.7	15	60
Carbon Tetrachloride	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	5
Chlorobenzene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	5
Chloroethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	5
Chloroform	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	7
Chloromethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	25 UH	8 U	5
Cis-1,2-Dichloroethene	ug/l	U	1 U	1 U	1 U	4,400	1,000	710	1,100	510	590	600	690	1,800	770	850 E J	870	5 UH	450	5
Cis-1,3-Dichloropropene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	0.4
Cyclohexane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	NS
Dichlorobromomethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	50
Dichlorodifluoromethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	5
Ethylbenzene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	5
Freon 113	ug/l	U	1 U	1 U	1 U	U	U	1,300 J	U	U	2	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	NS
Methyl Acetate	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	13	20 U	NS
Methyl T-Butyl Ether (MTBE)	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	10
Methylcyclohexane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	NS
Methylene Chloride	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	5
Styrene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	5
Tetrachloroethene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	5.9	200 U	5 UH	8 U	5
Toluene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	5
Trans-1,2-Dichloroethene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	4.1	200 U	5 UH	8 U	5
Trans-1,3-Dichloropropene	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	0.4
Trichloroethylene	ug/l	U	0.57	1 U	1 U	26,000	7,000	3,900	8,800	4,200	4,500	6,100	5,800	17,000	7,300	3400 E J	8000	5 UH	370	5
Trichlorofluoromethane	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	5
Vinyl Chloride	ug/l	U	1 U	1 U	1 U	U	U	U	U	U	U	U	U	200 U	80 U	1 U	200 U	5 UH	8 U	2
Xylenes, Total	ug/l	U	2 U	2 U	2 U	U	U	U	U	U	U	U	U	200 U	160 U	2 U	400 U	10 UH	16 U	5

Notes:

NS = No Standard

J = Estimated value

U = Non-detect at associated value

E = Data was extrapolated

H - Sample was prepped or analyzed beyond the specified holding time

S-2, CHA-1, MW-3, and SUMP results were quantitated by extrapolating data above the highest calibration standard, as a result, these samples were diluted.

Table 3
Groundwater Analytical Results
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Wallkill, NY

Sample ID		CHA-1	CHA-1	CHA-1 Dilution 200	CHA-1	CHA-1	S-4	S-4	S-4	S-7	S-7	S-7	
Sample Date		4/6/2011	1/13/2012	1/13/2012	8/28/2014	1/13/2015	4/6/2011	1/13/2012	8/28/2014	4/6/2011	1/13/2012	**8/28/2014**	
chemical_name	units												TOGS 1.1.1 Class GA Ambient WQ Standard
1,1,1-Trichloroethane	ug/l	80 U	44	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,1,2,2-Tetrachloroethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,1,2-Trichloroethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	1
1,1-Dichloroethane	ug/l	80 U	8.7	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,1-Dichloroethene	ug/l	80 U	31	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,2,4-Trichlorobenzene	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	NS
1,2: Dibromo-3-Chloropropane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	0.04
1,2-Dibromoethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	0.0006
1,2-Dichlorobenzene	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	3
1,2-Dichloroethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	0.6
1,2-Dichloropropane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	1
1,3-Dichlorobenzene	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	3
1,4-Dichlorobenzene	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	NS
2-Butanone	ug/l	800 U	10 U	2000 U	2000 U	80 U	10 U	10 U	10 U	10 U	10 U	10 U	50
2-Hexanone	ug/l	400 U	5 U	1000 U	1000 U	40 U	5 U	5 U	5 U	5 U	5 U	5 U	50
4-Methyl-2-Pentanone	ug/l	400 U	5 U	1000 U	1000 U	40 U	5 U	5 U	5 U	5 U	5 U	5 U	NS
Acetone	ug/l	800 U	10 U	2000 U	2000 U	110	21	10 U	10 U	44	10 U	10 U	50
Benzene	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	1
Benzene, (1-methylethyl)-	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Bromodichloromethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	50
Bromoform	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	50
Bromomethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Carbon Disulfide	ug/l	80 U	1 U	200 U	200 U	14	1 U	1 U	1 U	1 U	1 U	1 U	60
Carbon Tetrachloride	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Chlorobenzene	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Chloroethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Chloroform	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	7
Chloromethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Cis-1,2-Dichloroethene	ug/l	740	860 E	940	200 U	450	1 U	1 U	1 U	1 U	1 U	1 U	5
Cis-1,3-Dichloropropene	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	0.4
Cyclohexane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	NS
Dichlorobromomethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	50
Dichlorodifluoromethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Ethylbenzene	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Freon 113	ug/l	80 U	2.9	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	NS
Methyl Acetate	ug/l	80 U	1 U	200 U	500 U	20 U	1 U	1 U	2.5 U	1 U	1 U	2.5 U	NS
Methyl T-Butyl Ether (MTBE)	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	10
Methylcyclohexane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	NS
Methylene Chloride	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Styrene	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Tetrachloroethene	ug/l	80 U	5.9	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Toluene	ug/l	80 U	1 U	200 U	200 U	8 U	1.7	1 U	1 U	1 U	1 U	1 U	5
Trans-1,2-Dichloroethene	ug/l	80 U	4.3	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Trans-1,3-Dichloropropene	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	0.4
Trichloroethylene	ug/l	7,100	3500 E	8700	200 U	350	1 U	1 U	1 U	1 U	1 U	1 U	5
Trichlorofluoromethane	ug/l	80 U	1 U	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Vinyl Chloride	ug/l	80 U	1	200 U	200 U	8 U	1 U	1 U	1 U	1 U	1 U	1 U	2
Xylenes, Total	ug/l	160 U	2 U	400 U	400 U	16 U	2 U	2 U	2 U	2 U	2 U	2 U	5

Notes:
NS = No Standard
J = Estimated value
U = Non-detect at associated value
E = Data was extrapolated
H - Sample was prepped or analyzed beyond the specified holding time
S-2, CHA-1, MW-3, and SUMP results were quantitated by extrapolating data above the highest calibration standard, as a result, these samples were diluted.

Table 3
Groundwater Analytical Results
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Wallkill, NY

Sample ID		S-8	S-8	S-9	S-9	FRW	FRW	FRW	FRW	MW-3	MW-3	MW-3	MW-3 Dilution 4	MW-3	MW-3	
Sample Date		1/13/2012	8/28/2014	**8/28/2014**	**1/13/2015**	11/2007	12/3/2009	4/6/2011	1/13/2012	9/1993	4/6/2011	1/13/2012	1/13/2012	**8/28/2014**	**1/13/2015**	
chemical_name	units															TOGS 1.1.1 Class GA Ambient WQ Standard
1,1,1-Trichloroethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	4 J	17	13	15	11	12	5
1,1,2,2-Tetrachloroethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
1,1,2-Trichloroethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	1
1,1-Dichloroethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
1,1-Dichloroethene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4.3	2.7	4 U	4 U	4 U	5
1,2,4-Trichlorobenzene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	NS
1,2: Dibromo-3-Chloropropane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	0.04
1,2-Dibromoethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	0.0006
1,2-Dichlorobenzene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	3
1,2-Dichloroethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	0.6
1,2-Dichloropropane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	1
1,3-Dichlorobenzene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	3
1,4-Dichlorobenzene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	NS
2-Butanone	ug/l	10 U	10 U	100 UH	100 U	U	10 U	10 U	10 U	U	40 U	10 U	40 U	40 U	40 U	50
2-Hexanone	ug/l	5 U	5 U	50 UH	50 U	U	5 U	5 U	5 U	U	20 U	5 U	20 U	20 U	20 U	50
4-Methyl-2-Pentanone	ug/l	5 U	5 U	50 UH	50 U	U	5 U	5 U	5 U	U	20 U	5 U	20 U	20 U	20 U	NS
Acetone	ug/l	10 U	10 U	100 UH	100 U	U	10 U	10 U	10 U	U	40 U	10 U	40 U	40 U	40 U	50
Benzene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	1
Benzene, (1-methylethyl)-	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Bromodichloromethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	50
Bromoform	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	50
Bromomethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Carbon Disulfide	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	60
Carbon Tetrachloride	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Chlorobenzene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Chloroethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Chloroform	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	2 J	4 U	1 U	4 U	4 U	4 U	7
Chloromethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Cis-1,2-Dichloroethene	ug/l	1 U	1 U	76 H	390	U	1 U	1 U	1 U	U	28	31	37	36	49	5
Cis-1,3-Dichloropropene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	0.4
Cyclohexane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	NS
Dichlorobromomethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	50
Dichlorodifluoromethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Ethylbenzene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Freon 113	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	5.5	10	12	9.2	13	NS
Methyl Acetate	ug/l	1 U	2.5 U	25 UH	25 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	NS
Methyl T-Butyl Ether (MTBE)	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	10
Methylcyclohexane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	NS
Methylene Chloride	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Styrene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Tetrachloroethene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Toluene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Trans-1,2-Dichloroethene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Trans-1,3-Dichloropropene	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	0.4
Trichloroethylene	ug/l	1 U	1 U	660 H	150	U	1 U	1 U	1 U	8 J	210	210 E	240	160	210	5
Trichlorofluoromethane	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	1 U	4 U	4 U	4 U	5
Vinyl Chloride	ug/l	1 U	1 U	10 UH	10 U	U	1 U	1 U	1 U	U	4 U	2.1	4 U	4 U	4 U	2
Xylenes, Total	ug/l	2 U	2 U	20 UH	20 U	U	2 U	2 U	2 U	U	8 U	2 U	8 U	8 U	8 U	5

Notes:

NS = No Standard

J = Estimated value

U = Non-detect at associated value

E = Data was extrapolated

H - Sample was prepped or analyzed beyond the specified holding time

S-2, CHA-1, MW-3, and SUMP results were quantitated by extrapolating data above the highest calibration standard, as a result, these samples were diluted.

Table 3
Groundwater Analytical Results
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Wallkill, NY

Sample ID		SUMP	SUMP	SUMP	SUMP	SUMP	SUMP	SUMP	SUMP	SUMP	SUMP	SUMP	SUMP Dilution 80	SUMP	SUMP	
Sample_Date		6/1995	1/2001	1/2002	5/2003	2/2004	5/2005	4/2006	11/2007	12/3/2009	4/6/2011	1/13/2012	1/13/2012	**8/28/2014**	**1/13/2015**	
chemical_name	units															TOGS 1.1.1 Class GA Ambient WQ Standard
1,1,1-Trichloroethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	2	80 U	80 U	80 U	5
1,1,2,2-Tetrachloroethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
1,1,2-Trichloroethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	1
1,1-Dichloroethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	2.8	80 U	80 U	80 U	5
1,1-Dichloroethene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	6.1	80 U	80 U	80 U	5
1,2,4-Trichlorobenzene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	NS
1,2: Dibromo-3-Chloropropane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	0.04
1,2-Dibromoethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	0.0006
1,2-Dichlorobenzene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	3
1,2-Dichloroethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	0.6
1,2-Dichloropropane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	1
1,3-Dichlorobenzene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	3
1,4-Dichlorobenzene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	NS
2-Butanone	ug/l	U	U	U	U	U	U	U	U	5 U	1000 U	10 U	800 U	800 U	800 U	50
2-Hexanone	ug/l	U	U	U	U	U	U	U	U	5 U	500 U	5 U	400 U	400 U	400 U	50
4-Methyl-2-Pentanone	ug/l	U	U	U	U	U	U	U	U	1 U	500 U	5 U	400 U	400 U	400 U	NS
Acetone	ug/l	U	U	U	U	U	U	U	U	1 U	1000 U	10 U	800 U	800 U	800 U	50
Benzene	ug/l	U	U	U	U	U	U	U	U	5 U	100 U	1 U	80 U	80 U	80 U	1
Benzene, (1-methylethyl)-	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Bromodichloromethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	50
Bromoform	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	50
Bromomethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Carbon Disulfide	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	60
Carbon Tetrachloride	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Chlorobenzene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Chloroethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Chloroform	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	7
Chloromethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	120	5
Cis-1,2-Dichloroethene	ug/l	U	820	990	960	1,100	1,100	1,100	420	1200	1400	840 E	1000	80 U	80 U	5
Cis-1,3-Dichloropropene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	0.4
Cyclohexane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	NS
Dichlorobromomethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	50
Dichlorodifluoromethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	35	80 U	80 U	80 U	5
Ethylbenzene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Freon 113	ug/l	1,800	2,900	1,700	2,300	2,400	2,000	2,100	380	3400	5600	3900 E	4900	1600	2300	NS
Methyl Acetate	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	200 U	200 U	NS
Methyl T-Butyl Ether (MTBE)	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	10
Methylcyclohexane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	NS
Methylene Chloride	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Styrene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Tetrachloroethene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Toluene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Trans-1,2-Dichloroethene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	2.3	80 U	80 U	80 U	5
Trans-1,3-Dichloropropene	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	0.4
Trichloroethylene	ug/l	160,000	630	680	580	630	640	810	290	970	1400	850 E	1000	80 U	80 U	5
Trichlorofluoromethane	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	1 U	80 U	80 U	80 U	5
Vinyl Chloride	ug/l	U	U	U	U	U	U	U	U	1 U	100 U	49	80 U	80 U	80 U	2
Xylenes, Total	ug/l	U	U	U	U	U	U	U	U	2 U	200 U	2 U	160 U	160 U	160 U	5

Notes:
NS = No Standard
J = Estimated value
U = Non-detect at associated value
E = Data was extrapolated
H - Sample was prepped or analyzed beyond the specified holding time
S-2, CHA-1, MW-3, and SUMP results were quantitated by extrapolating data above the highest calibration standard, as a result, these samples were diluted.

Table 4
Groundwater Analytical Results - Primary Contaminants of Concern
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Wallkill, NY

Sample UD		S-2	S-2 Dilution 200	S-2	S-2	
Sample Date		1/13/2012	1/13/2012	**8/28/2014**	**1/13/2015**	
chemical_name	units					TOGS 1.1.1 Class GA Ambient WQ Standard
1,1,1-Trichloroethane	ug/l	44	200 U	24 H	8 U	5
Cis-1,2-Dichloroethene	ug/l	850 E J	870	5 UH	450	5
Tetrachloroethene	ug/l	5.9	200 U	5 UH	8 U	5
Trichloroethylene	ug/l	3400 E J	8000	5 UH	370	5

Sample ID		S-4	S-4	S-7	S-7	
Sample Date		1/13/2012	8/28/2014	1/13/2012	**8/28/2014**	
chemical_name	units					TOGS 1.1.1 Class GA Ambient WQ Standard
1,1,1-Trichloroethane	ug/l	1 U	1 U	1 U	1 U	5
Cis-1,2-Dichloroethene	ug/l	1 U	1 U	1 U	1 U	5
Tetrachloroethene	ug/l	1 U	1 U	1 U	1 U	5
Trichloroethylene	ug/l	1 U	1 U	1 U	1 U	5

Sample ID		S-8	S-8	S-9	S-9	
Sample Date		1/13/2012	8/28/2014	**8/28/2014**	**1/13/2015**	
chemical_name	units					TOGS 1.1.1 Class GA Ambient WQ Standard
1,1,1-Trichloroethane	ug/l	1 U	1 U	10 UH	10 U	5
Cis-1,2-Dichloroethene	ug/l	1 U	1 U	76 H	390	5
Tetrachloroethene	ug/l	1 U	1 U	10 UH	10 U	5
Trichloroethylene	ug/l	1 U	1 U	660 H	150	5

Sample ID		MW-3	MW-3 Dilution 4	MW-3	MW-3	
Sample Date		1/13/2012	1/13/2012	**8/28/2014**	**1/13/2015**	
chemical_name	units					TOGS 1.1.1 Class GA Ambient WQ Standard
1,1,1-Trichloroethane	ug/l	13	15	11	12	5
Cis-1,2-Dichloroethene	ug/l	31	37	36	49	5
Tetrachloroethene	ug/l	1 U	4 U	4 U	4 U	5
Trichloroethylene	ug/l	210 E	240	160	210	5

Sample ID		SUMP	SUMP Dilution 80	SUMP	SUMP	
Sample Date		1/13/2012	1/13/2012	**8/28/2014**	**1/13/2015**	
chemical_name	units					TOGS 1.1.1 Class GA Ambient WQ
1,1,1-Trichloroethane	ug/l	2	80 U	80 U	80 U	5
Cis-1,2-Dichloroethene	ug/l	840 E	1000	80 U	80 U	5
Tetrachloroethene	ug/l	1 U	80 U	80 U	80 U	5
Trichloroethylene	ug/l	850 E	1000	80 U	80 U	5

Notes:
NS = No Standard
J = Estimated value
U = Non-detect at associated value
E = Data was extrapolated
H - Sample was prepped or analyzed beyond the specified holding time
S-2, CHA-1, MW-3, and SUMP results were quantitated by extrapolating data above the highest calibration standard, as a result, these samples were diluted.
Shaded cells indicated detected concentrations above the NYS TOGS 1.1.1 Ambient Water Quality Standard

FIGURES

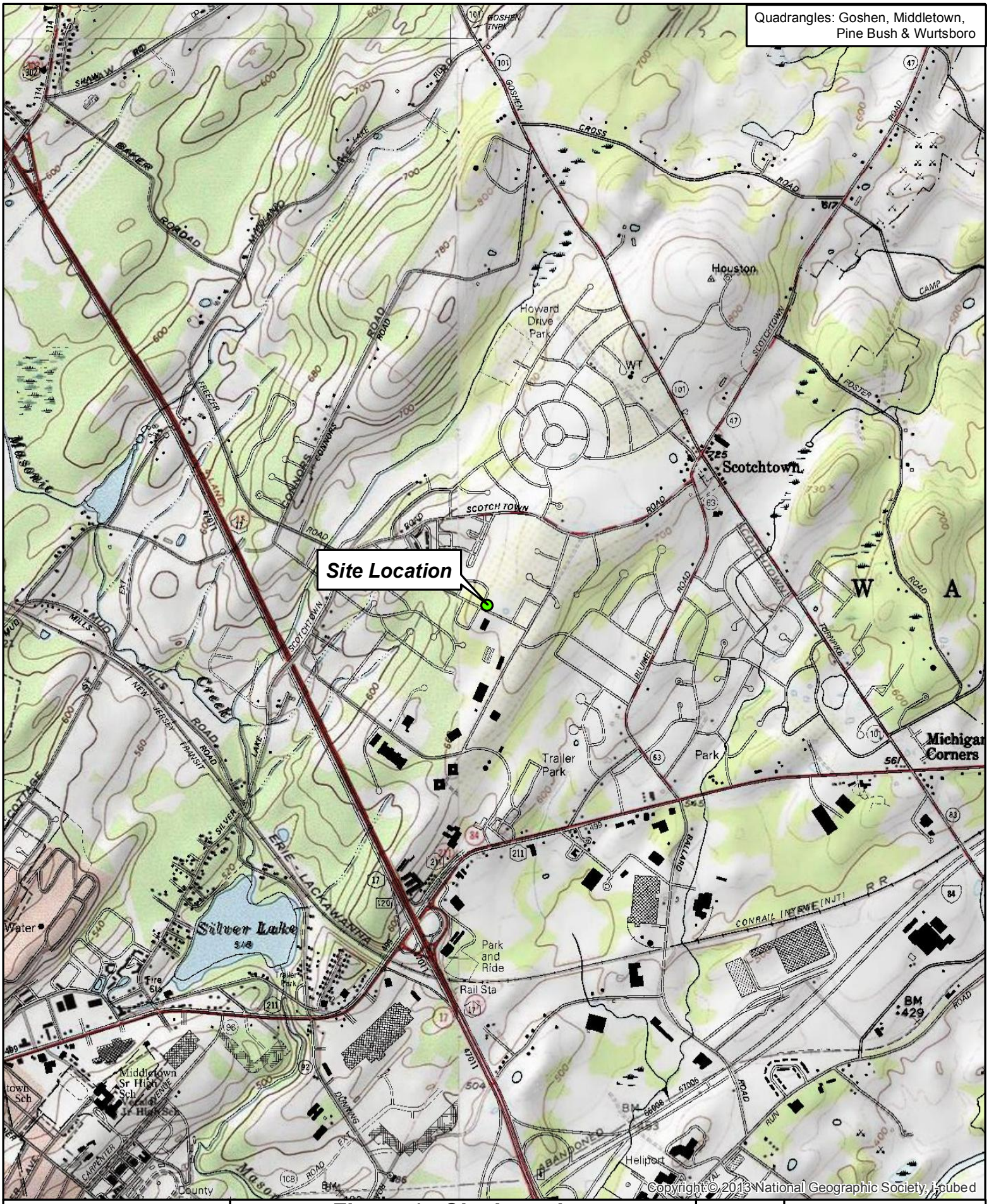

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Figure 1 - Site Location

Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Middletown, NY 10941

N W E S
1 inch = 2,000 feet

Project No. : 28574
Date : February 2015
0 1,000 2,000 Feet

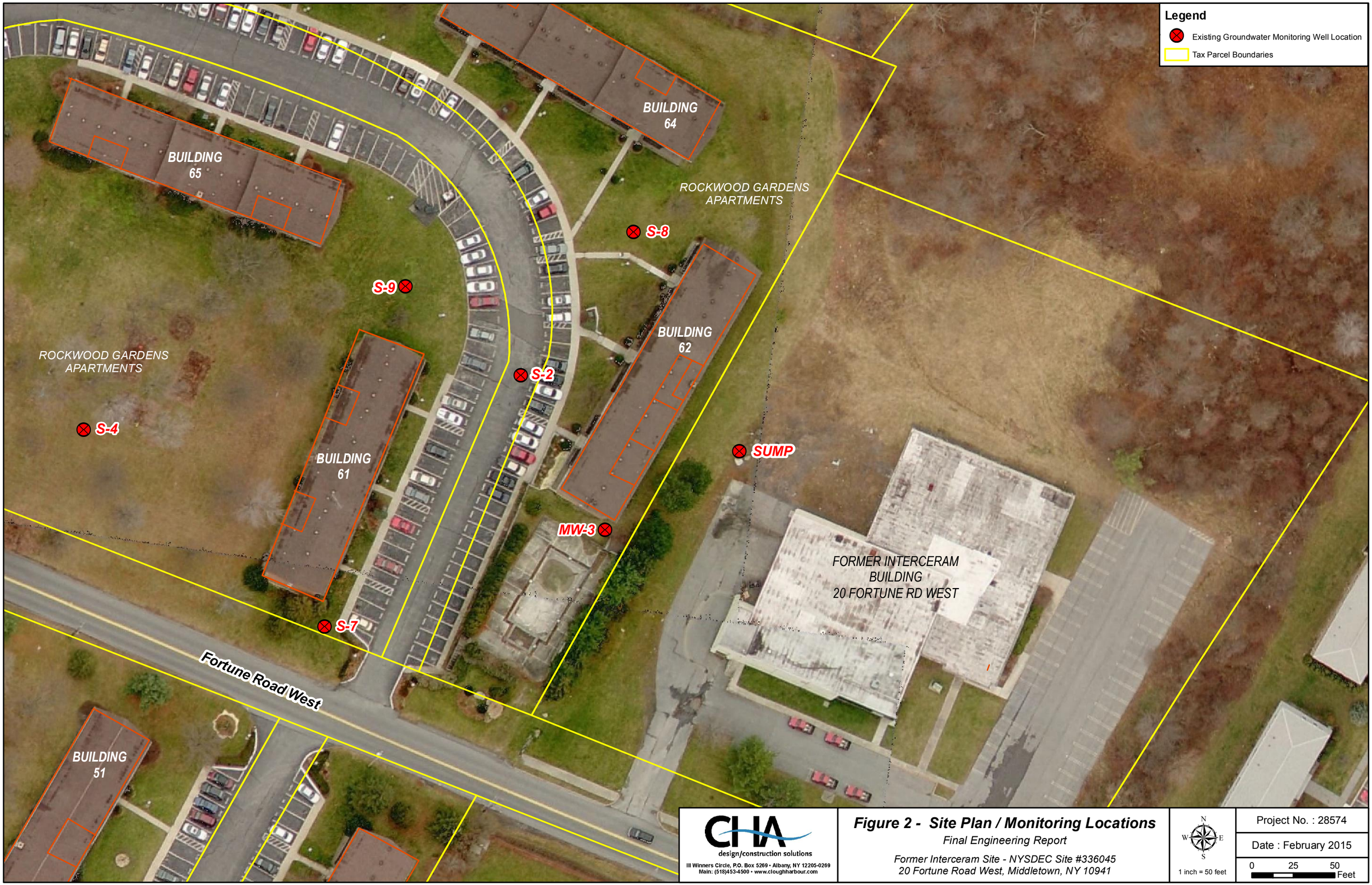

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Figure 2 - Site Plan / Monitoring Locations

Final Engineering Report

Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Middletown, NY 10941

N W E S

1 inch = 50 feet

Project No. : 28574

Date : February 2015

0 25 50 Feet

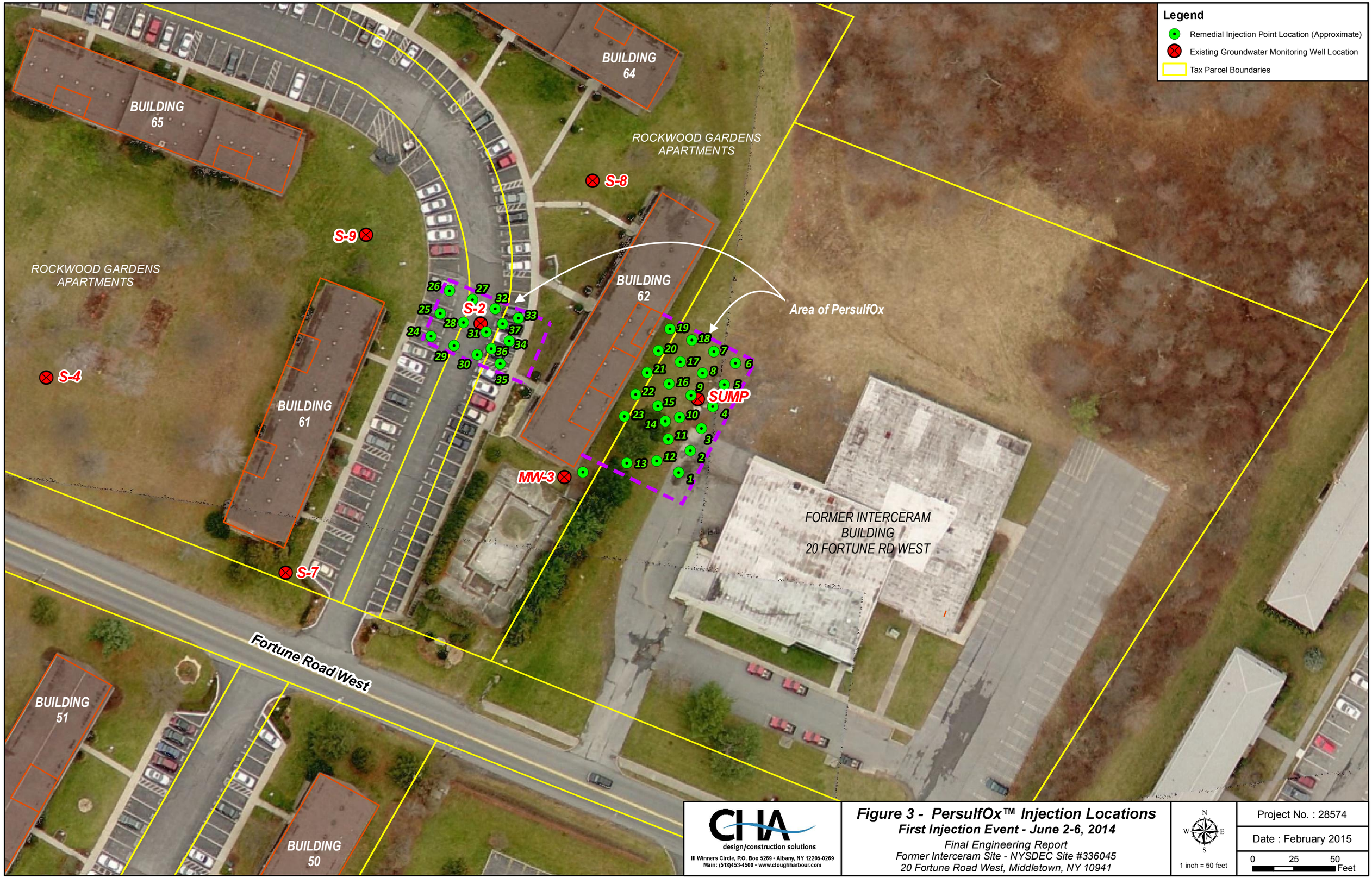

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Figure 3 - PersulfOx™ Injection Locations
First Injection Event - June 2-6, 2014
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Middletown, NY 10941

1 inch = 50 feet

Project No. : 28574

Date : February 2015

0 25 50 Feet

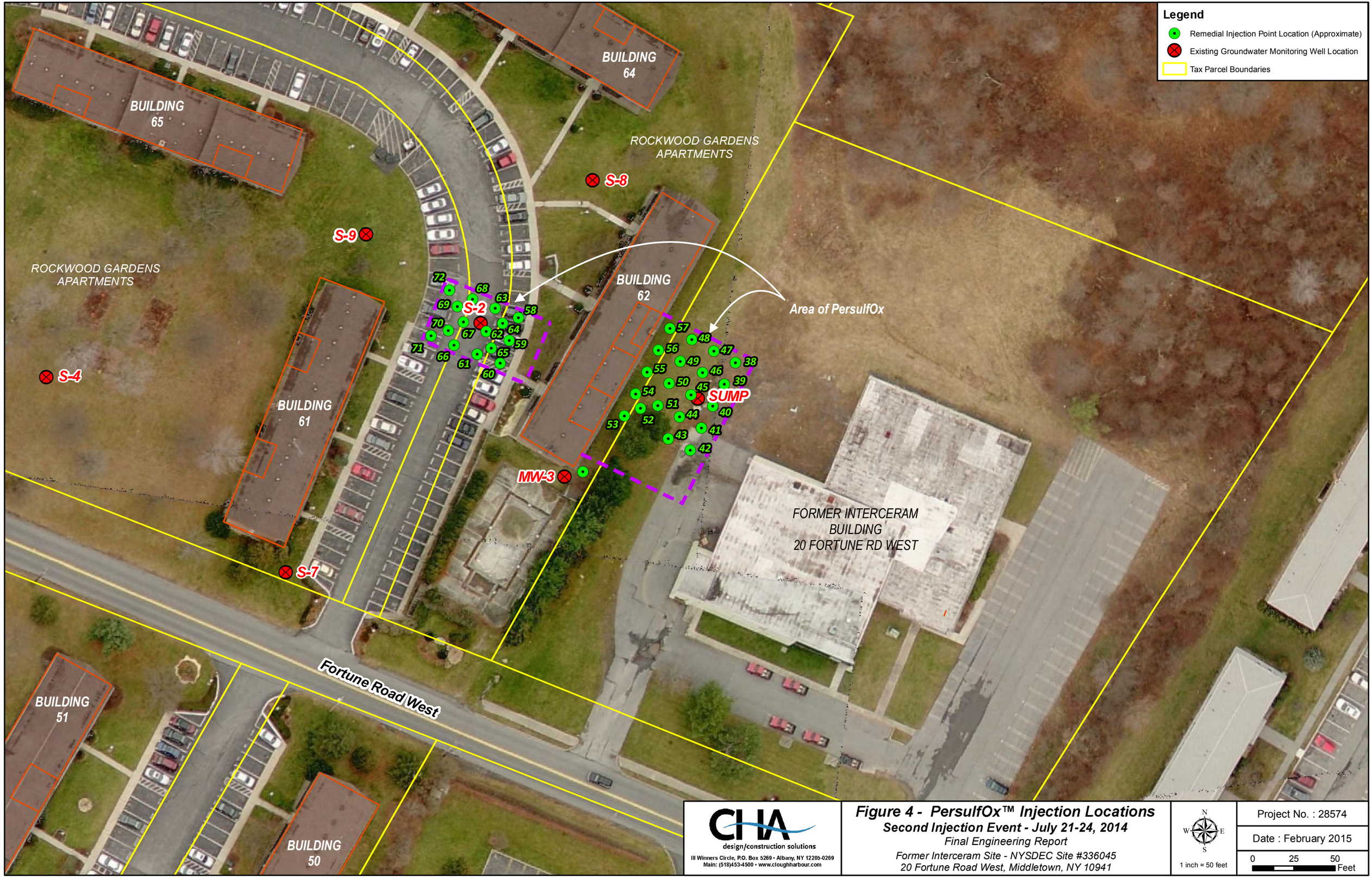

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Figure 4 - PersulfOx™ Injection Locations
Second Injection Event - July 21-24, 2014
Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Middletown, NY 10941

N W E S
1 inch = 50 feet

Project No. : 28574
Date : February 2015
0 25 50 Feet

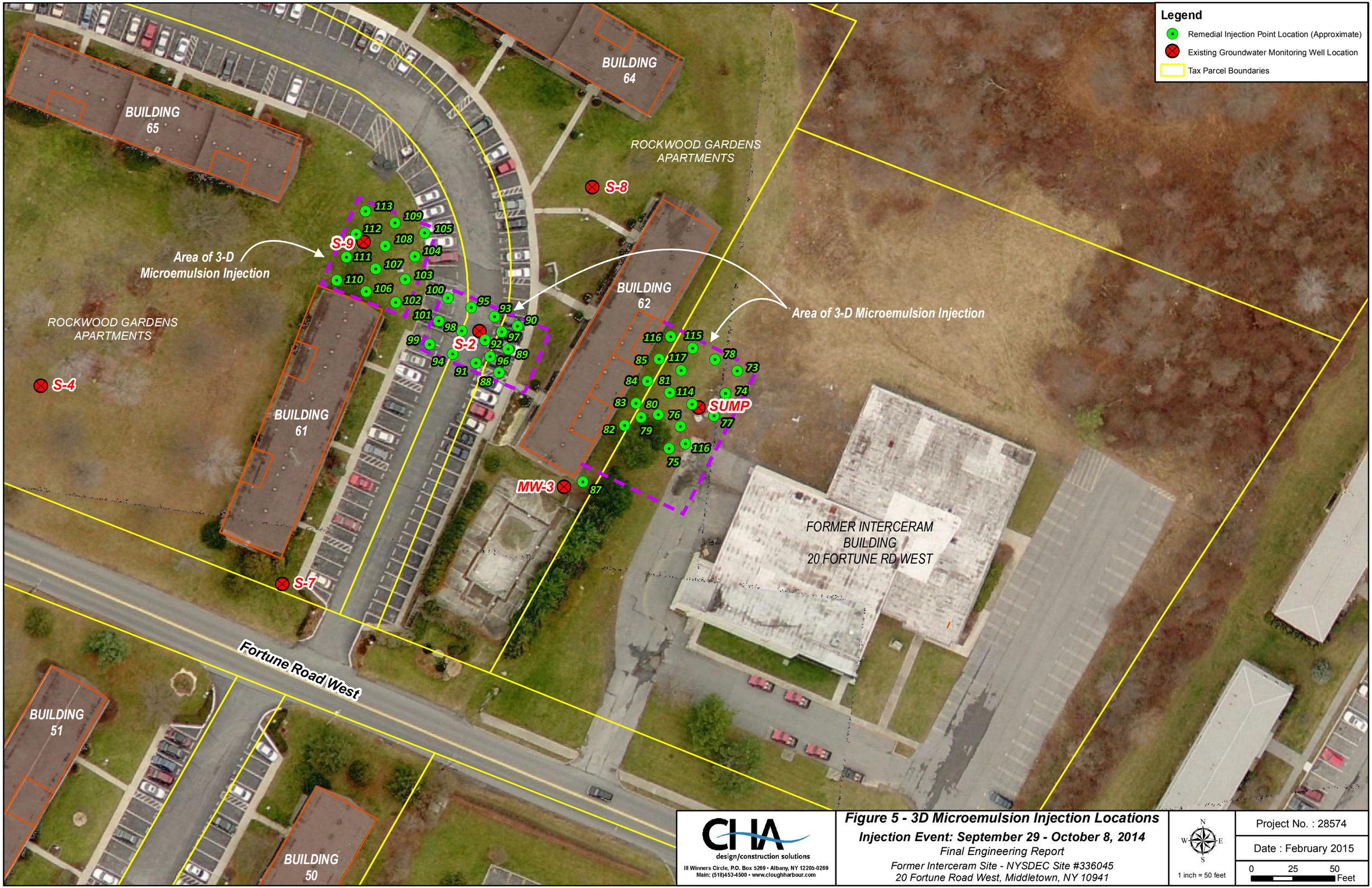

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Figure 5 - 3D Microemulsion Injection Locations

Injection Event: September 29 - October 8, 2014

Final Engineering Report

Former Interceram Site - NYSDEC Site #336045

20 Fortune Road West, Middletown, NY 10941

N W E S

1 inch = 50 feet

Project No. : 28574

Date : February 2015

0 25 50 Feet

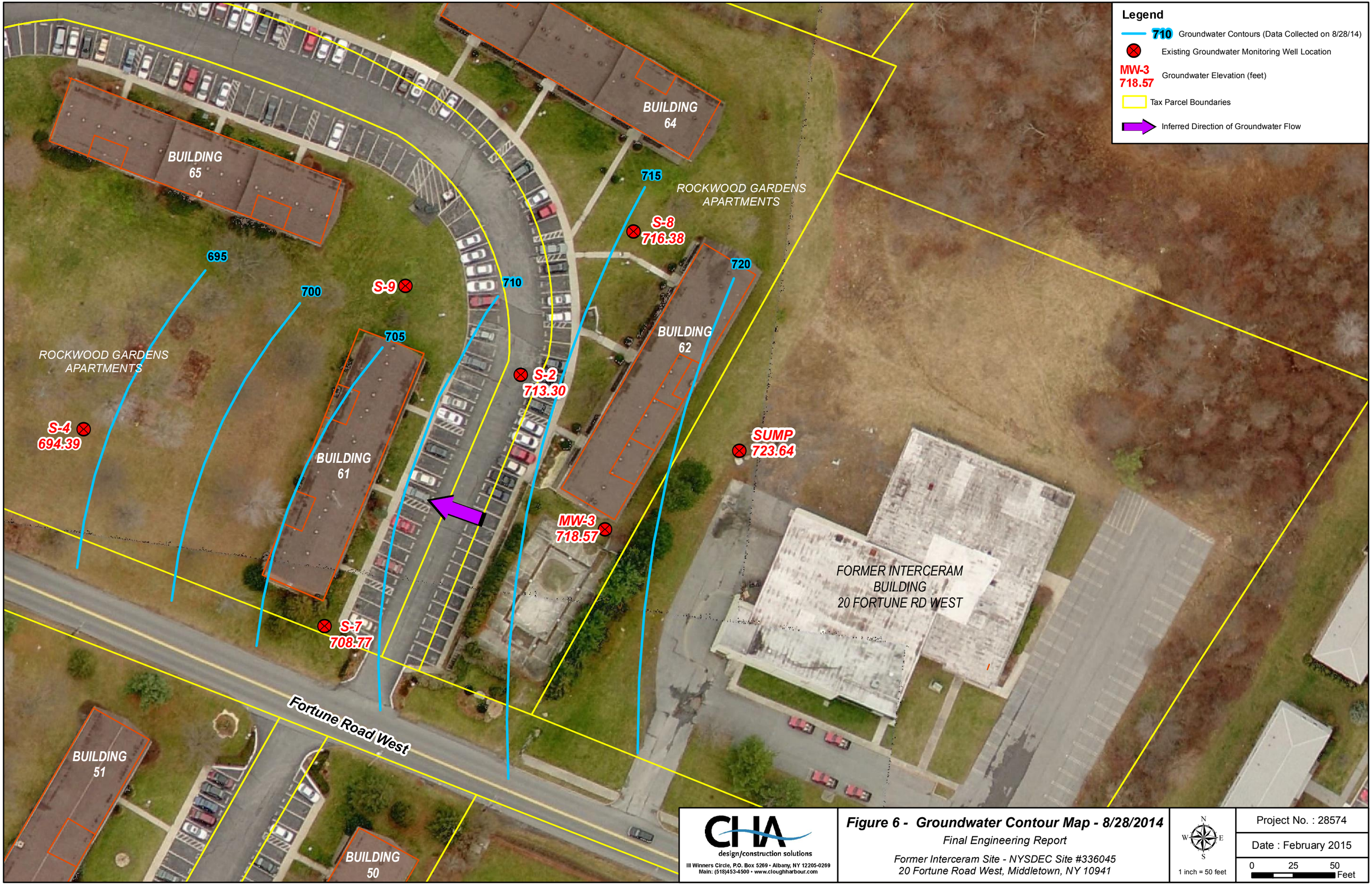

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Figure 6 - Groundwater Contour Map - 8/28/2014

Final Engineering Report

Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Middletown, NY 10941

N W E S

1 inch = 50 feet

Project No. : 28574

Date : February 2015

0 25 50 Feet

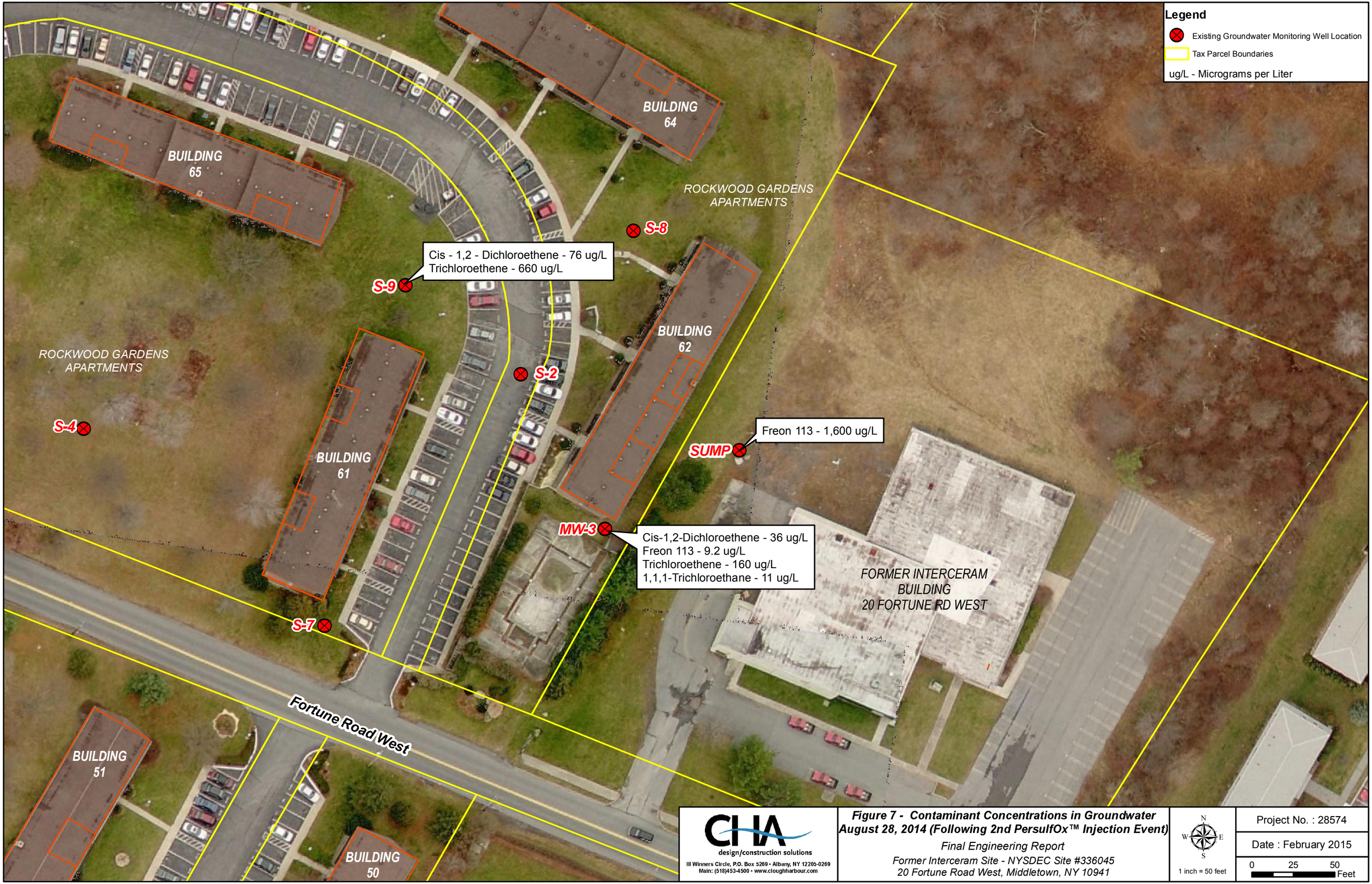

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Figure 7 - Contaminant Concentrations in Groundwater August 28, 2014 (Following 2nd PersulfOx™ Injection Event)

Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Middletown, NY 10941

N W E S

1 inch = 50 feet

Project No. : 28574

Date : February 2015

0 25 50 Feet

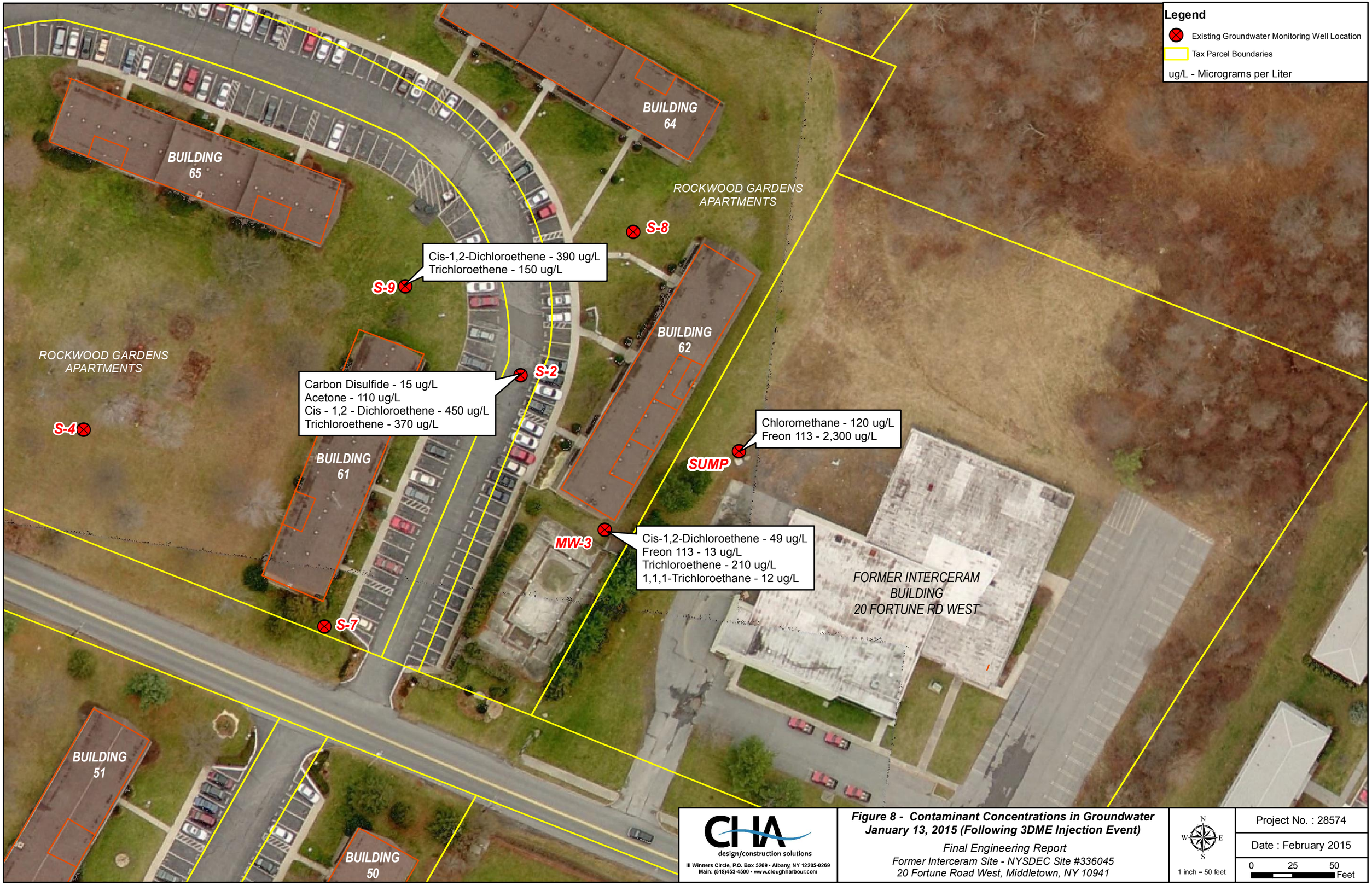

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Figure 8 - Contaminant Concentrations in Groundwater January 13, 2015 (Following 3DME Injection Event)

Final Engineering Report
Former Interceram Site - NYSDEC Site #336045
20 Fortune Road West, Middletown, NY 10941

N W E S
1 inch = 50 feet

Project No. : 28574

Date : February 2015

0 25 50 Feet

APPENDIX A

IRM Work Plan, 4/23/13

INTERIM REMEDIAL MEASURE WORK PLAN

for

Former Interceram Site
20 Fortune Road West
Middletown, New York

CHA Project Number: 22154

Prepared for:
CeramTec North America
One Technology Place
Laurens, SC 29360-1669

Prepared by:

III Winners Circle
Albany, New York 12205
Phone: (518) 453-4500
Fax: (518) 453-4773

March 4, 2013
Revised: April 23, 2013

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CERTIFICATION

I, the undersigned, certify that I am currently a NYS registered professional engineer, as defined in 6 NYCRR Part 375, and that this Interim Remedial Measure Work Plan was prepared in accordance with all applicable statutes and regulations, and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

For CHA:

(Professional Seal)

John P. Sobiech, P.E.
Printed Name of Certifying Engineer

Signature of Certifying Engineer

4/23/13
Date of Certification

068973
Registration Number

New York
Registration State

CHA
Company

Partner
Title

1.0 INTRODUCTION

CHA has prepared this Interim Remedial Measure (IRM) Work Plan on behalf of CeramTec North America (CeramTec) to outline the procedures and protocols that will be utilized to implement remedial activities in connection with groundwater contamination associated with historical operations of the former Interceram manufacturing facility located at 20 Fortune Road West, in Middletown, Orange County, New York (see Figure 1). The IRM Work Plan is based on discussions between CHA, CeramTec and the New York State Department of Environmental Conservation (NYSDEC) during a meeting on November 14, 2012, which focused on strategies for remediating documented groundwater contamination present beneath and in the vicinity of Building #62 of the Rockwood Gardens apartment complex, which is located adjacent to and downgradient of the former Interceram facility.

2.0 PROJECT BACKGROUND

Subsurface investigations conducted at the former Interceram property during 1992 and 1993 identified the presence of industrial solvent related volatile organic compounds (VOCs), including trichloroethane (TCE), tetrachloroethene (PCE) and 1,2-dichloroethene (1,2-DCE), in soil and groundwater on the western portion of the property, extending in a westerly direction from the former exterior chemical storage area to the property line.

A subsurface assessment conducted in September 1993 on the Rockwood Gardens Apartments property in the area immediately east of Building #62 (referred to as Building #16 at the time of the assessment) identified the presence of TCE in subsurface soils and also in groundwater at concentrations above the New York State Ambient Water Quality Standard.

In late 1995, a remedial investigation was completed by others at the former Interceram facility. The investigation included sampling and analysis of surface soil, subsurface soil, soil vapor, indoor air, and groundwater. Results of the investigation indicated the presence of multiple VOCs in groundwater at concentrations exceeding the New York State Ambient Water Quality Standards. In addition, low concentrations of VOCs were also identified in indoor air samples collected from Building #62 on the Rockwood Gardens property. Based on the results of the remedial investigation, a Feasibility Study was completed in 1996 to identify and evaluate the potential remedial alternatives to address the chemical constituents present in the soil and groundwater at the subject site. According to the Record of Decision issued by the NYSDEC in February 1997, the selected remedial action included on-site soil treatment using low temperature thermal desorption (LTTD), long term groundwater monitoring, an indoor air sampling program, and a deed restriction. Site soils were treated using the LTTD system between January and June 1997.

According to the Site Remediation Report dated October 1997, approximately 11,000 cubic yards of soil and rock were excavated from the western portion of the former Interceram property, between the west side of the former Interceram building and the eastern end of the Rockwood Gardens property. Several hundred yards of rock was crushed and decontaminated and returned to the excavation. The remaining soil materials were treated by the LTTD system. In addition, approximately 125 tons of soils were transported off site for disposal. Subsequent to collection and analysis of post-excavation soil samples, the excavations were backfilled with the treated soils.

Since 2001, groundwater samples have been collected annually from monitoring wells located in the vicinity of Building #62 on the Rockwood Gardens Apartments property. Historical groundwater

analytical data since 2001 have shown fluctuating concentrations of TCE ranging from 4,200 to 17,000 µg/L at the location of monitoring well S-2 (located west and downgradient of Building #62), and concentrations ranging from 290 to 1,400 µg/L at the monitoring location identified as SUMP (located east and upgradient of Building #62). Historical data have shown fluctuating concentrations of cis-1,2-DCE ranging from 510 to 1,100 µg/L at S-2, and concentrations ranging from 290 to 1,400 µg/L at the SUMP. The results from the most recent groundwater sampling event (January 13, 2012) showed the presence of TCE and cis-1,2-DCE at concentrations of 8,000 µg/L and 870 µg/L, respectively, at the location of S-2. Concentrations of each of these compounds were 1,000 µg/L at the location of the SUMP. These results indicate that there has been no significant reduction in the concentration of these compounds in groundwater since 2001. Concentrations of both TCE and cis-1,2-DCE remain above the established New York State Ambient Water Quality Standards.

In 2008 and 2009, CHA conducted vapor intrusion (VI) investigations at the former Interceram facility and at the Rockwood Gardens apartment complex in Buildings #61, #62, #64, #65 and #66. In 2010, based on the results of the VI investigations, sub-slab depressurization systems (SSDS) were installed in Buildings #61, #62 and #65 to address indoor air concerns within these buildings. No further action was required for Buildings #64 and #66. The SSDS in Buildings #61, #62 and #65 have been monitored periodically since installation and continue to operate.

In an effort to evaluate downgradient contaminant extent within the shallow aquifer in advance of groundwater remedial activities, an additional 2-inch diameter PVC monitoring well (S-9) was installed in December 2012 in the area to the north of Building #61, approximately 100 feet west-northwest of monitoring well S-2. The analytical results of the groundwater sample collected from this new well showed the presence of TCE at a concentration of 260 µg/L (above the New York State Ambient Water Quality Standard), indicating that groundwater in the area between S-2 and S-9 is impacted and should be addressed as part of the planned remedial activities.

Based on historical analytical data, discussions during the November 2012 meeting with the NYSDEC, and recent analytical results from monitoring well S-9, remedial efforts will be focused on the areas immediately to the east and west of Building #62 (vicinity of the SUMP and monitoring well S-2) and the area to the north of Building #61, between monitoring wells S-2 and S-9. The primary remedial technology which has been selected for the site is in-situ chemical oxidation via subsurface injection, supplemented with bioremediation. The immediate objective of the planned remedial efforts is to reduce levels of target contaminants in groundwater to an order of magnitude lower than the most recent analytical results, or less, in the vicinity of Building #62 within 1 to 3 years of implementation. Based on discussions with remedial technology and product developer,

Regenesis, and documented success of the proposed remedial technologies at project sites with similar conditions, the stated objective is expected to be attainable. Ultimately, the overall objective is to achieve contaminant reduction sufficient to allow for deactivation of the above-referenced SSDSs, and a decrease in the frequency of groundwater monitoring.

3.0 REMEDIAL TECHNOLOGIES & IMPLEMENTATION METHODS

3.1 REMEDIAL TECHNOLOGIES

CHA, together with Regenesis, evaluated site-specific factors to identify applicable technologies to address the groundwater contamination present in the vicinity of Building 62 on the Rockwood Gardens property. Based on evaluation of factors including contaminants of concern, contaminant concentrations and distribution, depth to water, soil type, groundwater gradient, site structures and other site characteristics, the primary remedial technology selected for implementation is in-situ chemical oxidation (ISCO) using a product called PersulfOx™, supplied by Regenesis. PersulfOx™ is a sodium persulfate-based technology which employs a patented catalyst to enhance the oxidative destruction of both hydrocarbons and chlorinated contaminants in the subsurface. The PersulfOx™ product is a dry powder which is easily mixed with water and applied into the contaminated matrix using subsurface injection techniques or soil mixing tools.

The ISCO technology will be supplemented with enhanced anaerobic biodegradation, which is the practice of adding hydrogen (an electron donor) to groundwater and/or soil to increase the number and vitality of indigenous microorganisms performing anaerobic bioremediation (reductive dechlorination) on any anaerobically degradable compound or chlorinated contaminant. The product selected to facilitate enhanced anaerobic biodegradation is called 3-D Microemulsion, supplied by Regenesis, which is a product designed specifically for in-situ treatment of chlorinated solvent based contaminants. Upon application to the subsurface, 3-D Microemulsion immediately begins to produce hydrogen and to distribute hydrogen generating compounds to the subsurface through a series of hydration and fermentation reactions. This process provides for an immediate as well as time-release supply of hydrogen to fuel the demands of the anaerobic reductive dechlorination process. The 3-D Microemulsion product is a liquid which can be readily injected into the subsurface or further diluted and mixed with water to form a higher volume microemulsion.

3.2 IMPLEMENTATION METHODS

The remedial technologies described above will be implemented via subsurface injection using direct-push (Geoprobe) methods. In the areas of the SUMP and S-2 (east and west of Building #62, respectively), both technologies will be implemented. In the area of S-9, only Enhanced Anaerobic Biodegradation technology will be implemented based on the lower concentrations of target contaminants in this area. In the areas of the SUMP and S-2, two PersulfOx™ injection events are proposed, the second occurring approximately six weeks following the first. A third injection event, for application of the 3-D MicroEmulsion in all three areas, is proposed to occur approximately two

months following the second PersulfOx™ injection event. The following table summarizes the planned injection events.

Table 3-1: Summary of Planned Remedial Injection Events

Activity	Location(s)	Timeframe	Product Injected	Objectives
1-day Pilot Study	Area of SUMP (2 points) Area of S-2 (2 points)	Subsequent to utility identification and layout of injection point locations	PersulfOx™	Evaluate the rate at which the subsurface formation will accept the injected solution. Aid in the planning of the full-scale remedial implementation.
1st Injection Event	Area of SUMP (23 points) Area of S-2 (15 points)	Subsequent to evaluation of pilot study information	PersulfOx™	Facilitate short-term oxidative destruction of target contaminants.
2nd Injection Event	Area of SUMP (23 points, offset) Area of S-2 (15 points, offset)	Approximately six weeks following first injection event	PersulfOx™	Apply an additional dose of oxidant (at offset locations from the 1st injection event) to facilitate short-term oxidative destruction of target contaminants.
3rd Injection Event	Area of SUMP (21 points) Area of S-2 (12 points) Area of S-9 (12 points)	Approximately two months following second injection event	3-D Microemulsion	Facilitate both short-term and long-term enhanced anaerobic biodegradation of target contaminants.

3.2.1 Pre-Injection Activities

Prior to mobilizing the Geoprobe and associated injection equipment to the site, underground utilities in the vicinity of Rockwood Gardens Building #62 and in the area north of Building #61 will be identified and located. Subsequent to utility identification, CHA will mark out the proposed remedial injection point locations in the areas of the SUMP (23 points), S-2 (15 points) and S-9 (12 points). The proposed injection points will be laid out in a grid pattern (to the extent possible) in each area, with approximately 15-foot spacing between each point. The prescribed injection point spacing was determined by Regenesis, based on soil conditions and contaminant loading. In the area of the SUMP, four rows of injection points are proposed, one generally in line with the SUMP, one upgradient and two downgradient (between the SUMP and the east side of Building #62). In the area of S-2, five rows of injection points are proposed, three upgradient and two downgradient. In the area of S-9 (where only 3-D MicroEmulsion will be applied) three rows of injection points are proposed, two upgradient and one downgradient. Figure 2 (attached) depicts the approximate

proposed injection point layout for each area. Actual locations may be adjusted in the field, based on the presence of subsurface utilities or interfering surface features.

A one-day pilot study is proposed in advance of the first full-scale injection event, and will consist of injection of PersulfOx™ at up to four select locations in the areas of the highest contaminant impacts. The pilot study will be completed to evaluate the rate at which the subsurface formation will accept the solution. This information will aid in the planning of the full-scale remedial implementation, including proper sizing of injection pumps and other equipment, as well as determining anticipated duration of field work, which will enable more accurate budgeting.

For the second PersulfOx™ injection event in the areas of the SUMP and S-2, spacing between injection point locations will remain at approximately 15 feet, but the points will be offset approximately 7.5 feet from the initial points to maximize lateral product distribution and remedial coverage.

In addition to the tasks noted above, prior to commencing full-scale remedial product injection activities, the following parameters will be measured and recorded for groundwater at the locations of the SUMP and monitoring wells S-2 and S-9: depth to water; temperature; pH; specific conductivity; oxidation/reduction potential (ORP); and dissolved oxygen.

3.2.2 Injection Procedures

A CHA geologist or environmental scientist will be present during field work to observe and document remedial activities. At injection locations other than those in line with and upgradient of the SUMP, the drilling subcontractor will utilize a track-mounted Geoprobe unit to drive hollow, stainless steel rods to a depth of approximately 9 feet below grade (based on review of soil boring logs from previous work indicating the presence of dense till below this depth). At the locations of proposed injection points in line with and upgradient of the SUMP, the injection rods will be advanced to approximately 20 feet below grade, based on the presence of previously disturbed soil in these areas, and to achieve a greater vertical distribution of remedial products, as these locations are within the historical contaminant source area. Upon reaching the desired depth, an expendable steel point will be released from the bottom of the rods and a hose will be connected to the top of the rods. The PersulfOx™ (or 3-D MicroEmulsion) product will be mixed on site with potable water, according to mixing ratios provided by Regenesis. The product/water solution will then be pumped, under pressure, into the subsurface. The rods will gradually be raised in approximate 1-foot intervals during pumping, and a prescribed volume of solution (as determined by Regenesis) will be injected

at each location from the bottom depth to approximately 3 feet below grade. At each injection location within the areas of well S-2 and the SUMP, other than those in line with and upgradient of the SUMP, 69 gallons of PersulfOx™/water solution (including 95 lbs. of PersulfOx™ product) are proposed to be injected during both the first and second injection events. At each of the 12 proposed injection locations in line with and upgradient of the SUMP, 176 gallons of PersulfOx™/water solution (including 241 pounds of PersulfOx™ product) are proposed to be injected during both the first and second injection events.

During the third injection event, at each injection location within the areas of wells S-2 and S-9, and the SUMP, other than those in line with and upgradient of the SUMP, 160 gallons of 3-D MicroEmulsion®/water solution (including 16 gallons of 3-D MicroEmulsion® product) are proposed to be injected. At each of the 12 proposed injection locations in line with and upgradient of the SUMP, 400 gallons of MicroEmulsion®/water solution (including 40 gallons of 3-D MicroEmulsion® product) are proposed to be injected.

Site-specific design summary sheets, prepared by Regenesis for application of PersulfOx™ and 3-D MicroEmulsion® in the areas of wells S-2, S-9 and the SUMP, are included in Appendix B.

Upon completion of product injection, each borehole will be sealed with bentonite. At locations within paved areas, the surface will be restored using blacktop patch or concrete. At locations within grass-covered areas, the surface will be restored with topsoil.

3.3 GROUNDWATER MONITORING

At the time of the second PersulfOx™ injection event, prior to product injection, groundwater monitoring will be performed, consisting of measuring and recording of the field parameters listed in Section 3.2.1 in groundwater at the locations of the SUMP and monitoring wells S-2 and S-9.

Approximately one month following the second PersulfOx™ injection event, groundwater monitoring will again be performed, and will include measurement of the field parameters listed above at the locations of the SUMP, S-2 and S-9, and will also include collection of groundwater samples from these three locations, as well as from monitoring wells MW-3, S-4, S-7 and S-8 for laboratory analysis by EPA Method 8260 for VOCs. Groundwater samples will be collected utilizing methods consistent with the most recent annual groundwater sampling events performed at the site.

Approximately six months following the second PersulfOx™ injection event, another groundwater monitoring event will be performed, and will include both field parameter measurement and groundwater sample collection for laboratory analysis at the locations of the SUMP, S-2 and S-9 only. Analytical results will be evaluated and further monitoring will be contemplated at that time. The following table summarizes the proposed groundwater monitoring and sampling activities.

Table 3-2: Summary of Planned Groundwater Monitoring Activities

Activity	Location(s)	Timeframe	Parameters
Pre-Injection Groundwater Monitoring	SUMP, S-2, S-9	Prior to the 1st full-scale PersulfOx™ injection event	Depth to water, temperature, pH, specific conductivity, oxidation/reduction potential, dissolved oxygen
Groundwater Monitoring	SUMP, S-2, S-9	Immediately prior to the 2nd PersulfOx™ injection event	Depth to water, temperature, pH, specific conductivity, oxidation/reduction potential, dissolved oxygen
Groundwater Monitoring and Sampling	SUMP, S-2, S-9, MW-3, S-4, S-7, S-8	Approximately one month following the 2nd PersulfOx™ injection event	Depth to water, temperature, pH, specific conductivity, oxidation/reduction potential, dissolved oxygen Laboratory analysis of groundwater samples by EPA Method 8260 for VOCs..
Groundwater Monitoring and Sampling	SUMP, S-2, S-9	Approximately six months following the 2nd PersulfOx™ injection event	Depth to water, temperature, pH, specific conductivity, oxidation/reduction potential, dissolved oxygen Laboratory analysis of groundwater samples by EPA Method 8260 for VOCs.

4.0 REPORTING

CHA will prepare a Remedial Implementation Report which will summarize the field work conducted, discuss deviations from the IRM Work Plan (if any), present the analytical results from the initial post-injection groundwater sampling event and evaluate remedial progress. The report will include an updated Site Plan depicting any significant changes to remedial injection point locations based on conditions encountered in the field, and will also include recommendations for future monitoring and remedial activities (if deemed necessary).

5.0 SCHEDULE

CHA anticipates that the initial full-scale PersulfOx™ injection event would occur during early June 2013. Based on the timeframes noted above, the second PersulfOx™ injection event would occur in late July, and the 3-D Microemulsion injection event would occur in late September 2013. The first post-injection groundwater sampling of the SUMP and monitoring wells S-2 and S-9 would occur in late August 2013, with an additional round of sampling in late January 2014. The Remedial Implementation Report referenced in Section 4.0 would be prepared and submitted during the fall of 2013.

FIGURES

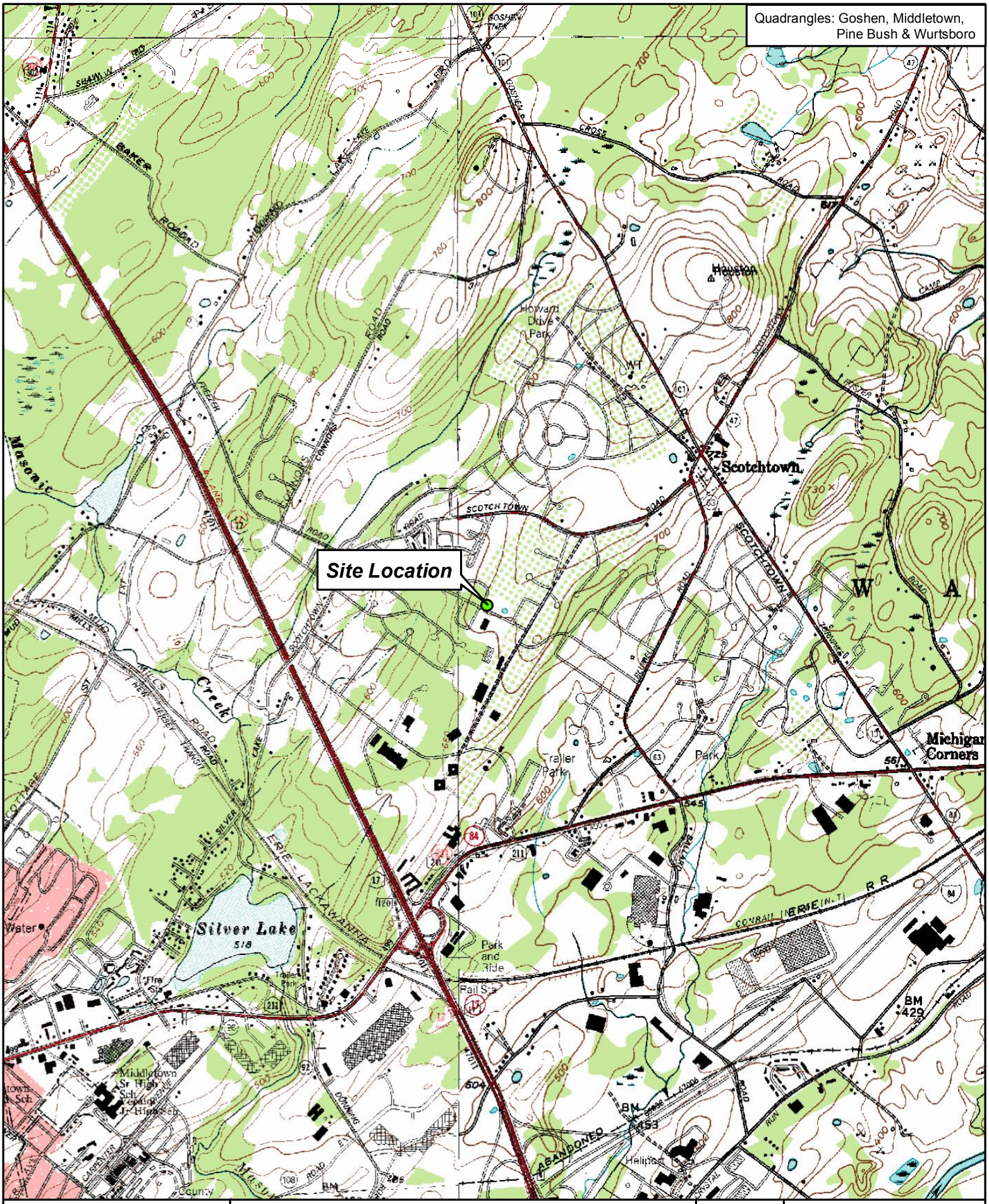

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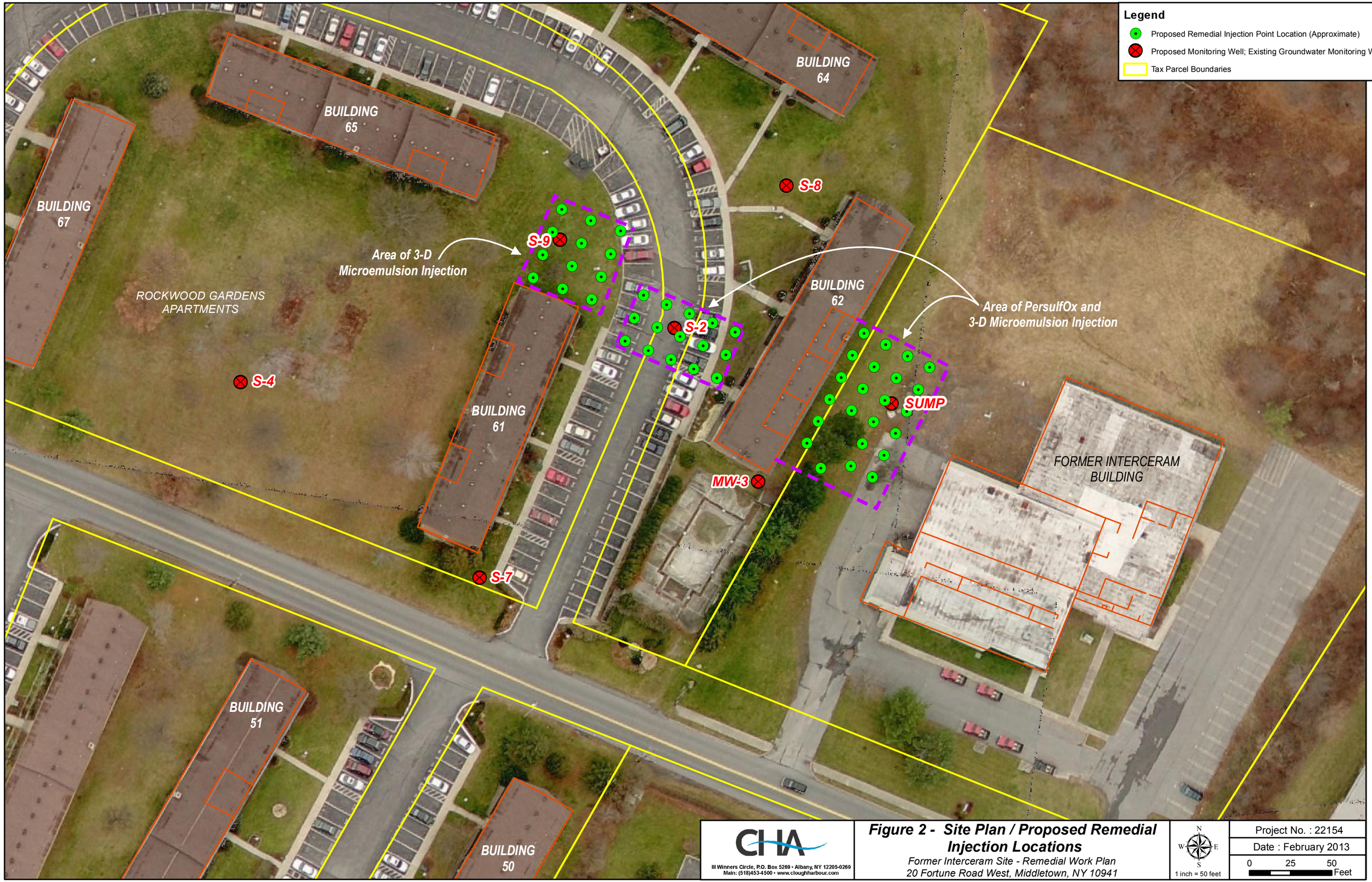
Figure 1 - Site Location

Former Interceram Site

20 Fortune Road West, Middletown, NY 10941

Project No. : 22154

Date : September 2011



CHA
III Winners Circle, P.O. Box 5269 - Albany, NY 12205-0269
Main: (518)453-4500 - www.cloughharbour.com

Figure 2 - Site Plan / Proposed Remedial Injection Locations

Former Interceram Site - Remedial Work Plan
20 Fortune Road West, Middletown, NY 10941

N W E S
1 inch = 50 feet

Project No. : 22154
Date : February 2013
0 25 50 Feet

APPENDIX A
TECHNICAL PRODUCT INFORMATION
(PersulfOx™ and 3-D MicroEmulsion®)

PersulfOx™
CATALYZED PERSULFATE

A Sodium Persulfate - Based *In Situ* Chemical Oxidant with Built-In Activation

DESCRIPTION

PersulfOx™ is an *in situ* chemical oxidation reagent that destroys organic contaminants found in groundwater and soil through powerful yet controlled chemical reactions. PersulfOx is a sodium persulfate ($Na_2S_2O_8$) - based technology which employs a uniquely patented catalyst to enhance oxidative destruction of both hydrocarbon and chlorinated contaminants in the subsurface.

Traditionally, sodium persulfate is activated with the addition of heat, chelated metals, hydrogen peroxide, or base in order to generate sulfate radicals. These activation processes are inherently complex, costly and can pose additional health and safety risks. In comparison, PersulfOx is a relatively safe and easy-to-use ISCO agent.

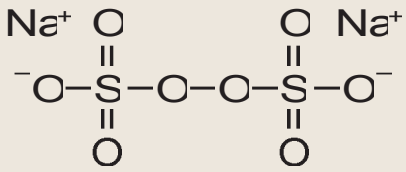


FIGURE 1:
SODIUM PERSULFATE CHEMICAL STRUCTURE

In short, PersulfOx contains a built-in catalyst which activates the persulfate component and generates contaminant destroying free radicals without the need for the addition of a separate activator.

FEATURES & BENEFITS

- Promotes rapid and sustained *in situ* oxidation of a wide-range of organic contaminants
- Provides a unique catalytic surface on which oxidants and contaminants react in a process known as "surface mediated oxidation."
- Contains built-in activation: eliminates complex and potentially hazardous chemical addition required to achieve traditional persulfate activation
- Fewer health and safety concerns than with use of traditional activation methods such as heat, chelated metals, hydrogen peroxide or base
- Single component product results in simplified logistics and application. No additional containers and/or multi-step mixing ratios required prior to application
- Contaminant oxidation performance equivalent to best alternative persulfate activation methods

FUNCTION

PersulfOx is an all-in-one product that provides powerful and highly efficient chemical oxidation performance. It is easily mixed with water and applied into the contaminated matrix using subsurface injection techniques or soil mixing tools.

The PersulfOx catalyst is a silica based, microscopic surface on which oxidants and contaminants can come together and react in a distinct process known as "surface mediated oxidation." During this process, oxidation reactions occur repeatedly on the surface of the catalyst serving several contaminant-reducing functions:

- The generation of sulfate radical and other oxidizing species
- Accelerated oxidation through the adsorption of contaminant molecules and other oxidizing species
- Catalyzes direct and free-radical-mediated oxidation by sodium persulfate

The equation below shows the net complete oxidation of toluene, a constituent of gasoline, by PersulfOx:

For a Free Consultation and Application Design for the use of PersulfOx visit www.regenesis.com

REGENESIS
Advanced Technologies for Contaminated Site Remediation

REGENESIS / 1011 Calle Sombra / San Clemente / CA 92673-6244 / USA / T: 949.366.8000 / F: 949.366.8090 / www.regenesis.com

PersulfOx

Material Safety Data Sheet (MSDS)

Last Revised: October 26, 2012

Section 1 – Supplier Information and Material Identification

Supplier:

REGENESIS
1011 Calle Sombra
San Clemente, CA 92673
Telephone: 949.366.8000
Fax: 949.366.8090
E-mail: info@regenesis.com

Chemical Synonyms:	A mixture of Sodium Persulfate [$Na_2S_2O_8$], Sodium Metasilicate [Na_2SiO_3] and Amorphous Silicon Dioxide[SiO_2].
Chemical Family:	Inorganic Chemicals
Trade Name:	PersulfOx™
Product Use:	Used to remediate contaminated soil and groundwater (environmental remediation applications)

Section 2 – Chemical Information/Other Designations

CAS No.	Chemical	Percentage
7775-27-1	Sodium Persulfate	75-95%
6834-92-0	Sodium Metasilicate, Anhydrous	0.1-10%
7631-86-9	Silicon Dioxide, Amorphous	5-25%

Section 3 – Physical Data	
Form:	Solid, free-flowing powder
Color:	White
Odor:	Odorless
Melting Point:	NA
Boiling Point:	NA
Flammability/Flash Point:	Non-combustible
Vapor Pressure:	NA
Bulk Density:	NA
Viscosity:	NA
pH (10% solution):	≈ 8.5 – 9.5 @ 25 °C
Decomposition Temperature:	Decomposition will occur upon heating.

Section 4 – Reactivity Data	
Stability:	Stable under normal conditions. Stability decreases in the presence of heat, moisture and/or contamination.
Conditions to Avoid/Incompatibility:	Acids, alkalis, halides (fluorides, chlorides, bromides and iodides), Combustible materials, most metals and heavy metals, oxidizable materials, other oxidizers, reducing agents, cleaners, and organic or carbon containing compounds, moisture, heat, flame. Contact with incompatible materials can result in a material decomposition or other uncontrolled reactions.
Hazardous Decomposition Products:	Oxygen that supports combustion and oxides of sulfur.
Polymerization	Will not occur

Section 5 – Regulations

UNITED STATES

SARA TITLE III (SUPERFUND ADMENDMENTS AND REAUTHORIZATION ACT)

Section 302 Extremely Hazardous Substances (40 CFR 335, Appendix A):	N/A
Section 311 Hazard Categories (40 CFR 370):	Fire Hazard, Immediate (Acute) Health Hazard
Section 312 Threshold Planning Quantity (40 CFR 370):	The Threshold Planning Quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs; however, this product contains the following ingredients with a TPQ of less than 10,000 lbs.: None
Section 313 Reportable Ingredients (40 CFR 372):	Not Listed

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA Designation & Reportable Quantities (RQ) (40 CFR 302.4):	Unlisted, RQ = 100 lbs., Ignitability

Section 6 – Protective Measures, Storage and Handling

Technical Protective Measures

Storage:

Oxidizer. Store in a cool, clean, and well ventilated area away from all sources of ignition and out of the direct sunlight. Store in a dry location away from heat and in temperatures less than 40 °C.

Keep away from incompatible materials and keep lids tightly closed. Do not store in improperly labeled containers.

Protect from moisture. Do not store near combustible materials. Keep containers well sealed.

Store separately from reducing materials. Avoid contamination which may lead to decomposition.

Handling:

Avoid contact with eyes, skin and clothing. Use with adequate ventilation. Wear respiratory protection if ventilation is inadequate or not available. Use eye and skin protection. Use clean plastic or stainless steel scoops only.

Do not swallow. Avoid breathing vapors, mists or dust. Do not eat, drink or smoke in the work area. Wash hands thoroughly after handling.

Label containers and keep them tightly closed when not in use.

Personal Protective Equipment (PPE)

Engineering Controls:

General room ventilation is required if used indoors. Local exhaust ventilation, process enclosures or other engineering controls may be needed to maintain airborne levels below recommended exposure limits. Avoid creating dust or mists. Maintain adequate ventilation at all times. Do not use in confined areas. Keep levels below recommended exposure limits. To determine actual exposure limits, monitoring should be performed on a routine basis. General use of persulfates will generate thermal and pressure regimes which need to mitigated during application as a precautionary measure.

Respiratory Protection:

Use NIOSH(P100) approved respirator when airborne dust is expected.

Exposure Limit

0.1 mg/m^3 (TWA) - ACGIH

Hand Protection:

Wear chemical resistant gloves (neoprene, rubber, or PVC). Thoroughly wash the outside of gloves with soap and water prior to removal.

Section 6 – Protective Measures, Storage and Handling (cont)

Eye Protection:	Wear chemical safety goggles. A full face shield may be worn in lieu of safety goggles.
Skin Protection:	Try to avoid skin contact with this product. Chemical resistant gloves (neoprene, PVC or rubber) and protective clothing should be worn during use.
Protection Against Fire & Explosion:	Product is non-explosive. In case of fire, evacuate all non-essential personnel, wear protective clothing and a self-contained breathing apparatus, stay upwind of fire, and use water to spray cool fire-exposed containers. Presence of water accelerates decomposition.

Section 7 – Hazards Identification

Potential Health Effects

Inhalation:	May be harmful and irritating.
Eye Contact:	Non-irritating (rabbit)
Skin Contact:	Non-irritating (rabbit)
Ingestion:	May be harmful if swallowed (vomiting and diarrhea).
Target Organs:	Eyes, skin, respiratory passages

Section 8 – Measures in Case of Accidents and Fire

After Spillage/Leakage:	Spilled material should be collected and put in approved DOT container and isolated for disposal. Isolated material should be monitored for signs of decomposition (fuming/smoking). If spilled material is wet, dissolve with large quantity of water and dispose as a hazardous waste. All disposals should be carried out according to regulatory agencies procedures.
Extinguishing Media:	Water; Do not use carbon dioxide or other gas filled fire extinguishers; they will have no effect on decomposing persulfates. Wear full protective clothing and self contained breathing apparatus.

First Aid

Eye Contact:	Flush eyes with running water for at least 15 minutes with eyelids held open. Seek a specialist.
Inhalation:	Remove affected person to fresh air. Seek medical attention if the effects persist.
Ingestion:	Rinse mouth with water, give two-four cups of water to dilute the chemical and seek medical attention immediately. Never give anything by mouth to an unconscious person. **Do Not** induce vomiting.
Skin Contact:	Wash affected areas with soap and a mild detergent and large amounts of water. Seek medical attention if irritation occurs or persists.

Notes to Medical Doctor: This product has low oral toxicity and is not irritating to the eyes and skin. Flooding of exposed areas with water is suggested, but gastric lavage or emesis induction for ingestions must consider possible aggravation of esophageal injury and the expected absence of system effects. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

Section 9 – Accidental Release Measures

Precautions:

Cleanup Methods: Spilled material should be collected and put in approved DOT container and isolated for disposal. Isolated material should be monitored for signs of decomposition (fuming/smoking). If spilled material is wet, dissolve with large quantity of water and dispose as a hazardous waste. All disposals should be carried out according to local regulatory agencies procedures.

Section 10 – Information on Toxicology

Toxicity Data

Oral LD_{50} (rat):	895 mg/kg
Dermal LD_{50} (rabbit):	> 10 g/kg
Inhalation LD_{50} (rat):	5.1 mg/kg

Section 11 – Information on Ecology

Ecotoxicological Information

Bluegill sunfish, 96-hour LC_{50} = 771 mg/L

Rainbow trout, 96-hour LC_{50} = 163 mg/L

Daphnia, 48-hour LC_{50} = 133 mg/L

Grass shrimp, 96-hour LC_{50} = 519 mg/L

Biotic Degradation: N/A.

Section 12 – Disposal Considerations

Waste Disposal Method: Dispose of in an approved waste facility operated by an authorized contactor in compliance with local, state and federal regulations.

Section 13 – Shipping/Transport Information

D.O.T. Shipping Name:	Oxidizing Solid, n.o.s. (a mixture of Sodium persulfate, sodium metasilicate and silicon dioxide)
UN Number:	UN 1479
Hazard Class:	5.1 (Oxidizer)
Labels:	5.1 (Oxidizer)
Packaging Group:	III

Section 14 – Other Information

HMIS® Rating	Health – 1 (Slight)	Physical Hazard – 1 (Slight)
	Flammability – 0 (None)	Lab PPE – goggles, gloves, apron, dust respirator

HMIS® is a registered trademark of the National Painting and Coating Association.

NFPA	Health – 1 (Slight)	Reactivity – 1 (Slight)
	Flammability – 0 (None)	Special - Oxidizer

Section 15 – Further Information

The information contained in this document is the best available to the supplier at the time of writing, but is provided without warranty of any kind. Some possible hazards have been determined by analogy to similar classes of material. The items in this document are subject to change and clarification as more information become available. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose.

PersulfOx™
CATALYZED PERSULFATE

Packaging, Storage, Health and Safety

PersulfOx® is a chemical oxidation technology developed by REGENESIS for the remediation of organic contaminants in soil and groundwater which employs a patented "catalyzed persulfate" technology. PersulfOx is mixed with water and applied to the contaminated matrix via mixing equipment or subsurface injection techniques. When adding the fine dry PersulfOx powder to the mix water, proper handling and dust precautions should be followed as indicated in the Health and Safety section below (also review the MSDS).

Packaging and Storage:

PersulfOx is a dry, white, and free flowing powder delivered in 5 gallon HDPE pails or 55.1 lb (25 kg) bags. It ships as a DOT 5.1 Class Oxidizer and should be handled according to rules and regulations governing oxidizers. PersulfOx should be stored in a cool (<40^{o} C), clean, dry, and well-ventilated area and away from heat and moisture. It should not be stored with combustible or reducing materials.

Health and Safety:

PersulfOx is engineered for ease of handling in the field and can be safely mixed without the risks and potential hazards associated with most other chemical oxidants such as alkaline activated sodium persulfate. However, PersulfOx is an oxidizer/catalyst powder mixture, therefore Level C proper protective equipment (PPE) is recommended for all personnel working with or in areas of potential contact with PersulfOx. In addition, PersulfOx is an alkaline product when in solution; if left to stand for a long periods, persulfate based products can become acidic. Under either alkaline or acidic conditions PersulfOx can be caustic and corrosive and can degrade equipment surfaces.

Personal Protective Equipment (PPE)

- **Eye protection** – wear well sealed goggles or a face shield (face shield recommended for full face protection)
- **Head** – hard hat when required
- **Respiratory** – use NIOSH (P100) approved respirator when airborne dust is expected
- **Hands** – wear chemical resistant gloves (neoprene, rubber, PVC)
- **Feet** – wear steel toe shoes with chemical resistant soles or neoprene boots
- **Clothing** – wear long sleeve shirts and long pants. Consider using a Tyvek® body suit, Carhartt® coverall or splash gear
- **Engineering Controls**-ventilation is required if used indoors. Controls should be maintained to avoid creation of dusts and mists

3-D MicroEmulsion® FACTORY EMULSIFIED

STAGED RELEASE, pH NEUTRAL, FACTORY EMULSIFIED ELECTRON DONOR

DESCRIPTION

Factory emulsified 3-D Microemulsion is a unique electron donor material tha an engineered, 3 stage electron donor release profile, pH neutral chemist is delivered on-site as a factory emulsified material. This new molecu exhibits a novel hydrophile-lipophile balance (HLB) which provides ma subsurface distribution well beyond that of emulsified vegetabl

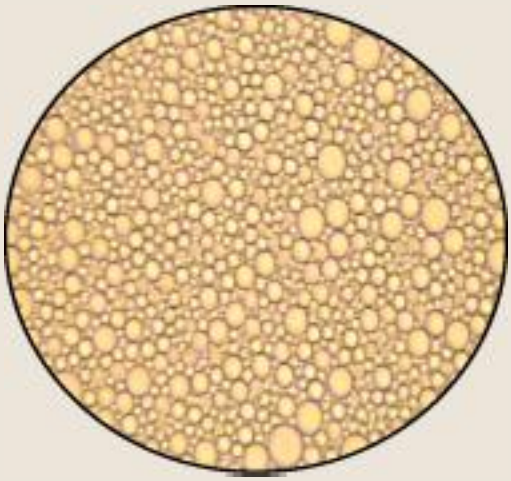


FIGURE 1: Microscopic view of factory emulsified 3-D Microemulsion.

FEATURES & BENEFITS

- **3 Stage Electron Donor Release Profile Avoids Mul Re-applications Saving Time and Mo**

This feature optimizes start to finish timing of the enhanced red dechlorination process through an immediate, mid-range and lon electron donor release. Without a 3 stage release profile, bioremediation are inefficient, causing gaps in electron donor supply and requiring m injections. Factory emulsified 3-D Microemulsion offers a 3 stage electror release for optimal results (Figure

Stage 1 - Immediately available free lactic acid (lactate) is fermented r

Stage 2 - Controlled-release lactic acid (lactate esters and polylactate esters) are metabolized at a more contr

Stage 3 - Free fatty acids and fatty acid esters are converted to hydrogen over a mid to long-range timeli factory emulsified 3-D Microemulsion an exceptionally long electron donor releas

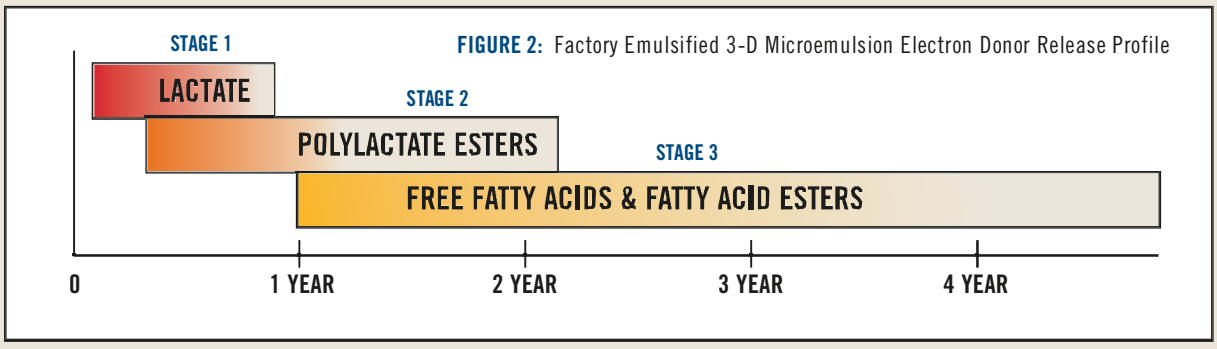


FIGURE 2: Factory Emulsified 3-D Microemulsion Electron Donor Release Profile

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Advanced Technologies for Contaminated Site Remediation

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3-D Microemulsion® Factory Emulsified
MATERIALS SAFETY DATA SHEET

Last Revised: November 15, 2011

Section 1 – Material Identification

Supplier:

1011 Calle Sombra
San Clemente, CA 92673
Phone: 949.366.8000
Fax: 949.366.8090
E-mail: info@regenesis.com

Chemical Name(s):	Glycerides, tall-oil di-, mono [2-[2-[2-(2-hydroxy-1-oxopropoxy)-1-oxopropoxyl]-1-oxopropoxy]propanoates]
Chemical Family:	**Organic Chemical**
Trade Name:	**3-D Microemulsion® Factory Emulsified**
Synonyms:	**HRC Advanced®, HRC-PED (Hydrogen Release Compound – Partitioning Electron Donor)**
Product Use:	**Used to remediate contaminated groundwater (environmental applications)**

Section 2 – Chemical Identification

CAS#	Chemical
823190-10-9	**HRC-PED**
72-17-3	**Sodium Lactate**
7789-20-0	**Water**

Section 3 – Physical Data

Melting Point:	**Not Available (NA)**
Boiling Point:	**100 ºC**
Flash Point:	**> 93.3 ºC using the Closed Cup method**
Density:	**1.0 -1.2 g/cc**
Solubility:	**Soluble in water.**
Appearance:	**White emulsion.**
Odor:	**Not detectable**
Vapor Pressure:	**None**

Section 4 – Fire and Explosion Hazard Data

Extinguishing Media:	**Use water spray, carbon dioxide, dry chemical powder or appropriate foam to extinguish fires.**

Water May be used to keep exposed containers cool.

For large quantities involved in a fire, one should wear full protective clothing and a NIOSH approved self contained breathing apparatus with full face piece operated in the pressure demand or positive pressure mode as for a situation where lack of oxygen and excess heat are present.

Section 5 – Toxicological Information

Acute Effects:	May be harmful by inhalation, ingestion, or skin absorption. May cause irritation.
Sodium Lactate:	Toxicity to Animals: LD50: Not available. LC50: Not available. Chronic Effects on Humans: Not Available. Other Toxic Effects on Humans: Very hazardous in case of skin contact (irritant), ingestion and inhalation.
Soybean Oil:	Health Hazards (Acute and Chronic): Acute: none observed by inhalation. Chronic: none reported.
Inhalation Risks and Symptoms of Exposure:	Excessive inhalation of oil mist may affect the respiratory system. Oil mist is classified as a nuisance particulate by ACGIH.

Skin Absorption Health Risks and Symptoms of Exposure:	Sensitive individuals may experience dermatitis after long exposure of oil on skin.

Section 6 – Health Hazard Data

Handling: Avoid continued contact with skin. Avoid contact with eyes.

In any case of any human exposure which elicits a reaction, a physician should be consulted immediately.

First Aid Procedures:

Inhalation:	Remove to fresh air. If not breathing give artificial respiration. In case of labored breathing give oxygen. Call a physician.
Ingestion:	No effects expected. Do not give anything to an unconscious person. Call a physician immediately. DO NOT induce vomiting.
Eye Contact:	Wash eyes with plenty of water for at least 15 minutes lifting both upper and lower lids. Call a physician.

Section 7 – Reactivity Data

Conditions to Avoid:	Strong oxidizing agents, bases and acids
Hazardous Polymerization:	Will not occur.
Stability:	Spontaneous combustion can occur.
Further Information:	Hydrolyses in water to form lactic acid and soybean oil.
Hazardous Decomposition Products:	None known.

Section 8 – Spill, Leak or Accident Procedures

After Spillage or Leakage:	Neutralization is not required. The material is very slippery. Spills should be covered with an inert absorbent and then be placed in a container. Wash area thoroughly with water. Repeat these steps if slip hazard remains.
Disposal:	Laws and regulations for disposal vary widely by locality. Observe all applicable regulations and laws. This material may be disposed of in solid waste. Material is readily degradable and hydrolyses in several hours.

No requirement for a reportable quantity (CERCLA) of a spill is known.

Section 9 – Special Protection or Handling

Should be stored in plastic lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass containers.

Protective Gloves:	Vinyl or Rubber
Eyes:	Splash Goggles or Full Face Shield. Area should have approved means of washing eyes.
Ventilation:	General exhaust.
Storage:	Store in cool, dry, ventilated area. Protect from incompatible materials.

Section 10 – Other Information

This material will degrade in the environment by hydrolysis to lactic acid and soybean oil. Materials containing reactive chemicals should be used only by personnel with appropriate chemical training.

This material is a non hazardous material in regards to USDOT shipping criteria.

The information contained in this document is the best available to the supplier as of the time of writing. Some possible hazards have been determined by analogy to similar classes of material. No separate tests have been performed on the toxicity of this material. The items in this document are subject to change and clarification as more information becomes available.

3-D MicroEmulsion® FACTORY EMULSIFIED

STAGED RELEASE, pH NEUTRAL, FACTORY EMULSIFIED ELECTRON DONOR

FEATURES & BENEFITS

- **A Unique Hydrophile/Lipophile Balance (HLB) Enha Distribution and Limits Reduction in Hydraulic Conduc**

  The HLB feature allows the product to distribute in the subsu via micellar movement. During this process, microscopic col aggregates (micelles) continuously propagate from areas of concentration to those of lower concentration moving the fa emulsified 3-D Microemulsion electron donor material into beyond those affected by the initial injection. This enha distribution mechanism allows for greater spacing between inj points and less time required for material application. Additio due to its unique hydrophile-lipophile balance, applications of fa emulsified 3-D Microemulsion have not resulted in the signi aquifer blockage as seen with the use of emulsified oil pro

- **Highly Efficient Application Desig**

  When designing a *in situ* remediation project with factory emulsi 3-D Microemulsion, application designs are based on mass ba and stoichiometric demand from the contaminant, competing el acceptors and a minimum total organic carbon (TOC) loading often results in a more efficient dosing requirement compa design methods employed by other electron donor supp

FIGURE 3: A 2000 lb. tote of factory emulsified 3-D Microemulsion. The material can be delivered in drums, totes or tanker trucks.

- **Neutral pH**

  Neutral pH minimizes potentially harmful impacts to beneficial biodegrading microorganisms required to metabolize c contaminants. This feature can be highly valuable when the microemulsion is used in conjunction with pH-sensitive c bioaugmentation cultur

- **Injection-Ready Formulation, Simple and Easy Applic**

  3D Microemulsion is delivered on-site as a factory emulsified, injection-ready product. It can be applied as deliverer diluted and mixed with additional site water to form a higher-volume ready-to-inject microemulsion. This mate applied through a variety of application techniques including permanent or temporary injection wells and direct-p

- **Choose from a Range of Packaging Opti**

  Factory emulsified 3-D Microemulsion can be delivered in 400 lb. drums, 2000 lb. totes and large volume tanker truc shipping, receiving and application on any site simple and convenient (Fig

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APPENDIX B
ISCO & BIOREMEDIATION DESIGN SUMMARY SHEETS

REGENESIS

PersulfOx™ CATALYZED PERSULFATE

Design Summary Output

Page 1 of 2

Regenesis Technical Support: USA (949) 366-8000

www.regenesis.com

Date:	4/8/2013
Site Name:	Former Intercream site
Treatment Area Location:	Sump Area 50 x 50 - East Portion (12 points)
Consultant/Contact:	CHA/ John Favreau

PersulfOx Grid-Based Design Specifications
Former Intercream site
Sump Area 50 x 50 - East Portion (12 points)

Design Specifications	**Quantity**	**Units**
Number of Application Events	2	**---**
Application Frequency	4-8 weeks	**---**
Injection Point Spacing within row	15	ft on center
Injection Point Spacing between rows	15	ft on center
Number of Injection Points per Event	12	---
Total Injection Points (all applications)	24	---
Treatment Areal Extent	2,500	ft2
Top of Treatment Interval	3	ft-bgs
Bottom of Treatment Interval	20	ft-bgs
Vertical Treatment Thickness	17	ft
Linear Footage to be Drilled	480	ft
Product Quantities	**Quantity**	**Units**
Total PersulfOx (all applications)	**5,786**	**lbs**
PersulfOx per Cubic Yard	4	lbs
PersulfOx per Point (per Application)	241	lbs
PersulfOx per Application	2,893	lbs
Product Cost		
PersulfOx Product Cost	**$0**	**not including tax/freight**
Field Mixing / Injection Ratios	**Value**	**Units**
% Solution	15%	% PersulfOx
Mix Water Volume per Foot	10	gallons
Mix Water Volume per Point	164	gallons
Mix Water Volume per Application	1,965	gallons
Total Mix Water Volume (All Applications)	3,931	gallons
PersulfOx Injection Volume (ox+act+water) per Foot	10	gallons
PersulfOx Injection Volume (ox+act+water) per Point	176	gallons
Total PersulfOx Injection Volume (ox+act+water) (All Applications)	4,220	gallons

REGENESIS

PersulfOx™
CATALYZED PERSULFATE

Design Summary Output

SITE DATA - INPUT PARAMETERS		
Hydraulic Parameters	**Value**	**Units**
Soil Type	silty sand	---
Fraction Organic Carbon (foc)	0.003	g/g
Porosity	0.4	cm3/cm3
Effective Porosity	0.2	cm3/cm3
Hydraulic Conductivity	10	ft/day
Hydraulic Gradient	0.005	ft/ft
Seepage Velocity	91.3	ft/yr
Saturated Soil Concentrations (sorbed mass)	**Concentration**	**Units**
Benzene	0.0	mg/kg
Toluene	0.0	mg/kg
Ethylbenzene	0.0	mg/kg
Xylenes	0.0	mg/kg
Tetrachloroethene (PCE)	0.0	mg/kg
Trichloroethene (TCE)	0.0	mg/kg
Naphthalene	0.0	mg/kg
Trimethylbenzenes	0.0	mg/kg
TPH-g	0.0	mg/kg
TPH-d	0.0	mg/kg
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/kg
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/kg
Sorbed Phase Contaminant Mass	***0.0***	***lbs***
Groundwater Concentrations (dissolved mass)	**Concentration**	**Units**
Benzene	0.0	mg/L
Toluene	0.0	mg/L
Ethylbenzene	0.0	mg/L
Xylenes	0.0	mg/L
Tetrachloroethene (PCE)	0.0	mg/L
Trichloroethene (TCE)	1.0	mg/L
Naphthalene	0.0	mg/L
Trimethylbenzenes	0.0	mg/L
TPH-g	0.0	mg/L
TPH-d	0.0	mg/L
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/L
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/L
Dissolved Phase Contaminant Mass	***1.1***	***lbs***
Other Assumptions/Qualifications/Recommendations		
1) Data Source for Modeling - Customer-provided inputs.		
2)		

REGENESIS

PersulfOx™ CATALYZED PERSULFATE

Design Summary Output

Page 1 of 2

Regenesis Technical Support: USA (949) 366-8000

www.regenesis.com

Date:	4/8/2013
Site Name:	Former Intercream site
Treatment Area Location:	Sump Area 50 x 50 - West Portion (11 points)
Consultant/Contact:	CHA/ John Favreau

PersulfOx Grid-Based Design Specifications
Former Intercream site
Sump Area 50 x 50 - West Portion (11 points)

Design Specifications	**Quantity**	**Units**
Number of Application Events	2	---
Application Frequency	4-8 weeks	---
Injection Point Spacing within row	15	ft on center
Injection Point Spacing between rows	15	ft on center
Number of Injection Points per Event	11	---
Total Injection Points (all applications)	22	---
Treatment Areal Extent	2,500	ft2
Top of Treatment Interval	3	ft-bgs
Bottom of Treatment Interval	9	ft-bgs
Vertical Treatment Thickness	6	ft
Linear Footage to be Drilled	198	ft
Product Quantities	**Quantity**	**Units**
Total PersulfOx (all applications)	**2,094**	**lbs**
PersulfOx per Cubic Yard	4	lbs
PersulfOx per Point (per Application)	95	lbs
PersulfOx per Application	1,047	lbs
Product Cost		
PersulfOx Product Cost	**$0**	**not including tax/freight**
Field Mixing / Injection Ratios	**Value**	**Units**
% Solution	15%	% PersulfOx
Mix Water Volume per Foot	11	gallons
Mix Water Volume per Point	65	gallons
Mix Water Volume per Application	711	gallons
Total Mix Water Volume (All Applications)	1,423	gallons
PersulfOx Injection Volume (ox+act+water) per Foot	12	gallons
PersulfOx Injection Volume (ox+act+water) per Point	69	gallons
Total PersulfOx Injection Volume (ox+act+water) (All Applications)	1,527	gallons

REGENESIS

PersulfOx™ CATALYZED PERSULFATE

Design Summary Output

SITE DATA - INPUT PARAMETERS		
Hydraulic Parameters	**Value**	**Units**
Soil Type	silty sand	---
Fraction Organic Carbon (foc)	0.003	g/g
Porosity	0.4	cm3/cm3
Effective Porosity	0.2	cm3/cm3
Hydraulic Conductivity	10	ft/day
Hydraulic Gradient	0.005	ft/ft
Seepage Velocity	91.3	ft/yr
Saturated Soil Concentrations (sorbed mass)	**Concentration**	**Units**
Benzene	0.0	mg/kg
Toluene	0.0	mg/kg
Ethylbenzene	0.0	mg/kg
Xylenes	0.0	mg/kg
Tetrachloroethene (PCE)	0.0	mg/kg
Trichloroethene (TCE)	0.0	mg/kg
Naphthalene	0.0	mg/kg
Trimethylbenzenes	0.0	mg/kg
TPH-g	0.0	mg/kg
TPH-d	0.0	mg/kg
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/kg
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/kg
Sorbed Phase Contaminant Mass	***0.0***	***lbs***
Groundwater Concentrations (dissolved mass)	**Concentration**	**Units**
Benzene	0.0	mg/L
Toluene	0.0	mg/L
Ethylbenzene	0.0	mg/L
Xylenes	0.0	mg/L
Tetrachloroethene (PCE)	0.0	mg/L
Trichloroethene (TCE)	1.0	mg/L
Naphthalene	0.0	mg/L
Trimethylbenzenes	0.0	mg/L
TPH-g	0.0	mg/L
TPH-d	0.0	mg/L
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/L
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/L
Dissolved Phase Contaminant Mass	***0.4***	***lbs***
Other Assumptions/Qualifications/Recommendations		
1) Data Source for Modeling - Customer-provided inputs.		
2)		

REGENESIS

PersulfOx™ CATALYZED PERSULFATE

Design Summary Output

Regenesis Technical Support: USA (949) 366-8000
www.regenesis.com

Date:	4/8/2013
Site Name:	Former Intercream site
Treatment Area Location:	S2 Area 80 x 40
Consultant/Contact:	CHA/ John Favreau

PersulfOx Grid-Based Design Specifications
Former Intercream site
S2 Area 80 x 40

Design Specifications	Quantity	Units
Number of Application Events	2	---
Application Frequency	4-8 weeks	---
Injection Point Spacing within row	15	ft on center
Injection Point Spacing between rows	15	ft on center
Number of Injection Points per Event	15	---
Total Injection Points (all applications)	30	---
Treatment Areal Extent	3,200	ft2
Top of Treatment Interval	3	ft-bgs
Bottom of Treatment Interval	9	ft-bgs
Vertical Treatment Thickness	6	ft
Linear Footage to be Drilled	270	ft
Product Quantities	**Quantity**	**Units**
Total PersulfOx (all applications)	**2,700**	**lbs**
PersulfOx per Cubic Yard	4	lbs
PersulfOx per Point (per Application)	90	lbs
PersulfOx per Application	1,350	lbs
Product Cost		
PersulfOx Product Cost	**$0**	**not including tax/freight**
Field Mixing / Injection Ratios	**Value**	**Units**
% Solution	15%	% PersulfOx
Mix Water Volume per Foot	10	gallons
Mix Water Volume per Point	61	gallons
Mix Water Volume per Application	917	gallons
Total Mix Water Volume (All Applications)	1,834	gallons
PersulfOx Injection Volume (ox+act+water) per Foot	11	gallons
PersulfOx Injection Volume (ox+act+water) per Point	66	gallons
Total PersulfOx Injection Volume (ox+act+water) (All Applications)	1,969	gallons

REGENESIS

PersulfOx™ CATALYZED PERSULFATE

Design Summary Output

SITE DATA - INPUT PARAMETERS		
Hydraulic Parameters	**Value**	**Units**
Soil Type	silty sand	---
Fraction Organic Carbon (foc)	0.003	g/g
Porosity	0.4	cm3/cm3
Effective Porosity	0.2	cm3/cm3
Hydraulic Conductivity	10	ft/day
Hydraulic Gradient	0.005	ft/ft
Seepage Velocity	91.3	ft/yr
Saturated Soil Concentrations (sorbed mass)	**Concentration**	**Units**
Benzene	0.0	mg/kg
Toluene	0.0	mg/kg
Ethylbenzene	0.0	mg/kg
Xylenes	0.0	mg/kg
Tetrachloroethene (PCE)	0.0	mg/kg
Trichloroethene (TCE)	0.0	mg/kg
Naphthalene	0.0	mg/kg
Trimethylbenzenes	0.0	mg/kg
TPH-g	0.0	mg/kg
TPH-d	0.0	mg/kg
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/kg
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/kg
Sorbed Phase Contaminant Mass	***0.0***	***lbs***
Groundwater Concentrations (dissolved mass)	**Concentration**	**Units**
Benzene	0.0	mg/L
Toluene	0.0	mg/L
Ethylbenzene	0.0	mg/L
Xylenes	0.0	mg/L
Tetrachloroethene (PCE)	0.0	mg/L
Trichloroethene (TCE)	8.0	mg/L
Naphthalene	0.0	mg/L
Trimethylbenzenes	0.0	mg/L
TPH-g	0.0	mg/L
TPH-d	0.0	mg/L
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/L
User added, add stoich. demand and Koc (see pull-dow	0.0	mg/L
Dissolved Phase Contaminant Mass	***3.8***	***lbs***
Other Assumptions/Qualifications/Recommendations		
1) Data Source for Modeling - Customer-provided inputs.		
2)		

REGENESIS

3-D MicroEmulsion FACTORY EMULSIFIED

Design Summary Output

Regenesis Technical Support: USA (949) 366-8000

www.regenesis.com

Date:	4/8/2013
Site Name:	Former Intercream site
Location:	Sump Area 50 x 50 - East Portion (12 points)
Consultant:	CHA/ John Favreau
Proposal Number:	

3-D Microemulsion Grid-Based Design Specifications

Former Intercream site

Sump Area 50 x 50 - East Portion (12 points)

Design Specifications	**Quantity**	**Units**
Injection Point Spacing within rows	15	ft on center
Injection Point Spacing between rows	20	ft on center
Number of Injection Points	12	---
Treatment Areal Extent	2,500	ft^2
Top of Treatment Interval	3	ft
Bottom of Treatment Interval	20	ft
Vertical Treatment Thickness	17	ft
Product Quanitities	**Quantity**	**Units**
Total 3-D Microemulsion (as shipped) - All Points	4,000	lbs
	479	gallons
3-D Microemulsion (as shipped) - Per Point	333	lbs
	40	gallons
Bio-Dechlor Inoculum Plus - All Points	0	liters
Bio-Dechlor Inoculum Plus - Per Point	0	liters
CRS ISCR Solution - All Points	0	lbs
CRS ISCR Solution - Per Point	0	lbs
Product Costs		
3-D Microemulsion	$0	not including tax/freight
Bio-Dechlor Inoculum Plus (Optional)	$0	not including tax/freight
CRS ISCR Solution (Optional)	$0	not including tax/freight
Total Product Costs	**$0**	**not including tax/freight**
Field Mixing/Injection Ratios	**Quantity**	**Units**
Dilution Rate Proposed (% 3DMe as shipped)	10.0	%
Total Mixing Water (all Points)	4314	gallons
Mixing Water per Point	359	gallons
Mixing Water per Foot	21	gallons
Total Volume Injected (all Points)	4,793	gallons
Total Volume Injected per Point	399	gallons
Total Volume Injected per Foot	23	gallons
Total Linear Footage to be Drilled	240	ft

REGENESIS

3-D MicroEmulsion FACTORY EMULSIFIED

Design Summary Output
Page 2 of 2

SITE DATA - INPUT PARAMETERS		
Hydraulic Parameters	**Value**	**Units**
Soil Type (sand, silt, gravel, clay, etc.)	silty sand	---
Porosity	0.4	cm^3/cm^3
Effective Porosity	0.2	cm^3/cm^3
Hydraulic Conductivity	10	ft/day
Hydraulic Gradient	0.005	ft/ft
Seepage Velocity	91.3	ft/yr
Saturated Soil Concentrations (sorbed mass)	**Concentration**	**Units**
Tetrachloroethene (PCE)	0.0	mg/kg
Trichloroethene (TCE)	0.366	mg/kg
cis-1,2-dichloroethene (DCE)	0.2	mg/kg
Vinyl Chloride (VC)	0.0	mg/kg
1,1,1-Trichloroethane (TCA)	0.1	mg/kg
1,1-Dichloroethane (DCA)	0.0	mg/kg
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/kg
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/kg
Sorbed Phase Contaminant Mass	***3***	***lbs***
Groundwater Concentrations (dissolved mass)	**Concentration**	**Units**
Tetrachloroethene (PCE)	0.0	mg/L
Trichloroethene (TCE)	1.0	mg/L
cis-1,2-dichloroethene (DCE)	1.0	mg/L
Vinyl Chloride (VC)	0.0	mg/L
1,1,1-Trichloroethane (TCA)	0.1	mg/L
1,1-Dichloroethane (DCA)	0.0	mg/L
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/L
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/L
Dissolved Phase Contaminant Mass	***2***	***lbs***
Competing Electron Acceptors	**Concentration**	**Units**
Oxygen Demand	5	mg/L
Nitrate Demand	5	mg/L
Bioavailable Manganese Demand	5	mg/L
Bioavailable Iron Demand	25	mg/L
Sulfate Demand	50	mg/L
CEA Contaminant Mass	***96***	***lbs***
Additional Assumptions/Qualifications		
1) Data Source - (i.e., customer provided data)		

REGENESIS

3-D MicroEmulsion FACTORY EMULSIFIED

Design Summary Output

Regenesis Technical Support: USA (949) 366-8000

www.regenesis.com

Date:	4/8/2013
Site Name:	Former Intercream site
Location:	Sump Area 50 x 50 - West Portion (11 points)
Consultant:	CHA/ John Favreau
Proposal Number:	

3-D Microemulsion Grid-Based Design Specifications

Former Intercream site

Sump Area 50 x 50 - West Portion (11 points)

Design Specifications	Quantity	Units
Injection Point Spacing within rows	15	ft on center
Injection Point Spacing between rows	20	ft on center
Number of Injection Points	12	---
Treatment Areal Extent	2,500	ft^2
Top of Treatment Interval	3	ft
Bottom of Treatment Interval	9	ft
Vertical Treatment Thickness	6	ft
Product Quanitities	**Quantity**	**Units**
Total 3-D Microemulsion (as shipped) - All Points	1,600	lbs
	192	gallons
3-D Microemulsion (as shipped) - Per Point	133	lbs
	16	gallons
Bio-Dechlor Inoculum Plus - All Points	0	liters
Bio-Dechlor Inoculum Plus - Per Point	0	liters
CRS ISCR Solution - All Points	0	lbs
CRS ISCR Solution - Per Point	0	lbs
Product Costs		
3-D Microemulsion	$0	not including tax/freight
Bio-Dechlor Inoculum Plus (Optional)	$0	not including tax/freight
CRS ISCR Solution (Optional)	$0	not including tax/freight
Total Product Costs	**$0**	**not including tax/freight**
Field Mixing/Injection Ratios	**Quantity**	**Units**
Dilution Rate Proposed (% 3DMe as shipped)	10.0	%
Total Mixing Water (all Points)	1725	gallons
Mixing Water per Point	144	gallons
Mixing Water per Foot	24	gallons
Total Volume Injected (all Points)	1,917	gallons
Total Volume Injected per Point	160	gallons
Total Volume Injected per Foot	27	gallons
Total Linear Footage to be Drilled	108	ft

REGENESIS

3-D MicroEmulsion FACTORY EMULSIFIED

Design Summary Output
Page 2 of 2

SITE DATA - INPUT PARAMETERS		
Hydraulic Parameters	**Value**	**Units**
Soil Type (sand, silt, gravel, clay, etc.)	silty sand	---
Porosity	0.4	cm^3/cm^3
Effective Porosity	0.2	cm^3/cm^3
Hydraulic Conductivity	10	ft/day
Hydraulic Gradient	0.005	ft/ft
Seepage Velocity	91.3	ft/yr
Saturated Soil Concentrations (sorbed mass)	**Concentration**	**Units**
Tetrachloroethene (PCE)	0.0	mg/kg
Trichloroethene (TCE)	0.366	mg/kg
cis-1,2-dichloroethene (DCE)	0.2	mg/kg
Vinyl Chloride (VC)	0.0	mg/kg
1,1,1-Trichloroethane (TCA)	0.1	mg/kg
1,1-Dichloroethane (DCA)	0.0	mg/kg
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/kg
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/kg
Sorbed Phase Contaminant Mass	***1***	***lbs***
Groundwater Concentrations (dissolved mass)	**Concentration**	**Units**
Tetrachloroethene (PCE)	0.0	mg/L
Trichloroethene (TCE)	1.0	mg/L
cis-1,2-dichloroethene (DCE)	1.0	mg/L
Vinyl Chloride (VC)	0.0	mg/L
1,1,1-Trichloroethane (TCA)	0.1	mg/L
1,1-Dichloroethane (DCA)	0.0	mg/L
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/L
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/L
Dissolved Phase Contaminant Mass	***1***	***lbs***
Competing Electron Acceptors	**Concentration**	**Units**
Oxygen Demand	5	mg/L
Nitrate Demand	5	mg/L
Bioavailable Manganese Demand	5	mg/L
Bioavailable Iron Demand	25	mg/L
Sulfate Demand	50	mg/L
CEA Contaminant Mass	***34***	***lbs***
Additional Assumptions/Qualifications		
1) Data Source - (i.e., customer provided data)		

REGENESIS

3-D MicroEmulsion FACTORY EMULSIFIED

Design Summary Output

Regenesis Technical Support: USA (949) 366-8000
www.regenesis.com

Date:	4/8/2013
Site Name:	Former Intercream site
Location:	S2 Area 80 x 40
Consultant:	CHA/ John Favreau
Proposal Number:	

3-D Microemulsion Grid-Based Design Specifications
Former Intercream site
S2 Area 80 x 40

Design Specifications	Quantity	Units
Injection Point Spacing within rows	15	ft on center
Injection Point Spacing between rows	20	ft on center
Number of Injection Points	12	---
Treatment Areal Extent	3,200	ft^2
Top of Treatment Interval	3	ft
Bottom of Treatment Interval	9	ft
Vertical Treatment Thickness	6	ft
Product Quanitities	**Quantity**	**Units**
Total 3-D Microemulsion (as shipped) - All Points	2,000	lbs
	240	gallons
3-D Microemulsion (as shipped) - Per Point	167	lbs
	20	gallons
Bio-Dechlor Inoculum Plus - All Points	0	liters
Bio-Dechlor Inoculum Plus - Per Point	0	liters
CRS ISCR Solution - All Points	0	lbs
CRS ISCR Solution - Per Point	0	lbs
Product Costs		
3-D Microemulsion	$0	not including tax/freight
Bio-Dechlor Inoculum Plus (Optional)	$0	not including tax/freight
CRS ISCR Solution (Optional)	$0	not including tax/freight
Total Product Costs	**$0**	**not including tax/freight**
Field Mixing/Injection Ratios	**Quantity**	**Units**
Dilution Rate Proposed (% 3DMe as shipped)	10.0	%
Total Mixing Water (all Points)	2157	gallons
Mixing Water per Point	180	gallons
Mixing Water per Foot	30	gallons
Total Volume Injected (all Points)	2,397	gallons
Total Volume Injected per Point	200	gallons
Total Volume Injected per Foot	33	gallons

REGENESIS

3-D MicroEmulsion® FACTORY EMULSIFIED

Design Summary Output

SITE DATA - INPUT PARAMETERS		
Hydraulic Parameters	**Value**	**Units**
Soil Type (sand, silt, gravel, clay, etc.)	silty sand	---
Porosity	0.4	cm^3/cm^3
Effective Porosity	0.2	cm^3/cm^3
Hydraulic Conductivity	10	ft/day
Hydraulic Gradient	0.005	ft/ft
Seepage Velocity	91.3	ft/yr
Saturated Soil Concentrations (sorbed mass)	**Concentration**	**Units**
Tetrachloroethene (PCE)	0.0	mg/kg
Trichloroethene (TCE)	2.928	mg/kg
cis-1,2-dichloroethene (DCE)	0.2	mg/kg
Vinyl Chloride (VC)	0.0	mg/kg
1,1,1-Trichloroethane (TCA)	0.1	mg/kg
1,1-Dichloroethane (DCA)	0.0	mg/kg
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/kg
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/kg
Sorbed Phase Contaminant Mass	***7***	***lbs***
Groundwater Concentrations (dissolved mass)	**Concentration**	**Units**
Tetrachloroethene (PCE)	0.0	mg/L
Trichloroethene (TCE)	8.0	mg/L
cis-1,2-dichloroethene (DCE)	1.0	mg/L
Vinyl Chloride (VC)	0.0	mg/L
1,1,1-Trichloroethane (TCA)	0.1	mg/L
1,1-Dichloroethane (DCA)	0.0	mg/L
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/L
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/L
Dissolved Phase Contaminant Mass	***4***	***lbs***
Competing Electron Acceptors	**Concentration**	**Units**
Oxygen Demand	5	mg/L
Nitrate Demand	5	mg/L
Bioavailable Manganese Demand	5	mg/L
Bioavailable Iron Demand	25	mg/L
Sulfate Demand	50	mg/L
CEA Contaminant Mass	***43***	***lbs***
Additional Assumptions/Qualifications		
1) Data Source - (i.e., customer provided data)		

REGENESIS

3-D MicroEmulsion FACTORY EMULSIFIED

Design Summary Output

Regenesis Technical Support: USA (949) 366-8000

www.regenesis.com

Date:	4/8/2013
Site Name:	Former Intercream site
Location:	Well S9 100 x 50
Consultant:	CHA/ John Favreau
Proposal Number:	

3-D Microemulsion Grid-Based Design Specifications

Former Intercream site

Well S9 100 x 50

Design Specifications	**Quantity**	**Units**
Injection Point Spacing within rows	15	ft on center
Injection Point Spacing between rows	20	ft on center
Number of Injection Points	12	---
Treatment Areal Extent	3,200	ft^2
Top of Treatment Interval	3	ft
Bottom of Treatment Interval	9	ft
Vertical Treatment Thickness	6	ft
Product Quanitities	**Quantity**	**Units**
Total 3-D Microemulsion (as shipped) - All Points	2,000	lbs
	240	gallons
3-D Microemulsion (as shipped) - Per Point	167	lbs
	20	gallons
Bio-Dechlor Inoculum Plus - All Points	0	liters
Bio-Dechlor Inoculum Plus - Per Point	0	liters
CRS ISCR Solution - All Points	0	lbs
CRS ISCR Solution - Per Point	0	lbs
Product Costs		
3-D Microemulsion	$0	not including tax/freight
Bio-Dechlor Inoculum Plus (Optional)	$0	not including tax/freight
CRS ISCR Solution (Optional)	$0	not including tax/freight
Total Product Costs	**$0**	**not including tax/freight**
Field Mixing/Injection Ratios	**Quantity**	**Units**
Dilution Rate Proposed (% 3DMe as shipped)	10.0	%
Total Mixing Water (all Points)	2157	gallons
Mixing Water per Point	180	gallons
Mixing Water per Foot	30	gallons
Total Volume Injected (all Points)	2,397	gallons
Total Volume Injected per Point	200	gallons
Total Volume Injected per Foot	33	gallons
Total Linear Footage to be Drilled	108	ft

REGENESIS

3-D MicroEmulsion FACTORY EMULSIFIED

Design Summary Output
Page 2 of 2

SITE DATA - INPUT PARAMETERS		
Hydraulic Parameters	**Value**	**Units**
Soil Type (sand, silt, gravel, clay, etc.)	silty sand	---
Porosity	0.4	cm^3/cm^3
Effective Porosity	0.2	cm^3/cm^3
Hydraulic Conductivity	10	ft/day
Hydraulic Gradient	0.005	ft/ft
Seepage Velocity	91.3	ft/yr
Saturated Soil Concentrations (sorbed mass)	**Concentration**	**Units**
Tetrachloroethene (PCE)	0.0	mg/kg
Trichloroethene (TCE)	0.366	mg/kg
cis-1,2-dichloroethene (DCE)	0.2	mg/kg
Vinyl Chloride (VC)	0.0	mg/kg
1,1,1-Trichloroethane (TCA)	0.1	mg/kg
1,1-Dichloroethane (DCA)	0.0	mg/kg
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/kg
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/kg
Sorbed Phase Contaminant Mass	***1***	***lbs***
Groundwater Concentrations (dissolved mass)	**Concentration**	**Units**
Tetrachloroethene (PCE)	0.0	mg/L
Trichloroethene (TCE)	1.0	mg/L
cis-1,2-dichloroethene (DCE)	1.0	mg/L
Vinyl Chloride (VC)	0.0	mg/L
1,1,1-Trichloroethane (TCA)	0.1	mg/L
1,1-Dichloroethane (DCA)	0.0	mg/L
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/L
User added, also add stoich. demand and Koc (see pull-down)	0.0	mg/L
Dissolved Phase Contaminant Mass	***1***	***lbs***
Competing Electron Acceptors	**Concentration**	**Units**
Oxygen Demand	5	mg/L
Nitrate Demand	5	mg/L
Bioavailable Manganese Demand	5	mg/L
Bioavailable Iron Demand	25	mg/L
Sulfate Demand	50	mg/L
CEA Contaminant Mass	***43***	***lbs***
Additional Assumptions/Qualifications		
1) Data Source - (i.e., customer provided data)		

APPENDIX B

IRM Work Plan Approval Letter, NYSDEC, 6/5/13

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway, Albany, New York 12233-7014
Phone: (518) 402-9662 • **Fax:** (518) 402-9679
Website: www.dec.ny.gov

Joe Martens
Commissioner

June 5, 2013

John Favreau
CHA Companies
III Winner's Circle
Albany, New York 12205

RE: Former Interceram Site, Interim Remedial Measure Work Plan
Interceram, Site Number 336045
20 Fortune Road West
Wallkill, NY 10940

Dear Mr. Favreau,

The New York State Department of Environmental Conservation (Department) and the New York State Department of Health (NYSDOH) have reviewed the Interim Remedial Measure (IRM) Work Plan for the Former Interceram Site. The Department and NYSDOH hereby approve the work plan.

Please provide the Department with advance notice prior to the start of the IRM.

If you have any questions, please contact me at (518) 402-9662.

Sincerely,

Randy Whitcher
Project Manager
Remedial Bureau C
Division of Environmental Remediation

cc:
Patrick McPoland
CeramTec North America Corporation
One Technology Place
Laurens, SC 29360

Ec:
G. Heitzman
J. Candiloro

R. Whitcher
N. Walz - DOH
eDocs

APPENDIX C

Health and Safety Plan

HEALTH & SAFETY PLAN

Former Interceram Site
20 Fortune Road West
Middletown, New York

CHA Project Number: 22154

Prepared for:

CeramTec North America Corporation
One Technology Place
Laurens, SC 29360

Prepared by:

3 Winners Circle
Albany, New York 12205
Phone: (518) 453-4500
Fax: (518) 453-4773

February 2014

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DISCLAIMER

This Site Health & Safety Plan (HASP) has been written for the use of CHA and its employees. Properly trained and experienced CHA subcontractors may also use it as a guideline document. However, CHA does not guarantee the health and safety of any person entering the site.

Due to the potentially hazardous nature of the project and the activity occurring thereon, it is not possible to discover, evaluate and provide protection for all possible hazards, which may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury at the project. The health and safety guidelines in this plan were prepared specifically for this project and should not be used on any other project without prior research by trained health and safety specialists.

CHA claims no responsibility for the use of this Plan by others. The Plan is written for the specific site conditions; purpose, dates, and personnel specified and must be amended if these conditions change.

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List of Acronyms & ABBREVIATIONS

AMSL	Above Mean Sea Level
CFR	Code of Federal Regulations
CHA	Clough Harbour & Associates LLP
CNS	Central Nervous System
CVS	Cardiovascular System
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations & Emergency Response
HSC	Health & Safety Coordinator
IDLH	Immediately Dangerous to Life and Health
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PEL	Permissible Exposure Level
PID	Photoionization Detector
PPE	Personal Protective Equipment
PPM	Parts per Million
REL	Recommended Exposure Limit
RI	Remedial Investigation
SCBA	Self-Contained Breathing Apparatus
SHSO	Site Health & Safety Officer
TLV	Threshold Limit Value
TWA	Time Weighted Average
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

1.0 INTRODUCTION

The following Health and Safety Plan (HASP) has been created for the protection of CHA staff on the Former Interceram Site, located at 20 Fortune Road West, Middletown, Orange County, New York and the immediately adjacent property to the west, occupied by Rockwood Gardens Apartments (collectively referred to herein as "Site"), as shown on Figures 1 and 2. The assignments associated with this project require CHA employees to perform tasks where personal safety could be compromised due to chemical, physical, and biological hazards. While conducting fieldwork, CHA employees may be exposed to chemical contaminants including chlorinated volatile organic compounds. Additionally, CHA employees may be exposed to physical hazards, including but not limited to, hydraulically-operated equipment and trip/fall hazards.

The requirements and guidelines in this HASP are based on a review of available information and an evaluation of potential on-site hazards from previous studies and information available to date. The plan procedures will be updated as additional information becomes available with regard to the actual site conditions.

This HASP will be discussed with site personnel and will be available on-site for review while work is underway. Personnel conducting site activities must be familiar with the procedures, requirements and provision of this plan, and in the event of conflicting plans/requirements, personnel must implement those safety practices which afford the highest level of protection. CHA personnel will report to the CHA Health and Safety Coordinator (HSC) in matters of health and safety. While the HSC is responsible for ensuring compliance with this HASP and stopping work when necessary, the Field Team Leader is responsible for implementation of this HASP into daily site activities.

Non-intrusive activities within CHA's scope of work are those that do NOT have the potential to jeopardize the health and safety of site workers, the public, or the environment with respect to site contaminants. Intrusive activities within CHA's scope of work are those that have the potential to cause health and safety concerns to site workers, the public, or the environment. These activities and any non-intrusive activities conducted in an Exclusion Zone require training per 29 CFR 1910.120 *Hazardous Waste Operations and Emergency Response, Final Rule*, which govern work on hazardous waste sites.

2.0 GENERAL SITE INFORMATION

CHA Project Number:	22154
Client	CeramTec North America Corporation
Client Contact:	Mr. Patrick McPoland CeramTec North America Corporation One Technology Place Laurens, SC 29360 Phone (864) 682-1198 e-mail: pmcpoland@ceramtec.com
Site Name:	Former Interceram Site
Site Address:	20 Fortune Road West Middletown, New York
Work Tasks/Duration:	-Chemical Oxidation Injection Pilot Testing / 1 day -Groundwater sampling / 1 to 2 days
Subcontractor(s):	A subcontractor will be utilized to provide drilling services related to the installation of borings for the purposes of injection of chemical oxidation products.

3.0 EMERGENCY CONTACTS

Ambulance:	**911**
Police Department:	**911**
Fire Department:	**911**
Hazardous Materials Response:	**911**
Poison Control:	1-800-336-6997
Utility Clearance:	1-800-DIG-SAFE (1-800-344-7233)
NYSDEC Spills Hotline:	1-800-457-7362 (24 hours a day)
CHA Contact:	Ms. Margaret Rudzinski (518) 453-2830 – Office (518) 469-9259 – Cell e-mail: mrudzinski@chacompanies.com
Client Contact:	Mr. Patrick McPoland (864) 682-1198 – Office (864) 200-0474 – Cell e-mail: pmcpoland@ceramtec.com

Nearest Hospital:	Orange Regional Medical Center 707 East Main Street Middletown, NY 10940 (845) 333-1300

Directions to Hospital:

1. Head **east** on **Fortune Road West**.
2. Turn **right** onto **Industrial Drive**.
3. Turn **left** onto **Tower Drive**.
4. Turn **right** onto **Route 211 West**
5. Take ramp **left** for **Route 17 East**
6. At **Exit 122,** take ramp **right** and follow signs for **CR-67.**
7. Turn **left** onto **East Main Street/CR-67** and follow 0.3 miles to hospital (707 East Main St.)

NOTE: Map to the hospital provided as Figure 3.

4.0 KEY PERSONNEL

4.1 Off-Site Personnel

Title:	**Project Manager**
Description:	Responsible for defining project objectives, allocating resources, determining the chain of command, and evaluating program outcome.
Contact:	Margaret Rudzinski @ (518) 453-2830

Title:	**Technical Manager/Project Coordinator**
Description:	Reports to upper level management, has authority to direct response operations, assumes control over site activities. Guides the Project in scientific matters.
Contact:	John Favreau @ (518) 453-8795

Title:	**CHA Director of Environmental Health & Safety**
Description:	Overall responsibility for implementing company-wide health and safety standards, procuring appropriate personal protective clothing and equipment, staff training, etc.
Contact:	Margaret Rudzinski, @ (518) 453-2830

4.2 On-Site Personnel

The proposed scope of work includes the installation of soil borings and monitoring wells, surface soil sampling, and groundwater sampling to further characterize the Site. The following individual is responsible for on-site health and safety.

Title:	**Site Health & Safety Officer (SHSO) / Field Team Leader**
Description:	Advises the field team on all aspects of health and safety issues.
Contact:	John Favreau @ (518) 453-8795 (Office), (518) 858-7068 (Cell)

Any CHA employee who observes unsafe conditions has the authority to issue a stop work order for the Site.

5.0 SITE ENTRY

5.1 Objectives

The objectives of site entry are to oversee site remedial activities (specifically, injection of chemical oxidation products) and conduct groundwater sampling activities. These tasks require entry to the Site by CHA personnel.

5.2 Safety Meetings

To ensure that the HASP is being followed, the SHSO shall conduct a safety meeting prior to entry to the site or the initiation of any site activity, if any conditions change, and before each work day.

5.3 Safety Training

The SHSO will confirm that every person assigned to a task has had adequate training for that task and that the training is up-to-date by checking with the CHA Director of Environmental Health and Safety (EHS). On-site CHA staff working on this project shall have a minimum of a 40-hour initial Hazardous Waste Operations and Emergency Response (HAZWOPER) training and a current 8-hour refresher course. Additionally, CHA will confirm that subcontractor's on-site personnel have the HAZWOPER training and a current 8-hour refresher course.

Training will have been conducted and certified in accordance with the Occupational Safety and Health Administration (OSHA) regulations as outlined in 29 Code of Federal Regulations (CFR) 1910.120.

5.4 Medical Surveillance

On-site CHA personnel (including CHA subcontractors) will have had a medical surveillance physical consistent with OSHA regulations in 29 CFR 1910.120 and performed by a qualified occupational health physician. The SHSO shall confirm prior to initiation of work on this Site that every person assigned to a task has had an annual physical, has passed the medical examination and has been determined medically fit by the occupational health physician for this type of work.

5.5 Site Mapping

The Site location is shown on Figure 1. An aerial photograph of the Site is included as Figure 2.

6.0 SITE CHARACTERIZATION

6.1 Site Description

The Former Interceram Site is located on an approximately 3-acre parcel in the Town of Wallkill, Orange County, New York. The Site consists of a single-story building and adjacent parking lot, located on the north side of Fortune Road West. Currently, Medical World, a medical parts supplier, occupies the eastern portion of the building and Auto Parts International, an auto parts supplier, occupies the western portion of the building. Warehouse space is located in the northern portion of the building. A site location map has been included as Figure 1.

The Site is located in a mixed commercial and residential area. Rockwood Gardens Apartment Complex is located immediately west and southwest of the Site. A portion of the planned remedial and monitoring activities will occur on the eastern portion of the Rockwood Gardens property. Another apartment complex is located to the east of the Site. Residential properties are located to the north of the Site and Occupations Inc. is located south of the Site. Commercial businesses are located southeast of the Site along Industrial Drive.

6.2 Site Topography

Overall topography in the area of the Site and adjoining Rockwood Gardens property slopes gently to the west-northwest. Based on historical groundwater monitoring data, local groundwater flow in the area of the Site and adjoining Rockwood Gardens property is generally toward the west-northwest.

6.3 Meteorological Data

Field work is expected to be conducted during the spring and summer of 2014. Prior to each day's activities, the daily forecast will be monitored for indications of adverse work conditions and/or sever weather. If poor weather hinders the continuation of the day's activities or poses unsafe work conditions, the Field Team Leader may stop work for the day.

7.0 HAZARD EVALUATION

7.1 Physical Hazards

Physical hazards such as the following may be encountered on site:

- Slip/trip/fall (e.g. from mud, debris, steep topography, ice, etc.)
- Ultraviolet rays
- Lifting strains (e.g. from generators, drums, equipment)
- Heavy machinery and vehicles (e.g. drill rigs)
- Flying debris (e.g. debris from drilling equipment)
- Noise (e.g. elevated noise levels associated with drilling equipment)
- Heat/cold stress

7.2 Biological Hazards

- Biological hazards are not expected to pose a risk to employees on the site.

7.3 Chemical Hazards

Hazardous Material Types: Liquid _X_ Solid _X__ Sludge _____ Gas ____

7.3.1 Dispersion Pathways

The potential exposure mechanisms that can transport particulates and contaminants of concern from the areas of the investigation and monitoring activities to other areas of the Site as well as beyond the boundaries of the Site are:

- Contact with contaminated groundwater
- Contact with PersulfOx™ chemical oxidation product in its dry granular form as well as once it's been mixed with water.
- Projection of contaminated material in air
- Failure to adhere to decontamination procedures
- Failure to adhere to Standard Operating Procedures

Nuisance dust can be a problem at any site that involves intrusive investigation activities. However, soil disturbance during the remedial activities and monitoring will be minimal. Therefore, no significant migration of fugitive dust is expected. If necessary, dust will be controlled to the extent feasible to prevent the public from being unnecessarily concerned and to further reduce the nuisance dust hazard to Site personnel. Nuisance dust will be controlled by utilizing appropriate dust suppression techniques.

7.4 Hazard Identification & Control

Hazard controls generally consist of the following specific safety procedures: training, engineering controls, air monitoring, and personal protection equipment (PPE) selection. CHA employees are required to use the PPE appropriate to their work task and potential exposures as outlined in the HASP. The levels of PPE assigned to each activity are based on available information on the estimation of potential exposure associated with each work task.

AFFECTED PERSONNEL	TASK/ OPERATION	HAZARDS	HAZARD CONTROL
Exclusion Zone Personnel	Injection of chemical oxidation product(s); groundwater sampling	Vehicular Traffic Mechanical Drill Rig	- Wear reflective vest - Use cones & signs to delineate work zone
Exclusion Zone Personnel	Injection of chemical oxidation product(s); groundwater sampling	Potential Exposure to VOCs in groundwater; potential exposure to PersulfOx™ chemical oxidation product in its dry granular form and after mixing with water.	Exposure to chemical hazards: - Stand upwind when possible - Minimize direct contact - Avoid walking through discolored areas, puddles, leaning on drums or contacting anything that may; be contaminated. - Don appropriate PPE - Level D PPE work as a minimum - >5 parts per million (ppm) organic vapor for 5 minutes, upgrade to Level C. - >200 ppm organic vapor for 5 minutes upgrade to Level B
Exclusion Zone Personnel	Injection of chemical oxidation product(s); groundwater sampling	Miscellaneous physical hazards including noise and physical contact hazards	- Don appropriate PPE when working around drilling equipment • Hard Hat • Safety Glasses • Hearing Protection
Exclusion Zone Personnel	Injection of chemical oxidation product(s); groundwater sampling	Inclement weather	- Cease site activities during electrical storm - Cease site activities in extreme temps
Exclusion Zone Personnel	Injection of chemical oxidation product(s); groundwater sampling	Back Injury	- Use mechanical lifting device when possible - Use buddy system when lifting heavy or awkward objects - Do not jerk or twist body while lifting

Potential hazards that may be associated with potential on-site activities are listed in the following table:

Hazards:	Precaution
1) Skin and/or eye contact with contaminated groundwater, chemical oxidation products, and sample preservation agents. 2) The inhalation of volatile organic vapors during site activities. 3) The inhalation of contaminated dusts and other airborne particles during Site activities.	- Wear the required PPE when conditions or activities indicate the need for it. - Avoid walking through puddles, and contacting other potential sources of contaminants such as drums. - Keep airborne dust levels to a minimum by wetting down surfaces.
Physical injuries, such as abrasions, insect bites, back injuries, slips, trips, falls.	- Avoid slippery surfaces when possible. - Practice safe lifting techniques. - Know the location of other Site workers at all times, especially before moving and/or starting up heavy equipment such as a drill rig or truck. - Be observant of possible insect nesting areas. - Have a first aid kit on hand.
Heat and cold stress	- Dress appropriately, wear dry clothing. - Take frequent breaks during extreme weather conditions. - Refer to the section on heat stress or cold stress, as appropriate for additional precautions.
Fire	- Have a fire extinguisher on hand. - Keep ignition sources away from flammable materials and atmospheres.
Security	- Stay alert to neighborhood activities

The hazards associated with specific site tasks are described below:

Hazards:	Precaution
Injection of Chemical Oxidation Materials / Groundwater Monitoring & Sampling	
Inhalation of and skin contact with contaminants in soil and groundwater.	- Conduct air monitoring specified in Section 8.0 and abide by all action levels. - Stand upwind to reduce inhalation hazard. - Wear respiratory protection when conditions indicate the need for it. - Wear chemical resistant gloves and safety glasses to prevent skin/eye contact.
Contact with overhead power lines and/or buried utilities/debris while drilling.	- Do not drill within 20 feet of overhead power lines. - Call a utility locator to check for location of underground utilities. - Use common sense when choosing drilling locations.
Noise exposure and contact with moving parts of drill rig and/or flying debris	- Wear hearing protection if you must shout to hear someone who is standing one foot or less away. - Do not stand unnecessarily close to the drill rig or Geoprobe when it is operating. - Know the location of the emergency shut-off switch. - Wear a hard hat

8.0 AIR MONITORING & ACTION LEVELS

8.1 Air Monitoring Equipment

The following environmental monitoring instruments shall be used on site at the specified intervals.

Photoionization Detector (PID)

A PID with a 10.6 eV lamp shall be used during tasks that require any intrusive activities and/or as ordered by CHA personnel. The PID will be utilized at the start of all intrusive activities, whenever obvious contamination is noted, and at least every 15 to 30 minutes through the duration of the intrusive activities. PID measurements shall be taken in the breathing zone of on-site personnel, in low areas where flammable vapor may accumulate and in the headspace of soil and water samples. Measurements will be collected downwind of intrusive activities.

The PID shall be calibrated daily following manufacturers recommendations. Calibration data shall be recorded in daily logs.

Dust

Dust levels shall be visibly monitored. If it appears dust levels are increasing, a particulate meter shall be utilized following the manufacturer's recommendations.

Temperature

Ambient temperature should be monitored throughout the work day for potential heat stress or cold stress conditions. Based upon observed weather forecasts, a thermometer shall be utilized to monitor on-site temperatures whenever the expected low temperature for the day is anticipated to be less than 20 degrees Fahrenheit or the anticipated high temperature is anticipated to be in excess of 90 degrees Fahrenheit.

8.2 Action Levels

An action level is a point at which increased protection is required due to the concentration of contaminants in the work area or other environmental conditions. Each action level is determined by the concentration level (above background level) and the ability of the PPE to protect against that specific contaminant. The action levels are based on concentrations in the breathing zone.

Should action levels be reached, work operations shall cease until further evaluation is performed and safe levels are prevalent. If ambient levels are measured which exceed the action levels in areas accessible to the public or unprotected personnel, necessary site control measures (barricades, warning signs, and mitigative actions, etc.) must be implemented before commencing activities at the specific work site. If through engineering controls and monitoring, safe levels (below action levels) cannot be achieved, an upgrade in PPE shall be mandated by the task SHSO, or operations shall cease in that portion of the site. The action levels at the Site are as follows:

- VOCs (PID monitor) = consistent readings of >5 ppm sustained for 5 minutes
- Atmospheric gases (Quad Alarm)
  - Combustible gases = >10% lower explosive limit (LEL), requires a Self-Contained Breathing Apparatus (SCBA)
  - Oxygen = 19.5%-23.5%, above or below requires a SCBA
  - Carbon Monoxide = >35ppm, requires a SCBA
  - Hydrogen Sulfide = >10ppm, requires a SCBA
- Temperature = body core temperature of < 36ºC (96.8ºF) for cold stress

8.3 Environmental Sampling

Environmental Sampling is fully discussed in the Remedial Work Plan (April 23, 2013) associated with this project.

9.0 PERSONAL PROTECTIVE EQUIPMENT

9.1 General Information

The purpose of personal protective clothing and equipment is to shield or isolate individuals from the chemical and physical hazards that may be encountered during work activities. The level of protection required must correspond to the level of hazard known, or suspected, in the specific work area.

There are four basic levels (A, B, C, and D) of personal protection as established by the United States Environmental Protection Agency (USEPA). Level A provides the highest level of protection and Level D provides the lowest.

- ***Level D*** will consist of field clothes, outer gloves (if soil/water contact is likely), steel toe and shank safety boots, safety glasses (for splash hazards), ear protection (during drilling activities), traffic vest, and a hard hat (if overhead hazards are present).

- ***Modified Level D*** will consist of Tyvek© coverall, safety glasses (for dust/splash hazards) outer gloves with disposable inner gloves, steel toe and shank work boots, overboots if free product is encountered or as otherwise specified, hearing protection and, if overhead hazards are present, such as during drilling, a hard hat. Safety glasses must also be worn.

- ***Level C*** will consist of the same equipment as listed for modified Level D with the addition of a full-faced air purifying cartridge equipped respirator.

- ***Level B***, if required for working on this project site, consists of the same equipment as listed for Level C with the substitution of a full-faced SCBA in place of a full-faced air purifying respirator.

- ***Level A*** is not anticipated for this project.

When wearing Level C, B, or A, all junctures between the chemical protective coverall (i.e., Tyvek© suit) and boots, gloves, and respirator must be taped. The suit must be placed over the boots and gloves. When taping, remember to leave a tab for easy removal. Stress spots in the suit must also be taped, such as under the arms, down the zipper, and up or across the back.

PPE has been selected consistent with the hazards associated with the expected field activities. PPE is available in various sizes to provide a good fit for all personnel. PPE must be stored in a clean location with access by Site workers. Site workers are responsible for maintenance and storage of equipment at the Site.

9.2 Task Specific Requirements

Based on evaluation of the potential hazards for the Site, the initial levels of PPE have been designated as a Level D based on the potential route of contact and the potential contaminants. In

this plan, Modified Level D is presented as a modified protection level which consists of, at a minimum, hard hat, safety glasses, work boots, long pants, latex/nitrile gloves, and other weather appropriate clothing. Respiratory protection and an upgrade in PPE to Level C shall be incorporated only where required by Site conditions. CHA notes the following additional requirements:

- A hard hat is required when personnel are working around heavy machinery or vehicle (e.g. drilling operations) or when working in the right-of-way or an adjacent roadway and increased visibility is necessary.
- Safety glasses are required when personnel are working around heavy machinery or vehicle (e.g. drilling operations) where there is a potential for debris to fly into worker's eyes.
- A reflective safety vest must be worn while working within the right-of-way or an adjacent roadway or when increased visibility is necessary.
- Latex/nitrile gloves are only required to be worn during intrusive activities when soil and water samples are being handled. Tyvek© suits and gloves are not required for non-intrusive activities.
- Hearing protection shall be required at the discretion of the SHSO, but at a minimum, must be utilized by on-Site personnel when the drill rig hammer is being utilized to advance the soil sampler.
- No changes to the specified levels of PPE shall be made without first obtaining approval of the SHSO. If action levels are reached, work shall cease and the SHSO and his advisors shall perform further evaluations. If necessary, an upgrade in PPE shall be mandated.
- If an upgrade to Level C PPE is required, air purifying respirators equipped with organic vapor/acid gas/HEPA cartridges will be utilized. Organic vapor/acid gas/HEPA cartridges are the appropriate canister for use with the involved substances. Respirators used will be approved by the National Institute for Occupational Safety and Health (NIOSH) and/or the Mine Safety and Health Administration (MSHA) and their use shall be consistent with OSHA regulations in 29 CFR 1910.134. On-site personnel wearing a respirator shall have respirator clearance from a qualified occupational health physician. In addition, the respirator wearers on site shall perform qualitative fit tests to ensure proper fit of the face seal of the respirator. Inspection logs shall be completed, signed and kept with the HASP. Filter cartridges used shall be of the same manufacturer as the respirator and shall be changed on a daily basis at a minimum and/or if breathing becomes difficult. Air purifying respirators shall not be used if any of the following conditions exist:

    - Oxygen deficiency
    - Immediately Dangerous to Life or Health (IDLH) concentrations of specific substances
    - Entry into an unventilated or confined area which has not been characterized
    - Presence or potential presence of unidentified contaminants
    - Contaminant concentrations are unknown or exceed designated maximum use specifications
    - Identified gases or vapors have inadequate warning properties
    - High relative humidity, may reduce protection offered by sorbent

- The need for Level A, Level B or Level C PPE is not anticipated for tasks covered by this HASP. Should Level D PPE be deemed insufficient based upon the conditions encountered in the field, work activities will temporarily cease and the HASP will be updated prior to continuing on-Site activities.

Personnel should also be able to upgrade or downgrade their level of protection with the concurrence of the SHSO and task manager based upon air monitoring results and the following.

Reasons to upgrade:

- Known or suspected presence of dermal hazards.
- Occurrence or likely occurrence of gas, vapor or dust emission.
- Change in work task that will increase the exposure or potential exposure with hazardous materials.

Reasons to downgrade:

- New information indicating that the situation is less hazardous than was originally suspected.
- Change in site conditions that decrease the potential hazard.
- Change in work task that will reduce exposure to hazardous materials.

10.0 SITE CONTROL MEASURES

10.1 Work Zones

Site work zones will be clearly marked as applicable and discussed with on-site personnel. CHA's subcontractor(s) will be responsible for delineating and maintaining the work zones. Site work zones shall consist of the exclusion, support, and contamination reduction zones as required.

The **exclusion zone** is the zone in which contamination is most likely to be encountered. For the drilling activities the exclusion zone is considered to be a 30 foot radius surrounding the drill rig. Flow of personnel and equipment into and out of the zone will be monitored throughout the investigation. While in the exclusion zone personnel must wear the specified PPE.

The **contamination reduction zone** will be outside the exclusion zone for any boring/well location. Personnel working inside the exclusion zone will decontaminate or dispose of soiled clothing in the contamination reduction zone each time the exclusion zone is exited, if the clothing worn becomes soiled. Appropriate equipment, supplies, and personal PPE will be made available in the contamination reduction zone to facilitate the protection and decontamination of personnel working in the exclusion zone.

A s**upport zone**, if necessary, will be established in close proximity to the contamination reduction zone. This area will be used for operational direction and support facilities, emergency response, supplies/equipment, and worker rest areas.

10.2 Communication

Communication shall be accomplished by a combination of person to person verbal correspondence, the use of cellular phones, and by verbal signals or hand signals depending on the pre-design programming task. Communication procedures will be reviewed at the Safety Meeting before entering the exclusion zone.

10.3 Site Security Measures

The contamination reduction zone and support zone shall be clearly marked as appropriate and reviewed at the Safety Meeting. Personnel shall report to the field team leader upon entering and exiting the Site so that everyone will be accounted for.

11.0 DECONTAMINATION

Decontamination activities will be performed on-site. No decontamination other than small hand tools/equipment is anticipated.

11.1 PPE

At minimum, non-disposable personnel protective clothing will be decontaminated by first washing the soiled items with a non-phosphate detergent and potable water mixture, followed by potable water and distilled water rinses. Disposable/expendable PPE and clothing will be placed into plastic trash bags for off-site disposal.

11.2 Small Equipment & Hand Tools

Small hand tools and equipment will be decontaminated as appropriate and prior to removal from the Site utilizing a non-phosphate detergent and potable water mixture.

12.0 HAZARD COMMUNICATION

In compliance with 29 CFR 1910.1200, hazardous materials brought on-site by any personnel (CHA or contractors) shall be accompanied with an appropriate Material Safety Data Sheet (MSDS). The SHSO shall be responsible for maintaining the MSDSs on-site, reviewing them for hazards that working personnel may be exposed to, and evaluating their use on-site with respect to compatibility with other materials, including personal protective equipment, and their hazards. Should the SHSO deem the material too hazardous for use on-site, the party responsible for bringing the material on-site shall remove it from the Site. The MSDS for PersulfOx™, the chemical oxidation product to be used on-site for groundwater remediation, is included in Appendix A.

13.0 CONFINED SPACE

Confined space entry is not anticipated during this project; however, in the event that a confined space entry is necessary then all confined space entry procedures, techniques, and equipment shall be consistent with OSHA regulations in 29 CFR 1910.146.

14.0 EMERGENCY PROCEDURES

On-site emergencies can range in intensity from minor to serious conditions. Various procedures for responding to Site emergencies are listed in this section. The designated SHSO is responsible for contacting local emergency services in emergency situations (however, others must assume responsibility if the situation warrants). An injured person shall be accompanied by another worker at all times.

The following emergency procedures will be used by on-Site personnel. The SHSO shall be notified of any on-Site emergencies and be responsible for ensuring that the appropriate measures are followed. Non-emergencies will be treated on site and documented and then directed to seek further medical attention. Occupational injuries and illnesses will be reported, recorded, and investigated.

CHA personnel will be equipped with a cellular telephone for communication. Other emergency equipment, including a first aid kit will be on-site at all times. In the case of a medical emergency, CHA personnel and contractor SHSO will communicate to determine the nature of the emergency and the location. After it is determined whether there is an actual emergency, he/she will instruct someone to call for an ambulance. Cellular telephones will to be used to place such a call.

If an emergency evacuation of the Site must take place, all personnel on-Site will immediately stop work, shut off all equipment, and assemble at the entrance to the Site. After assembly of all personnel, the Site will be evacuated using vehicles. If time permits, as determined by the SHSO, emergency decontamination will take place. This will consist of a wash and rinse of overboots, removal of disposable clothing, and washing of hands and face. If the roll call by the SHSO reveals someone is still on site, the SHSO and his/her assistant will look for the person(s), using appropriate personal protection.

14.1 Personnel Injury

Upon notification of personnel injury the nature of the injury will be assessed, the appropriate first aid shall be initiated and, if necessary, contact shall be made for an ambulance and with the designated medical facility. If the injury increases the risk to others, activities on-site will stop until the added risk is removed or minimized.

14.2 Fire/Explosion

Upon notification of fire or explosion, Site personnel shall assemble at a safe distance upwind of the involved area. The SHSO shall alert the appropriate fire department.

14.3 PPE Failure

If any Site worker experiences a failure or alteration of PPE that affects the protection factor, that person and his/her buddy shall immediately exit the exclusion zone. Re-entry shall not be permitted until the equipment has been repaired or replaced.

14.4 Chemical Exposure

If any site worker experiences adverse effects due to chemical exposure, the appropriate first aid procedures shall be followed according to the MSDS for that chemical. The person shall at a minimum be moved to fresh air. Whenever possible, personnel should be decontaminated before administering first aid.

Workers should go to the support zone as soon as any of the follow acute symptoms of exposure are experienced:

- Rotten egg odor (indicates hydrogen sulfide)
- Sweet almond-like odor (indicates cyanide presence)
- Headache
- Nausea or vomiting
- Fatigue
- Weakness
- Confusion
- Dizziness
- Irritation of eyes, nose, throat
- Dermatitis
- Chills
- Chest tightness
- Cough
- Muscle spasms
- Staggered gait
- Increased salivation
- Indigestion
- Diarrhea
- Irritability
- Metallic taste in mouth

14.5 Spill Containment

If on-site work results in the accidental spill or release of oil or hazardous materials, containment to the extent possible will be required by on-site personnel (in proper PPE). Containment should include the use of absorbent pads or materials, diking with soils, covering and/or diverting spills from sewers, drains, surface water bodies, etc. For spills that cannot be controlled by on-site personnel or are above the reportable quantities, the SHSO or designee will secure the area and notify the NYSDEC Spills hotline and notify appropriate emergency personnel through the 9-1-1 system.

15.0 EMERGENCY MEDICAL CARE

15.1 Nearest Hospital

See Section 3.0 for directions to the nearest hospital.

15.2 On-Site First Aid

A first aid kit shall be maintained and stored within the Contamination Reduction Zone. General first aid procedures are identified in the list below:

Skin/Eye Contact: Flush eyes and/or skin thoroughly with water for 15 minutes. Remove contaminated clothing. If skin was contacted with a dry material, brush it off first, then flush with water. Seek medical attention if irritation develops.

Ingestion: Do not induce vomiting. Call the Poison Control Center. Tell them what was swallowed, if possible. Follow instructions. Arrange for transport of the victim to the hospital by calling for an ambulance.

Inhalation: Remove person from contaminated environment without risking your own safety. DO NOT ENTER A CONFINED SPACE UNLESS WEARING LEVEL B AND A STANDBY PERSON IS PRESENT. DO NOT ENTER EXCLUSION ZONE UNLESS WEARING ONE LEVEL HIGHER PROTECTION THAN VICTIM WAS WEARING. Administer CPR, if necessary. Bring victim to hospital or call ambulance.

Injuries: Do not move a victim who may have a back injury. Cover them with coats, blankets, or other appropriate items to keep them warm. Call an ambulance.

Apply pressure to bleeding wounds. If the victim is able, have the victim apply pressure to the wound. If they are not able, wear gloves to protect from exposure to blood. Put gauze bandages or other clean cloth over the wound. Do not remove blood-soaked bandages or cloth - instead put additional bandages or cloths over the blood-soaked bandages. Elevate the limb with the injury above the heart.

Administer CPR if victim does not have a pulse and if you are currently certified in CPR. Have someone call for an ambulance immediately if there is any possibility that the victim is having or had a heart attack.

Shock is likely to develop in any serious injury or illness. The following are signals of shock: restlessness or irritability; altered consciousness; pale, cool, moist skin; rapid breathing; and/or rapid

pulse. In the event of shock, do the following: Immediately have someone call for an ambulance; have the victim lie down; elevate legs 12 inches unless you suspect head, neck, or back injuries; if victim is cool, cover the victim to prevent chilling; do not give the victim anything to drink, even if thirsty.

Collapses: If Site personnel have unexplainably collapsed, personnel must evacuate work area. Rescue personnel must don a level of protection higher than the victim was in before evacuating victim from work area. Confined space rescue always requires Level B protection. No one will re-enter the work area until the cause has been determined and the SHSO has determined that the area is safe to re-enter.

15.3 Heat & Cold Stress

15.3.1 Heat Stress

Heat Stress Symptoms and Remedies

Acclimatization and frequent rest periods must be established for conducting activities where heat stress may occur. Symptoms of heat stress and appropriate responses include:

- Heat Rash - redness of skin. Remedy - frequent rest and change of clothing.
- Heat Cramp - painful muscle spasms in hands feet, and/or abdomen. Remedy - administer lightly salted water (1/4 teaspoon per gallon) orally unless there are medical restrictions.
- Heat Exhaustion - clammy, moist, pale skin; dizziness, nausea rapid pulse, fainting. Remedy - remove to cooler area and administer fluids orally or have physician administer saline solution intravenously.
- Heat Stroke - hot dry skin; red, spotted or bluish; high body temperature of 104°F or greater, mental confusion, loss of consciousness, convulsions or coma. Remedy -immediately cool victim by immersion in cool water. Wrap in wet sheet while fanning, sponge with cool liquid. While fanning, treat for shock. Call for an ambulance. DO NOT DELAY TREATMENT. COOL BODY WHILE AWAITING AMBULANCE.

Heat Stress – Precautions

Precautions to take to reduce the possibility of heat stress include the following:

- Avoid caffeine and alcohol both during work hours and 24 hours before on-site activity.
- Drink water before feeling thirsty.
- Watch for signs and symptoms of heat stress.
- Rest in cool/dry areas, such as air conditioned vehicle or building or in the shade.
- Use cooling devices such as water sprays or fans to cool off.

15.3.2 Cold Stress

Cold Stress Symptoms

Cold Stress symptoms may include any or all of the following:

- Excessive fatigue
- Irritability
- Euphoria
- Drowsiness
- Uncontrollable shivering
- Frost nip
- Medical assistance is necessary if these symptoms persist.

Cold Stress Treatment

Cold stress and frostbite emergency care:

- Remove the patient to a warm, dry place.
- If clothing is wet, remove and replace with dry clothing.
- Keep patient warm. Re-warming of the patient should be gradual to avoid heat stroke symptoms.
- Dehydration or the loss of body fluids may result in cold injury due to a significant change in blood flow to the extremities. If patient is conscious and alert, warm sweet drinks should be provided.
- Extremities affected by frostbite should be gradually warmed up and returned to normal temperature. Moist compresses should be applied; begin with lukewarm compresses and slowly increase the temperature as changes in skin temperature are detected.
- Keep patient warm and calm, remove to a medical facility as soon as possible.

Cold Stress – Prevention

- Take breaks in heated shelters at frequent intervals when working in temperatures below 20°F, including wind chill.
- Remove outer layer of clothing when entering the shelter. Loosen other layers to allow sweat to evaporate.
- Drink warm, sweet liquids or soups to reduce possibility of cold injury. Avoid caffeine and alcohol.

16.0 STANDARD OPERATING PROCEDURES

The following standard operating procedures shall be implemented during this project:

- All construction activities shall be performed in compliance with all OSHA Construction Industry Standards and Regulations. Following the procedures, requirements, and provisions of this plan, personnel who may be potentially exposed to hazardous materials or wastes shall be in compliance with federal/state regulations, OSHA 29 CFR 1910.120.

- Horseplay will NOT be tolerated under any circumstances.

- Work conducted on-site shall be coordinated through the Project Manager and the SHSO.

- Minimize contact with hazardous substances.

- Use remote sampling, handling, and container-opening techniques whenever possible.

- Any drum or tank discovered on-site shall not be sampled, opened, or handled until an appropriate task-specific plan for unknown drum/tank sampling has been implemented.

- Samples from areas known, or suspected, to be contaminated with hazardous substances shall be handled with appropriate personal protective equipment.

- The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated shall result in evacuation of site personnel and reevaluation of the hazards and the level of protection. Contact the Company Health and Safety Coordinator to determine the appropriate actions to take.

- Protect monitoring and sampling instruments by bagging.

- Wear disposable outer garments and use disposable equipment where appropriate.

- Use proper dressing procedures before entering the Exclusion Zone and use all fasteners (zippers, snaps, buttons, etc.).

- PPE and skin surfaces should be checked for cuts and/or punctures.

- Equipment used in Site operations shall be properly cleaned and maintained in good working order. Equipment shall be inspected for signs of defect and/or contamination before and after use.

- Do not eat, smoke, chew gum, or drink on site. Avoid any practice that may increase the probability of hand-to-mouth transfer and ingestion of material. Avoid any application of cosmetics. Personnel shall wash thoroughly before initiating any of the aforementioned activities.

- Avoid brushy areas to minimize allergic reactions to poison ivy, deer ticks, etc.

- Prescribed drugs should not be taken by personnel where the potential for absorption, inhalation, or ingestion of toxic substances exists unless specifically approved by a qualified person. Alcoholic beverages intake should be avoided.

- The "buddy system" must always be used and enforced. At a minimum, two persons who are in constant communication with each other shall be on site at all times during any activity conducted on-site in which the potential exists for exposure to hazardous materials, or accident or injury.

- Personnel entering the Contamination Reduction Zone and/or the Exclusion Zone must check in and out at the Access Control Points.

- Subcontractors shall abide by this Health & Safety Plan or provide one that is equivalent, at a minimum, to the conditions specified in this Health & Safety Plan.

- No workers with beards or heavy side burns are allowed to wear respirators.

17.0 CERTIFICATION & AGREEMENT

This agreement must be signed by all CHA employees, subcontractors, and visitors before conducting field activities at this site and/or entering the exclusion or decontamination zones.

I have read this Health and Safety Plan and I understand the requirements of the Plan. I will conduct work at this site in accordance with the requirements of the Health and Safety Plan.

Signature	Date	Company
Signature	Date	Company
Signature	Date	Company
Signature	Date	Company
Signature	Date	Company
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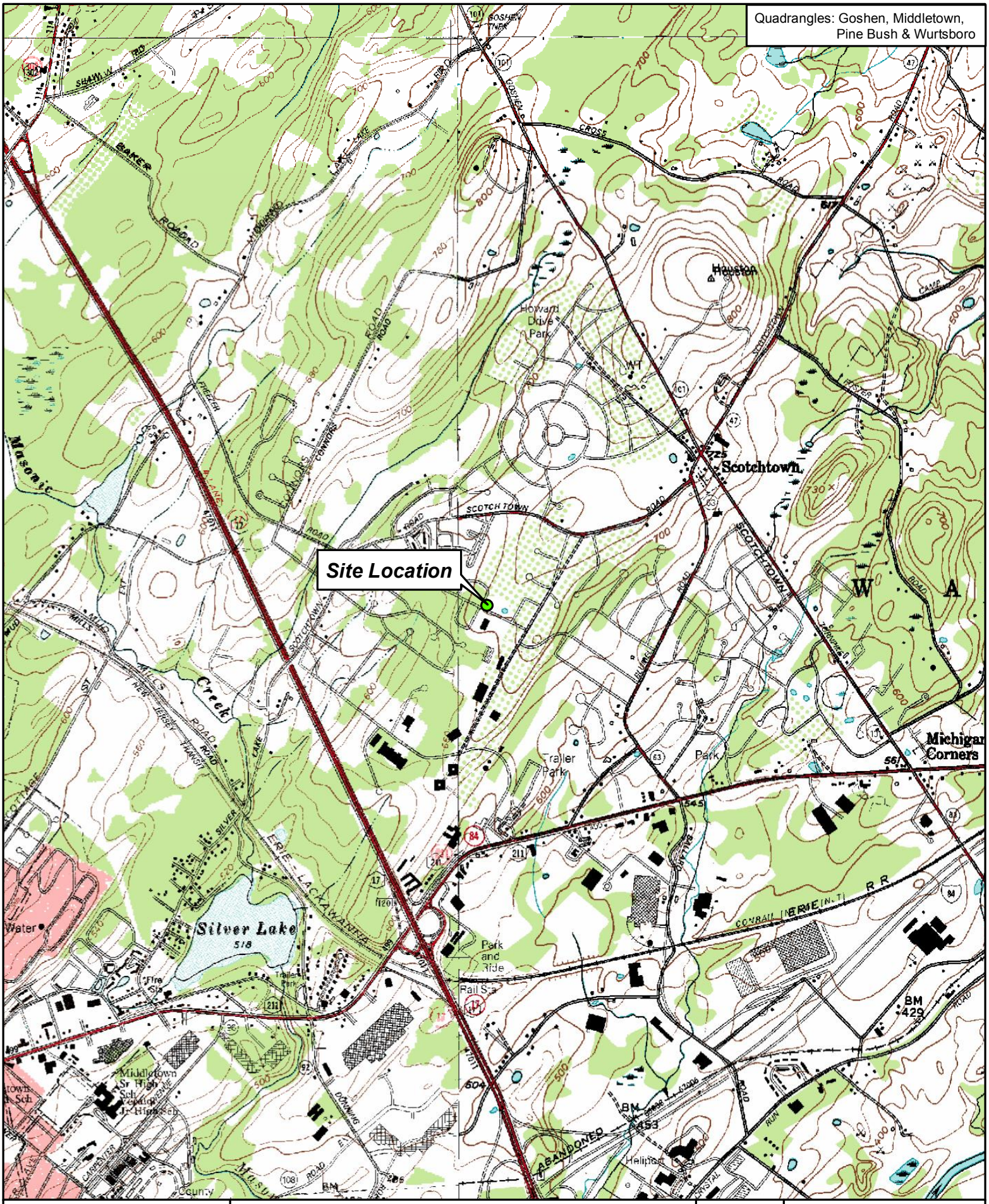
FIGURES



CHA
III Winners Circle, P.O. Box 5269 • Albany, NY 12205-0269
Main: (518)453-4500 • www.cloughharbour.com

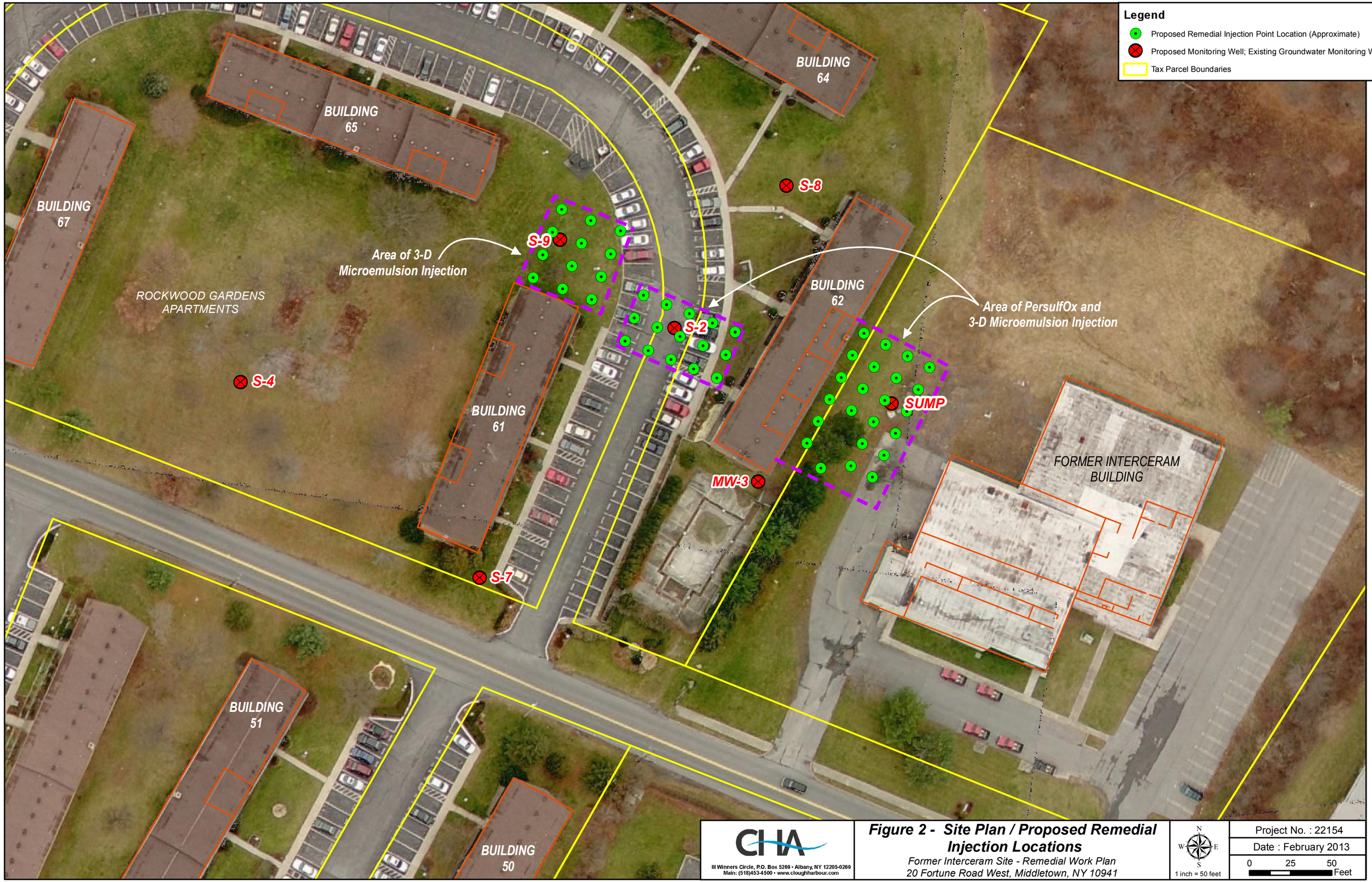
Figure 1 - Site Location

Former Interceram Site

20 Fortune Road West, Middletown, NY 10941

Project No. : 22154

Date : September 2011



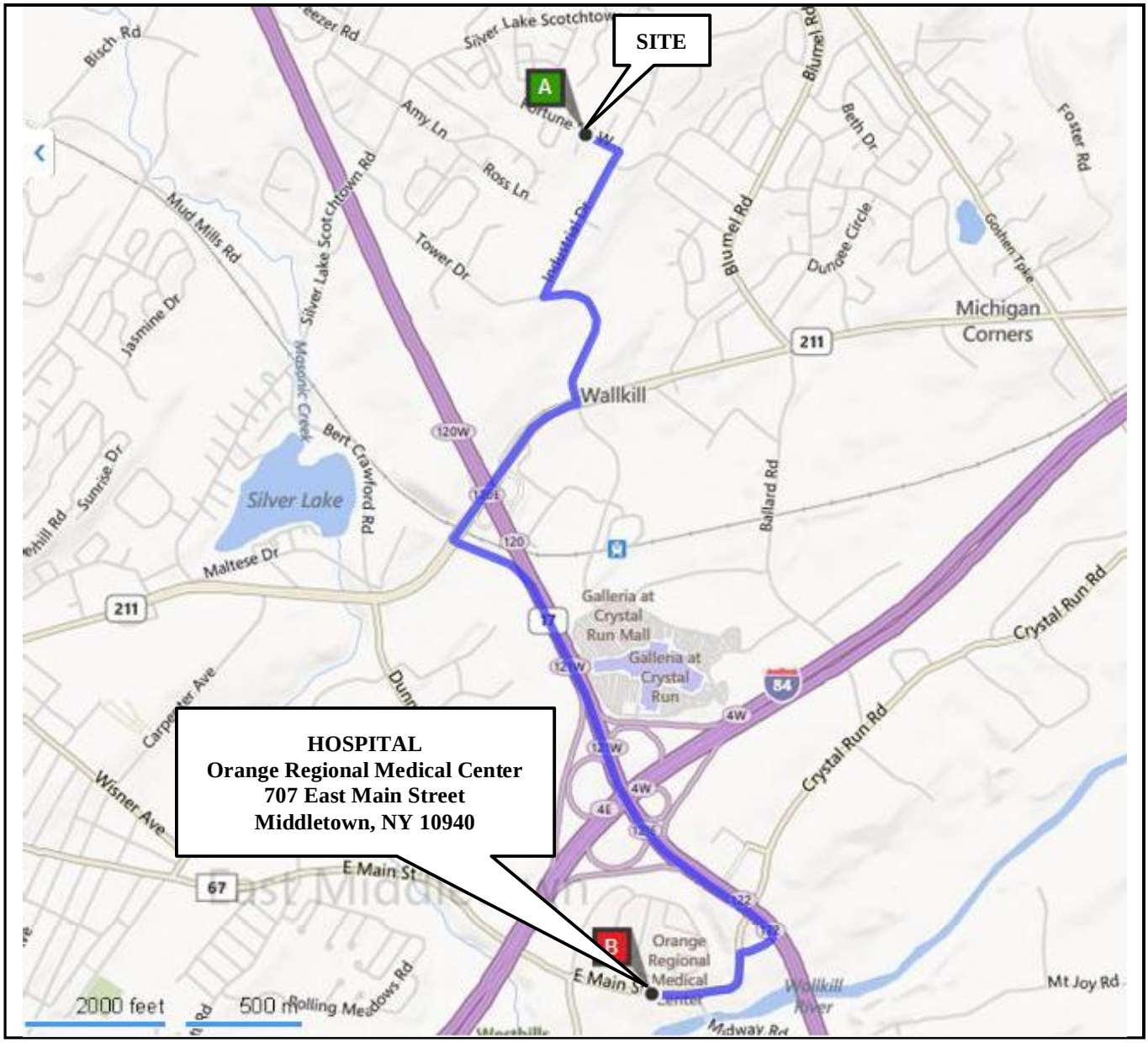
CHA
III Winners Circle, P.O. Box 5269 - Albany, NY 12205-0269
Main: (518)453-4500 - www.cloughharbour.com

Figure 2 - Site Plan / Proposed Remedial Injection Locations

Former Interceram Site - Remedial Work Plan
20 Fortune Road West, Middletown, NY 10941

N W E S
1 inch = 50 feet

Project No. : 22154
Date : February 2013
0 25 50 Feet



CHA	**Figure 3 – Route to Hospital** **Former Interceram Site** **Middletown, New York**	**Prepared for: CeramTec North America Corporation** **CHA Project: 22154** **Date: February 2014**

APPENDIX A

Technical Information and MSDS for PersulfOx™

PersulfOx™
CATALYZED PERSULFATE

A Sodium Persulfate - Based *In Situ* Chemical Oxidant with Built-In Activation

DESCRIPTION

PersulfOx™ is an *in situ* chemical oxidation reagent that destroys organic contaminants found in groundwater and soil through powerful yet controlled chemical reactions. PersulfOx is a sodium persulfate ($Na_2S_2O_8$) - based technology which employs a uniquely patented catalyst to enhance oxidative destruction of both hydrocarbon and chlorinated contaminants in the subsurface.

Traditionally, sodium persulfate is activated with the addition of heat, chelated metals, hydrogen peroxide, or base in order to generate sulfate radicals. These activation processes are inherently complex, costly and can pose additional health and safety risks. In comparison, PersulfOx is a relatively safe and easy-to-use ISCO agent.

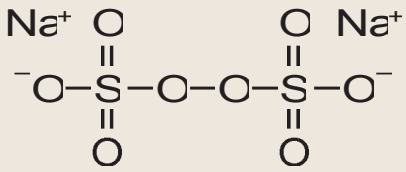


FIGURE 1:
SODIUM PERSULFATE CHEMICAL STRUCTURE

In short, PersulfOx contains a built-in catalyst which activates the persulfate component and generates contaminant destroying free radicals without the need for the addition of a separate activator.

FEATURES & BENEFITS

- Promotes rapid and sustained *in situ* oxidation of a wide-range of organic contaminants
- Provides a unique catalytic surface on which oxidants and contaminants react in a process known as "surface mediated oxidation."
- Contains built-in activation: eliminates complex and potentially hazardous chemical addition required to achieve traditional persulfate activation
- Fewer health and safety concerns than with use of traditional activation methods such as heat, chelated metals, hydrogen peroxide or base
- Single component product results in simplified logistics and application. No additional containers and/or multi-step mixing ratios required prior to application
- Contaminant oxidation performance equivalent to best alternative persulfate activation methods

FUNCTION

PersulfOx is an all-in-one product that provides powerful and highly efficient chemical oxidation performance. It is easily mixed with water and applied into the contaminated matrix using subsurface injection techniques or soil mixing tools.

The PersulfOx catalyst is a silica based, microscopic surface on which oxidants and contaminants can come together and react in a distinct process known as "surface mediated oxidation." During this process, oxidation reactions occur repeatedly on the surface of the catalyst serving several contaminant-reducing functions:

- The generation of sulfate radical and other oxidizing species
- Accelerated oxidation through the adsorption of contaminant molecules and other oxidizing species
- Catalyzes direct and free-radical-mediated oxidation by sodium persulfate

The equation below shows the net complete oxidation of toluene, a constituent of gasoline, by PersulfOx:

For a Free Consultation and Application Design for the use of PersulfOx visit www.regenesis.com

REGENESIS
Advanced Technologies for Contaminated Site Remediation

REGENESIS / 1011 Calle Sombra / San Clemente / CA 92673-6244 / USA / T: 949.366.8000 / F: 949.366.8090 / www.regenesis.com

PersulfOx

Material Safety Data Sheet (MSDS)

Last Revised: October 26, 2012

Section 1 – Supplier Information and Material Identification

Supplier:

REGENESIS
1011 Calle Sombra
San Clemente, CA 92673
Telephone: 949.366.8000
Fax: 949.366.8090
E-mail: info@regenesis.com

Chemical Synonyms:	A mixture of Sodium Persulfate [$Na_2S_2O_8$], Sodium Metasilicate [Na_2SiO_3] and Amorphous Silicon Dioxide[SiO_2].
Chemical Family:	Inorganic Chemicals
Trade Name:	PersulfOx™
Product Use:	Used to remediate contaminated soil and groundwater (environmental remediation applications)

Section 2 – Chemical Information/Other Designations

CAS No.	Chemical	Percentage
7775-27-1	Sodium Persulfate	75-95%
6834-92-0	Sodium Metasilicate, Anhydrous	0.1-10%
7631-86-9	Silicon Dioxide, Amorphous	5-25%

Section 3 – Physical Data	
Form:	Solid, free-flowing powder
Color:	White
Odor:	Odorless
Melting Point:	NA
Boiling Point:	NA
Flammability/Flash Point:	Non-combustible
Vapor Pressure:	NA
Bulk Density:	NA
Viscosity:	NA
pH (10% solution):	≈ 8.5 – 9.5 @ 25 °C
Decomposition Temperature:	Decomposition will occur upon heating.

Section 4 – Reactivity Data	
Stability:	Stable under normal conditions. Stability decreases in the presence of heat, moisture and/or contamination.
Conditions to Avoid/Incompatibility:	Acids, alkalis, halides (fluorides, chlorides, bromides and iodides), Combustible materials, most metals and heavy metals, oxidizable materials, other oxidizers, reducing agents, cleaners, and organic or carbon containing compounds, moisture, heat, flame. Contact with incompatible materials can result in a material decomposition or other uncontrolled reactions.
Hazardous Decomposition Products:	Oxygen that supports combustion and oxides of sulfur.
Polymerization	Will not occur

Section 5 – Regulations

UNITED STATES

SARA TITLE III (SUPERFUND ADMENDMENTS AND REAUTHORIZATION ACT)

Section 302 Extremely Hazardous Substances (40 CFR 335, Appendix A):	N/A
Section 311 Hazard Categories (40 CFR 370):	Fire Hazard, Immediate (Acute) Health Hazard
Section 312 Threshold Planning Quantity (40 CFR 370):	The Threshold Planning Quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs; however, this product contains the following ingredients with a TPQ of less than 10,000 lbs.: None
Section 313 Reportable Ingredients (40 CFR 372):	Not Listed

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA Designation & Reportable Quantities (RQ) (40 CFR 302.4):	Unlisted, RQ = 100 lbs., Ignitability

Section 6 – Protective Measures, Storage and Handling

Technical Protective Measures

Storage:

Oxidizer. Store in a cool, clean, and well ventilated area away from all sources of ignition and out of the direct sunlight. Store in a dry location away from heat and in temperatures less than 40 °C.

Keep away from incompatible materials and keep lids tightly closed. Do not store in improperly labeled containers.

Protect from moisture. Do not store near combustible materials. Keep containers well sealed.

Store separately from reducing materials. Avoid contamination which may lead to decomposition.

Handling:

Avoid contact with eyes, skin and clothing. Use with adequate ventilation. Wear respiratory protection if ventilation is inadequate or not available. Use eye and skin protection. Use clean plastic or stainless steel scoops only.

Do not swallow. Avoid breathing vapors, mists or dust. Do not eat, drink or smoke in the work area. Wash hands thoroughly after handling.

Label containers and keep them tightly closed when not in use.

Personal Protective Equipment (PPE)

Engineering Controls:

General room ventilation is required if used indoors. Local exhaust ventilation, process enclosures or other engineering controls may be needed to maintain airborne levels below recommended exposure limits. Avoid creating dust or mists. Maintain adequate ventilation at all times. Do not use in confined areas. Keep levels below recommended exposure limits. To determine actual exposure limits, monitoring should be performed on a routine basis. General use of persulfates will generate thermal and pressure regimes which need to mitigated during application as a precautionary measure.

Respiratory Protection:

Use NIOSH(P100) approved respirator when airborne dust is expected.

Exposure Limit

0.1 mg/m^3 (TWA) - ACGIH

Hand Protection:

Wear chemical resistant gloves (neoprene, rubber, or PVC). Thoroughly wash the outside of gloves with soap and water prior to removal.

Section 6 – Protective Measures, Storage and Handling (cont)

Eye Protection:	Wear chemical safety goggles. A full face shield may be worn in lieu of safety goggles.
Skin Protection:	Try to avoid skin contact with this product. Chemical resistant gloves (neoprene, PVC or rubber) and protective clothing should be worn during use.
Protection Against Fire & Explosion:	Product is non-explosive. In case of fire, evacuate all non-essential personnel, wear protective clothing and a self-contained breathing apparatus, stay upwind of fire, and use water to spray cool fire-exposed containers. Presence of water accelerates decomposition.

Section 7 – Hazards Identification

Potential Health Effects

Inhalation:	May be harmful and irritating.
Eye Contact:	Non-irritating (rabbit)
Skin Contact:	Non-irritating (rabbit)
Ingestion:	May be harmful if swallowed (vomiting and diarrhea).
Target Organs:	Eyes, skin, respiratory passages

Section 8 – Measures in Case of Accidents and Fire

After Spillage/Leakage:	Spilled material should be collected and put in approved DOT container and isolated for disposal. Isolated material should be monitored for signs of decomposition (fuming/smoking). If spilled material is wet, dissolve with large quantity of water and dispose as a hazardous waste. All disposals should be carried out according to regulatory agencies procedures.
Extinguishing Media:	Water; Do not use carbon dioxide or other gas filled fire extinguishers; they will have no effect on decomposing persulfates. Wear full protective clothing and self contained breathing apparatus.

First Aid

Eye Contact:	Flush eyes with running water for at least 15 minutes with eyelids held open. Seek a specialist.
Inhalation:	Remove affected person to fresh air. Seek medical attention if the effects persist.
Ingestion:	Rinse mouth with water, give two-four cups of water to dilute the chemical and seek medical attention immediately. Never give anything by mouth to an unconscious person. **Do Not** induce vomiting.
Skin Contact:	Wash affected areas with soap and a mild detergent and large amounts of water. Seek medical attention if irritation occurs or persists.

Notes to Medical Doctor: This product has low oral toxicity and is not irritating to the eyes and skin. Flooding of exposed areas with water is suggested, but gastric lavage or emesis induction for ingestions must consider possible aggravation of esophageal injury and the expected absence of system effects. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

Section 9 – Accidental Release Measures

Precautions:

Cleanup Methods: Spilled material should be collected and put in approved DOT container and isolated for disposal. Isolated material should be monitored for signs of decomposition (fuming/smoking). If spilled material is wet, dissolve with large quantity of water and dispose as a hazardous waste. All disposals should be carried out according to local regulatory agencies procedures.

Section 10 – Information on Toxicology

Toxicity Data

Oral LD_{50} (rat):	895 mg/kg
Dermal LD_{50} (rabbit):	> 10 g/kg
Inhalation LD_{50} (rat):	5.1 mg/kg

Section 11 – Information on Ecology

Ecotoxicological Information

Bluegill sunfish, 96-hour LC_{50} = 771 mg/L

Rainbow trout, 96-hour LC_{50} = 163 mg/L

Daphnia, 48-hour LC_{50} = 133 mg/L

Grass shrimp, 96-hour LC_{50} = 519 mg/L

Biotic Degradation: N/A.

Section 12 – Disposal Considerations

Waste Disposal Method: Dispose of in an approved waste facility operated by an authorized contactor in compliance with local, state and federal regulations.

Section 13 – Shipping/Transport Information

D.O.T. Shipping Name:	Oxidizing Solid, n.o.s. (a mixture of Sodium persulfate, sodium metasilicate and silicon dioxide)
UN Number:	UN 1479
Hazard Class:	5.1 (Oxidizer)
Labels:	5.1 (Oxidizer)
Packaging Group:	III

Section 14 – Other Information

HMIS® Rating	Health – 1 (Slight)	Physical Hazard – 1 (Slight)
	Flammability – 0 (None)	Lab PPE – goggles, gloves, apron, dust respirator

HMIS® is a registered trademark of the National Painting and Coating Association.

NFPA	Health – 1 (Slight)	Reactivity – 1 (Slight)
	Flammability – 0 (None)	Special - Oxidizer

Section 15 – Further Information

The information contained in this document is the best available to the supplier at the time of writing, but is provided without warranty of any kind. Some possible hazards have been determined by analogy to similar classes of material. The items in this document are subject to change and clarification as more information become available. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose.

PersulfOx™
CATALYZED PERSULFATE

Packaging, Storage, Health and Safety

PersulfOx® is a chemical oxidation technology developed by REGENESIS for the remediation of organic contaminants in soil and groundwater which employs a patented "catalyzed persulfate" technology. PersulfOx is mixed with water and applied to the contaminated matrix via mixing equipment or subsurface injection techniques. When adding the fine dry PersulfOx powder to the mix water, proper handling and dust precautions should be followed as indicated in the Health and Safety section below (also review the MSDS).

Packaging and Storage:

PersulfOx is a dry, white, and free flowing powder delivered in 5 gallon HDPE pails or 55.1 lb (25 kg) bags. It ships as a DOT 5.1 Class Oxidizer and should be handled according to rules and regulations governing oxidizers. PersulfOx should be stored in a cool (<40^{o} C), clean, dry, and well-ventilated area and away from heat and moisture. It should not be stored with combustible or reducing materials.

Health and Safety:

PersulfOx is engineered for ease of handling in the field and can be safely mixed without the risks and potential hazards associated with most other chemical oxidants such as alkaline activated sodium persulfate. However, PersulfOx is an oxidizer/catalyst powder mixture, therefore Level C proper protective equipment (PPE) is recommended for all personnel working with or in areas of potential contact with PersulfOx. In addition, PersulfOx is an alkaline product when in solution; if left to stand for a long periods, persulfate based products can become acidic. Under either alkaline or acidic conditions PersulfOx can be caustic and corrosive and can degrade equipment surfaces.

Personal Protective Equipment (PPE)

- **Eye protection** – wear well sealed goggles or a face shield (face shield recommended for full face protection)
- **Head** – hard hat when required
- **Respiratory** – use NIOSH (P100) approved respirator when airborne dust is expected
- **Hands** – wear chemical resistant gloves (neoprene, rubber, PVC)
- **Feet** – wear steel toe shoes with chemical resistant soles or neoprene boots
- **Clothing** – wear long sleeve shirts and long pants. Consider using a Tyvek® body suit, Carhartt® coverall or splash gear
- **Engineering Controls**-ventilation is required if used indoors. Controls should be maintained to avoid creation of dusts and mists

APPENDIX D

Fact Sheet for Public Notification, NYSDEC, May 2013

FACT SHEET

State Superfund Program

Receive Site Fact Sheets by *Email.* See "For More Information" to Learn How.

Site Name: Interceram
DEC Site #: 336045
Address: 20 Fortune Road West
Wallkill, NY 10940

Have questions? See "Who to Contact" Below

Interim Remedial Measure Proposed; Public Comment Period Announced

The New York State Department of Environmental Conservation (NYSDEC) is proposing an expedited cleanup for the Interceram site ("site") located at 20 Fortune Road West, Wallkill, Orange County. Please see the attached map for the site location. Documents related to the cleanup of this site can be found at the location(s) identified below under "Where to Find Information." NYSDEC is conducting a public comment period because this Interim Remedial Measure (IRM) is likely to represent a significant part of the cleanup for this site.

The site is listed as a Class "2" site in the State Registry of Inactive Hazardous Waste Sites (The Registry is a list of State Superfund sites). A Class 2 site represents a significant threat to public health or the environment; action is required.

How to Comment

NYSDEC is accepting written comments about the proposed IRM work plan for 30 days, from **May 6, 2013** through **June 5, 2013**. The proposed plan is available for review at the location(s) identified below under "Where to Find Information." Please submit comments to the NYSDEC project manager listed under Project Related Questions in the "Who to Contact" area below.

Draft Interim Remedial Measure Work Plan

An IRM is a cleanup activity that may be performed when a source of contamination or exposure pathway (the way in which a person may contact contamination) can be effectively addressed without extensive investigation and evaluation.

The draft IRM work plan describes the proposed cleanup activities that include:

Contaminants in groundwater will be treated through In-Situ Chemical Oxidation (ISCO). Specifically, persulfate will be used to destroy contaminants in three distinct areas. Two areas are located in the site parking lot and a third area is located at the western boundary of the site property.

Injection wells will be used to deliver the persulfate to the groundwater. Byproducts of the chemical oxidation process are non-toxic and include: Water, carbon dioxide, oxygen and minor concentrations of nontoxic ions and salts.

Prior to the full implementation of this technology, laboratory and on-site pilot scale studies will be conducted to more clearly define design parameters. Between the pilot and the full scale implementations, it is estimated that 50 injection points will be installed. It is estimated that the persulfate will be injected during approximately 3 separate events over several months.

Summary of the Investigation
Since 2001, groundwater samples have been collected annually from monitoring wells located in the vicinity of Building 62 on the Rockwood Gardens Apartments property. Historical groundwater analytical data since 2001 have shown fluctuating concentrations of Trichloroethene (TCE) ranging from a maximum concentration of 17,000 ppb to 290 ppb at monitoring wells located in the vicinity of Building 62. Concentrations of both TCE and cis-1,2-Dichloroethene remain above the established New York State Ambient Water Quality Standards. The site and surrounding area are served by public water and there are no private wells that use groundwater in the area.

In 2010, based on the results of soil vapor intrusion sampling sub-slab depressurization systems (SSDSs) were installed in the on-site building and in Rockwood Gardens Apartment Buildings 61, 62 and 65 to address exposure concerns within these buildings. No further action was required for buildings 64 and 66. The SSDSs in Buildings 61, 62 and 65 have been monitored periodically since installation and continue to operate.

Next Steps
NYSDEC will consider public comments, revise the plan as necessary, and approve the IRM work plan in consultation with New York State Department of Health (NYSDOH). The approved work plan will be made available to the public (see "Where to Find Information" below). After the work plan is approved, the activities detailed in the work plan will be implemented. Upon completion of the work, a Construction Completion Report will be prepared that documents the activities that were performed.

NYSDEC will keep the public informed throughout the investigation and cleanup of the site.

Background
Location Description: The Interceram site is located north of Fortune Road, in the Town of Wallkill, Orange County.

Site Features: The main site features consist of a large (20,430 sf) single story building and a parking lot that occupy most of the site.

Current Use: The site is currently used to warehouse auto and medical supplies.

Past Site Use: From 1971 to 1991, Ceramx Corp assembled, cleaned, plated (nickel and gold), and reworked fused metal and ceramic parts. Chemicals, such as trichloroethylene (TCE), potassium gold cyanide, sodium cyanide, freon (vapor degreaser), and other chemicals including various acids, were used on-site. Contamination of the soil and groundwater occurred during the storage and handling of wastes or products.

Operable Units: The site is divided into two operable units.

Operable Unit 1 (OU1) consists of soil and soil vapor intrusion issues associated with the site. Soil has been fully remediated for OU1 through thermal desorption. OU1's soil vapor intrusion issues are being mitigated through the use of SSDSs installed on buildings.

Operable Unit 2 (OU2) comprises groundwater both on-site and off-site.

Site Geology and Hydrogeology: Overburden soils consist of sand and clay till. Bedrock is comprised mostly of shale and greywacke. Groundwater flows to the southwest from the site.

Additional site details, including environmental and health assessment summaries, are available on NYSDEC's website at:
http://www.dec.ny.gov/cfmx/extapps/derexternal/haz/details.cfm?pageid=3&progno=336045

State Superfund Program: New York's State Superfund Program (SSF) identifies and characterizes suspected inactive hazardous waste disposal sites. Sites that pose a significant threat to public health and/or the environment go through a process of investigation, evaluation, cleanup and monitoring.

NYSDEC attempts to identify parties responsible for site contamination and require cleanup before committing State funds.

For more information about the SSF, visit: http://www.dec.ny.gov/chemical/8439.html

FOR MORE INFORMATION

Where to Find Information

Project documents are available at the following location(s) to help the public stay informed.

Thrall Library
11-19 Depot Street
Middletown, NY 10940
phone: (845)-341-5454

NYSDEC Region 3 Office
Attn: Please call for an appointment
21 South Putt Corners Road
New Paltz, NY 12561
phone: (845) 256-3154

Who to Contact

Comments and questions are always welcome and should be directed as follows:

Project Related Questions
Randy Whitcher
Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7014
518-402-9669
rjwhitch@gw.dec.state.ny.us

Site-Related Health Questions
Nathan Walz
New York State Department of Health
Empire State Plaza, Corning Tower, Room 1787
Albany, NY 12237
(518)-402-7880
BEEI@health.state.ny.us

We encourage you to share this fact sheet with neighbors and tenants, and/or post this fact sheet in a prominent area of your building for others to see.

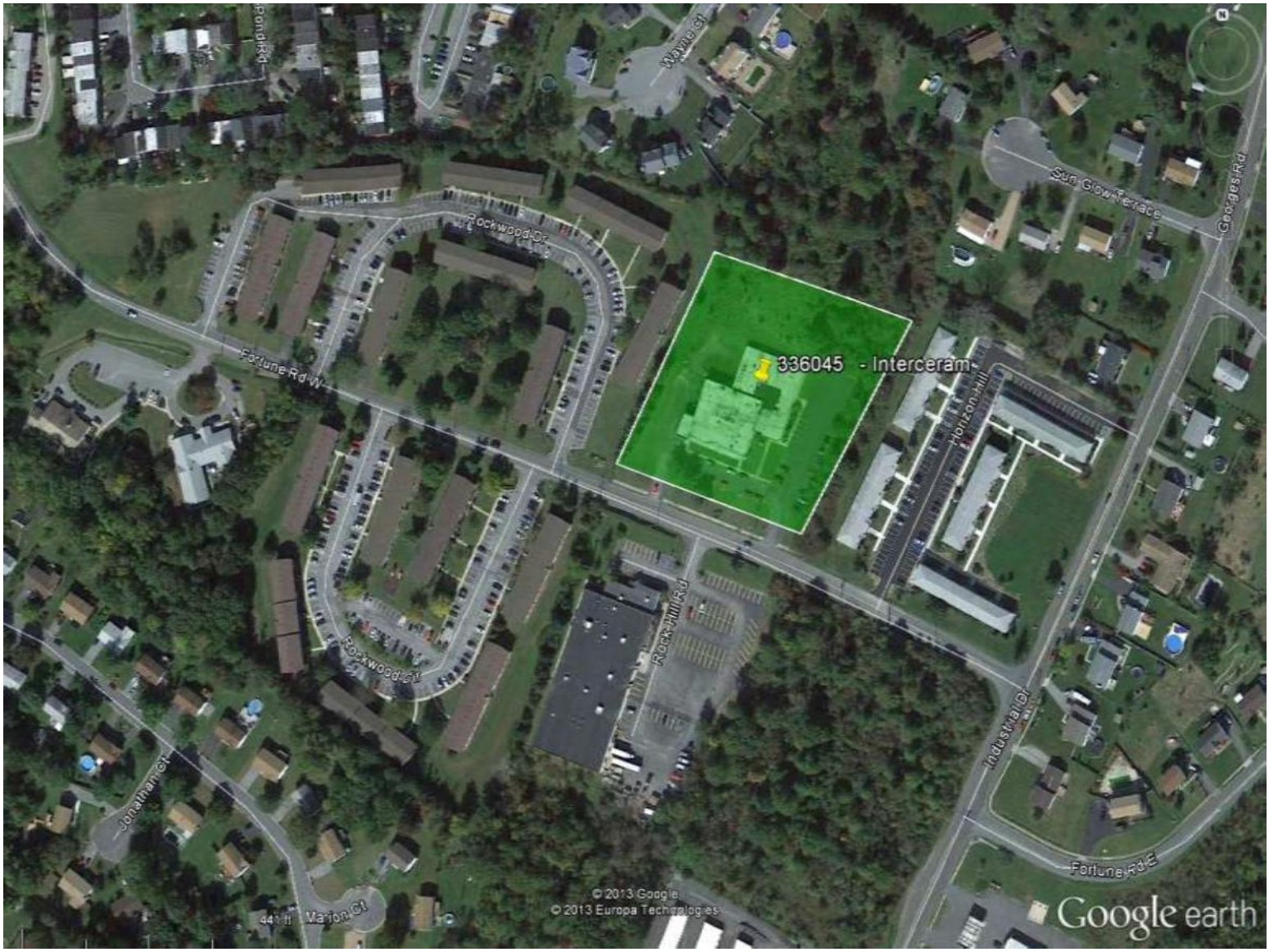
Receive Site Fact Sheets by Email

Have site information such as this fact sheet sent right to your email inbox. NYSDEC invites you to sign up with one or more contaminated sites county email listservs available at the following web page: http://www.dec.ny.gov/chemical/61092.html. It's quick, it's free, and it will help keep you *better informed*.

As a listserv member, you will periodically receive site-related information/announcements for all contaminated sites in the county(ies) you select.

Note: Please disregard if you already have signed up and received this fact sheet electronically.

SITE FIGURE



APPENDIX E

Subsurface Geophysical Investigation Report, UIT, 4/24/14

UIT
UNDERGROUND IMAGING TECHNOLOGIES
A Caterpillar Affiliate

SUBSURFACE GEOPHYSICAL INVESTIGATION

FORMER INTERCERAM SITE – ROCKWOOD GARDENS

MIDDLETOWN, NEW YORK

PREPARED FOR:
CHA CONSULTING, INC.
3 WINNERS CIRCLE
ALBANY, NEW YORK 12205

PREPARED BY:
UNDERGROUND IMAGING TECHNOLOGIES LLC
308 WOLF ROAD
LATHAM, NEW YORK 12110

MAY 15, 2014

EXECUTIVE SUMMARY

Underground Imaging Technologies LLC, a Caterpillar Affiliate (UIT), was retained by CHA Consulting, Inc. (CHA) to provide underground imaging and mapping services on the Rockwood Gardens property in conjunction with the Former Interceram project in Middletown, New York (Project Site). The purpose of this project was to locate and map underground utilities in advance of proposed remedial activities. The Project Site is specifically located along the northwest and southwest sides of Building 62 on Rockwood Drive, as specified by CHA.

On April 24, 2014, UIT staff performed the subsurface geophysical investigation in accordance with UIT's proposal dated June 17, 2013. The scope of services for this investigation included the use of multi-channel and single channel Ground Penetrating Radar (GPR), single coil Time Domain Electromagnetic Induction (TDEMI) and Radio Frequency Locators (RFLs). TDEMI, GPR and RFLs were deployed over all accessible portions of the Project Site.

The RFL utility designating was geo-referenced and directly compared to the geophysical investigation results. The utility type for features observed in the GPR and TDEMI data sets was identified based on correlation with the designating results. In areas of dense subsurface utility configuration, it was difficult to correlate and identify individual utilities visible in the geophysical data with utilities identified through designating and the final identification by type may not represent actual conditions. Identified utilities noted at the Project Site include electric, gas, telecommunication and water. Termination points of some of the identified utilities could not always be located within the limits of the Project Site. Geophysical investigation results are included in this report as Appendix A.

Several unknown linear features, geophysical area targets and point targets were identified in the geophysical data that could not be attributed to any existing information. These features may be associated with the underground utility network or other previously unknown structures. Unknown linear features are denoted by a magenta line, geophysical area targets are denoted by a magenta hatched box and geophysical point targets are shown as a magenta symbol on the attached mapping.

The results of UIT's subsurface investigation will provide CHA with a more accurate depiction of subsurface utilities present at the Project Site.

TABLE OF CONTENTS

1.0 INTRODUCTION

Underground Imaging Technologies LLC, a Caterpillar Affiliate (UIT), was retained by CHA Consulting, Inc. (CHA) to provide underground imaging and mapping services on the Rockwood Gardens property in conjunction with the Former Interceram project in Middletown, New York (Project Site). The purpose of this project was to locate and map underground utilities in advance of proposed remedial activities. The Project Site is specifically located along the northwest and southwest sides of Building 62 on Rockwood Drive, as specified by CHA.

2.0 SCOPE OF WORK

UIT completed a subsurface investigation of the Project Site using geophysical tools to identify subsurface features within the client-defined boundaries.

The scope of work included:

- Subsurface Investigation of the Project Site using the following techniques:
    - Review of Existing Records received from CHA
    - TerraVision II™ multi-channel Ground Penetrating Radar (GPR)
    - Time Domain Electromagnetic Induction (TDEMI)
    - Radio Frequency Locators (RFLs)
- QA/QC by senior UIT staff member
- Preparation of geo-referenced maps of subsurface results

3.0 GEOPHYSICAL INVESTIGATION

3.1 Advanced Geophysical Instrumentation

Ground Penetrating Radar
UIT used a 14-channel TerraVision II™ GPR System for geophysical imaging and mapping. This system is capable of simultaneously collecting geophysical data over an approximately five (5) foot wide swath and allows UIT's data analysts to construct a geo-referenced, three-dimensional representation of subsurface infrastructure and other unknown features at the Project Site. Depending on the soils at the Project Site, the penetration depth of the GPR ranges from approximately three (3) feet to over eight (8) feet. GPR generally requires that the diameter of the utility in inches be greater than or equal to the depth of the utility in feet in order to be detected. GPR is capable of detecting metallic and non-metallic utilities such as steel, ductile iron or PVC pipe but is not capable of independently determining the utility type (electric, gas, water, etc.). GPR is the only technique included in this scope of work that can provide reliable depth estimates of subsurface features but cannot determine the diameter of the utility.

Time Domain Electromagnetic Induction
UIT also utilized a Geonics EM61 MK2 TDEMI System to map the subsurface at the Project Site. The TDEMI unit consists of a coil set mounted on a nonconductive acquisition cart. This system does not require a connection to the targeted utilities and can detect both ferrous and non-ferrous buried metallic objects such as pipes and cables as well as changes in soil conductivity, which could be caused by trenching or excavation. The TDEMI is generally able to detect metallic utilities at depths of less than three (3) feet to over ten (10) feet. This technology cannot provide reliable depth estimates.

Subsurface Feature / Utility Mapping
UIT designated conductive subsurface utilities at the Project Site using Radio Frequency Locators (RFLs). RFLs are capable of detecting a current that is typically imparted onto a utility through a direct connection or induced onto it with a transmitter. In these modes, these tools provide an accurate location for the utility and allow for its type (gas, electric, water, etc.) to be determined. RFLs are generally not capable of providing reliable target depths.

3.2 Data Collection Methodology

UIT field staff performed the geophysical investigation at Rockwood Gardens on April 24, 2014. Geophysical data was collected using the TerraVision II™ GPR system and the TDEMI system over all accessible portions of the Project Site however; physical obstructions may have prevented full coverage in some areas. Conductive subsurface utilities were designated at the Project Site using RFLs and were marked in the field in accordance with American Public Works Association (APWA) standard color code. RFLs were also used in passive mode to sweep the area and locate any other subsurface utilities where a direct connection could not be located.

Positioning System Data
Positioning data was acquired using a Trimble Real Time Kinematic Global Navigation Satellite System (RTK-GNSS) or Robotic Total Station (RTS). These systems were tied into the New York State Plane Coordinate System, East Zone, US Survey Foot, with the NAD1983 horizontal datum. Locations of utilities designated with RFLs were geo-referenced with the RTK-GNSS or RTS systems while the GPR and TDEMI data was collected simultaneously with horizontal positioning data. The data sets were merged to produce a geo-referenced data file.

3.3 Geophysical Investigation Results

Geophysical investigation results are included as Appendix A. Features shown on this map represent a compilation of the GPR and TDEMI data sets along with the geo-referenced designating results overlain on aerial imagery. The endpoints of some features have been marked with a red circle (identified in the legend as End of Information (EOI)) indicating the limits of the target's signature as interpreted from the data. Termination points of some of the identified utilities could not always be located within the limits of the Project Site. The EOI identifier should not be interpreted as a termination point of any individual utility. Variability in subsurface conditions and inherent limitations of geophysical methods may have prevented the continuous detection of some features.

Following the interpretation of the GPR and TDEMI data, UIT compared subsurface features detected in the geophysical data to the utility designating and survey data. The utility type for features observed in the GPR and TDEMI data sets was identified based on correlation with the designating results. Identified utilities noted at the Project Site include electric, gas, telecommunication and water. In areas of dense subsurface utility configuration, the identification of individual utilities visible in the GPR and TDEMI data was difficult by correlation to the designating results and may not represent actual conditions.

Unknown linear features represent subsurface features observed in the GPR and TDEMI data which could not be correlated to designated utilities or to any surface features that could be associated with underground utilities and as such, their specific nature could not be determined. These features may represent previously unmapped or mis-located utilities or other subsurface linear objects and are denoted by a magenta line on the attached mapping.

Geophysical point targets shown on the attached mapping are small, metallic, localized features that could not be attributed any known existing features. These features may represent buried manhole covers, debris or other small, non-linear features.

Geophysical area targets shown on the attached mapping as hatched boxes represent areas with sufficiently contrasting geophysical characteristics compared to the surrounding soil. These areas could represent trenching associated with subsurface utility installation, transition zones between two soil layers or other subsurface planar features. It is possible that subsurface utilities exist in these areas but could not be mapped.

Depth values are provided where subsurface features were observed in the GPR data. As the TDEMI system is not capable of providing reliable depth estimates, depths could not be determined in areas where either: (1) GPR data was not collected; or (2) features were present in TDEMI data or were designated using RFLs but not observed in the GPR data. The interpreted results of the geophysical data and utility designation results were then integrated into the final deliverable.

The results of the geophysical investigation benefited from the use of multiple geophysical methods. This approach allowed for a more complete assessment of the Project Site and improved the confidence of mapped features where coincident responses were detected with multiple instruments. Numerous subsurface features were mapped at the Project Site, including: identifiable utilities, unknown linear features, geophysical area targets, and point targets. The results of UIT's subsurface investigation will provide Campos with a more accurate depiction of subsurface utilities present at the Project Site.

5.0 STATEMENT OF LIMITATIONS

The use of near surface geophysical means and methods such as radio frequency locators, time domain EMI and ground penetrating radar have a well-established cost benefit ratio. These geophysical methods, when used correctly and under the right conditions, typically provide a high level of reliability. With the use of GPR, it is not uncommon to find and/or identify subsurface anomalies or unknown linear objects not otherwise accounted for by conventional nondestructive locating methods or subsurface utility engineering practices.

However, surface and subsurface conditions and soil electrical properties (conductivity and dielectric contrast) may limit investigation depths of the geophysical surveys, as well as the ability of some tools to achieve sufficient contrast between similar subsurface materials, i.e., clay pipe in a clayey soil. The possibility exists that some or all targets may be located at greater depths than the maximum achievable investigation depths exists, or that some of these same targets may not have electrical properties that enable them to be differentiated sufficiently from the subsurface soils.

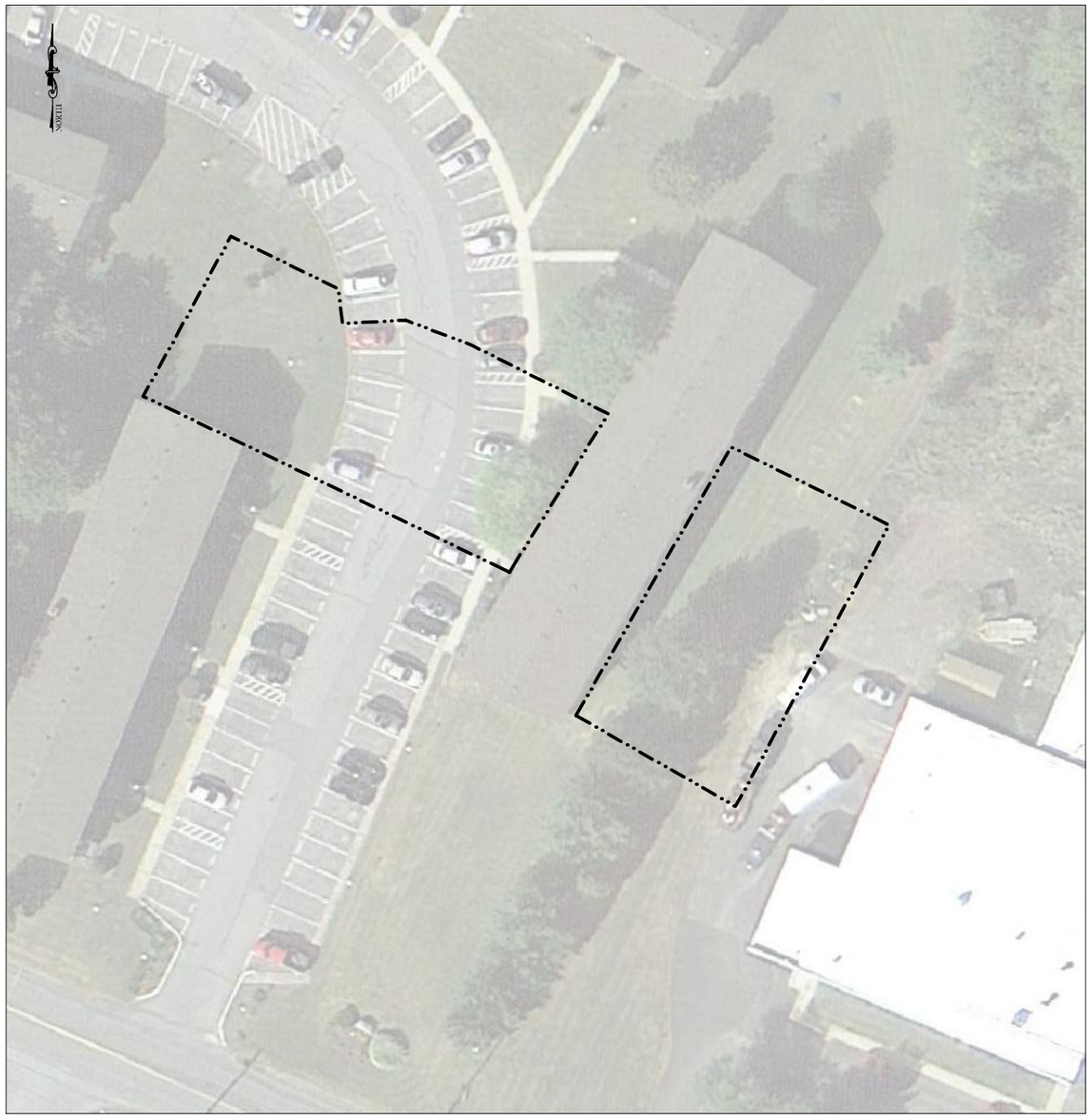
The parties understand that no method can be as exact and reliable as an actual excavation and physical examination of all areas under examination. In areas deemed critical, the owner/engineer is encouraged to validate the exact location of identified, or unidentified, subsurface targets. The number and locations of these is the responsibility of the owner/engineer. It is understood that geophysical mapping performed by UIT does not relieve Campos or its subcontractors from complying with the One-Call Notification System in accordance with state statutes.

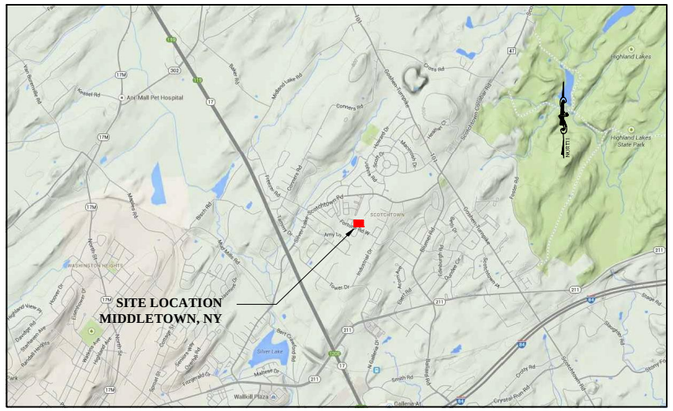
Therefore, the UIT Team individually, nor UIT and CHA collectively, will not be liable for any damages that occur from excavations based on the results of this survey. Although sound technical procedures and prudent application of oversight are warranted by UIT, to the extent possible given the data quality and quantity supplied, due caution should be used when performing any subsurface excavation based on results from this survey. The client and owner understand and agree that any action the client or owner may take based on the data and information supplied hereunder shall be at client's and/or owner's own responsibility and sole risk.

APPENDIX A

GEOPHYSICAL INVESTIGATION RESULTS
ROCKWOOD GARDENS

SUBSURFACE GEOPHYSICAL INVESTIGATION
FORMER INTERCERAM SITE AND ROCKWOOD GARDENS
MIDDLETOWN, ORANGE COUNTY, NEW YORK





LOCATION MAP
(NOT TO SCALE)

DRAWING INDEX

DRWG.#	TITLE	REV#	DATE
T1	TITLE SHEET	0	5/15/14
GN1	GENERAL NOTES & LEGEND	0	5/15/14
M1	MAPPING SHEET	0	5/15/14

REFER TO SHEET GN1 FOR NOTES, CONDITIONS AND UNDERSTANDING

UIT LLC

UNDERGROUND IMAGING TECHNOLOGIES
A Caterpillar Affiliate

308 WOLF ROAD
LATHAM, NEW YORK 12110
TEL: (518) 783-9848
FAX: (518) 783-9634

LEGEND

- E — UNDERGROUND ELECTRIC LINE
- G — UNDERGROUND GAS LINE
- T — UNDERGROUND TELECOM
- W — UNDERGROUND WATER LINE
- U — UNKNOWN LINEAR FEATURE
- INVESTIGATION AREA (APPROXIMATE)
- GAS VALVE
- LIGHT POLE
- MONITORING WELL
- GEOPHYSICAL POINT TARGET
- GEOPHYSICAL AREA TARGET
- 2.1 — DEPTH OF FEATURE BELOW GROUND SURFACE (FEET)
- END OF INFORMATION (GEOPHYSICAL)

CLIENT

CHA CONSULTING, INC.
3 WINNERS CIRCLE
ALBANY, NY 12205

DRAWN: JFK DATE: 5/15/14
REVIEWED: JDR DATE: 5/15/14

PROJECT TITLE
ROCKWOOD GARDENS

PROJECT NUMBER
UIT PROJECT NUMBER 134-001

SCALE	SHEET NUMBER
1" = 50' [11x17]	T1
PLOT DATE	
5/15/14	

FILE NAME
134-001 CAD_CHA

NOTES:

1. UNDERGROUND UTILITIES AND FEATURES WERE MAPPED USING RADIO FREQUENCY PIPE AND CABLE LOCATORS (RFL), GROUND PENETRATING RADAR (GPR) AND TIME-DOMAIN ELECTROMAGNETIC INDUCTION (EMI). OTHER BURIED UTILITIES MAY BE PRESENT BUT WERE NOT DETECTED DUE TO LIMITATIONS OF THE RFL, GPR AND EMI SYSTEMS, UNFAVORABLE SOIL CONDITIONS, SITE ACCESS, AND/OR DENSE UTILITY INFRASTRUCTURE; THEREFORE, 100% DETECTION IS NOT GUARANTEED. CAUTION SHOULD BE USED WHEN EXCAVATING IN THE VICINITY OF MAPPED FEATURES.
2. POSITION OF GEOPHYSICAL FEATURES CANNOT BE GUARANTEED WITHOUT EXPOSURE.
3. TARGETS WITH LATERAL EXTENTS OF LESS THAN 3 FEET AS OBSERVED IN GEOPHYSICAL DATA WERE NOT MAPPED.
4. PLOTTED UTILITY POSITIONS AND DEPTHS REPRESENT LOCATION OF MOST APPROPRIATE INTERPRETED GEOPHYSICAL RESPONSE. THIS RESPONSE IS GENERALLY PRESENT OVER THE TOP CENTER OF THE TARGET BUT MAY BE LOCATED OFF-CENTER DEPENDING ON SIGNAL QUALITY AND THE EFFECTS OF LOCAL INTERFERENCE. FEATURE MAY BE WIDER THAN PLOTTED LINE (E.G. DUCT BANKS, LARGE CONDUIT).
5. UTILITIES MAY BE INSTALLED WITHIN A DUCT BANK. DUE TO THE LIMITATIONS OF GEOPHYSICAL EQUIPMENT AND THE LOCATION OF FEATURES WITHIN THE DUCT BANK, THE ACTUAL HORIZONTAL AND VERTICAL DIMENSIONS OF THE DUCT BANK SYSTEM (AS OBSERVED IN GEOPHYSICAL DATA) MAY VARY.
6. DUE TO LIMITATIONS OF GEOPHYSICAL METHODS IT IS NOT ALWAYS POSSIBLE TO DISCRIMINATE BETWEEN UTILITIES AND OTHER BURIED FEATURES; THEREFORE IT IS POSSIBLE THAT SOME PLOTTED FEATURES MAY REPRESENT OBJECTS OTHER THAN UTILITIES.
7. DEPTHS SHOWN FOR UTILITIES ARE IN FEET BELOW EXISTING GROUND SURFACE AT TIME OF SURVEY.
8. DEPTH TO TOP OF UTILITY (WHERE POSTED) IS ESTIMATED BASED ON GPR DATA USING AN ASSUMED SOIL DIELECTRIC VALUE OF 9. DEPTHS ARE GENERALLY ACCURATE TO WITHIN 10%. HOWEVER IN SOME SOIL CONDITIONS, THIS ERROR MAY BE GREATER.
9. DUE TO SITE SPECIFIC CONDITIONS, GPR SIGNAL PENETRATION DEPTH IS APPROXIMATELY 6-7 FEET. UTILITIES BELOW THIS DEPTH WERE NOT CONSISTENTLY DETECTED WITH GPR. THERE MAY BE OTHER UTILITIES PRESENT AT THE SITE BELOW THIS DEPTH THAT WERE NOT DETECTED AND THEREFORE ARE NOT PLOTTED ON THESE MAPS.
10. ADDITIONAL DEPTH INFORMATION MAY BE AVAILABLE UPON REQUEST.
11. EMI SIGNAL RESPONSE IS DEPENDENT UPON THE COMPOSITION, SIZE, AND ORIENTATION OF TARGET FEATURES.
12. GEOPHYSICAL AREA TARGETS REPRESENT AREAS OF CONTRASTING DATA SIGNATURES RELATED TO SURROUNDING SOILS AND COULD NOT BE ATTRIBUTED TO ANY AVAILABLE INFORMATION. THESE FEATURES MAY REPRESENT UTILITY DUCT BANKS, TRENCHES, OR OTHER SUBSURFACE OBJECTS.
13. GEOPHYSICAL POINT TARGETS ARE FEATURES THAT WERE DETECTED WITH THE EMI, HAVE HIGH METALLIC CONTENT, APPEAR TO BE ISOLATED AND CANNOT BE ATTRIBUTED TO ANY AVAILABLE INFORMATION.
14. "EOI" - END OF INFORMATION SYMBOL INDICATES THE POINT AT WHICH THE INTERPRETABLE GEOPHYSICAL SIGNAL OF A TARGET TERMINATES. THE TARGET MAY CONTINUE, BUT WAS NOT OBSERVED IN THE GEOPHYSICAL DATA BEYOND THESE LIMITS.
15. ONLY THOSE AREAS DENOTED WITHIN THE PROJECT SITE LIMITS WERE INVESTIGATED WITH GEOPHYSICAL METHODS. NO CLAIMS TO UTILITY POSITION ARE MADE OUTSIDE OF THESE BOUNDARIES.
16. SURFACE OBSTRUCTIONS SUCH AS UTILITY POLES, LANDSCAPING AND HEAVY VEGETATION LIMITED THE DATA COLLECTION AREA.
17. PROJECTS COORDINATES ARE IN NAD83 NY STATE PLANE, EAST ZONE, U.S. SURVEY FEET.
18. AERIAL PHOTO IMAGE FROM GOOGLE EARTH. IMAGERY DATE 9/19/2013.
19. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ONE-CALL SERVICES AS REQUIRED BY STATE AND/OR LOCAL ORDINANCES.

PROJECT DIRECTORY	
SITE ADDRESS	ROCKWOOD GARDENS ROCKWOOD DRIVE MIDDLETOWN, NY 10940
CLIENT	CHA CONSULTING, INC. 3 WINNERS CIRCLE ALBANY, NY 12205
CONTACT	JOHN FAVREAU
SUBSURFACE UTILITY MAPPER	UIT LLC 308 WOLF ROAD LATHAM, NY 12110
CONTACT	JOE KING

DISCLAIMER: 3D UNDERGROUND IMAGING CONDITIONS AND UNDERSTANDINGS

ALTHOUGH GEOPHYSICAL METHODS PROVIDE A LEVEL OF ASSURANCE FOR LOCATION OF SUBSURFACE OBJECTS, THE POSSIBILITY EXISTS THAT NOT ALL FEATURES CAN OR WILL BE IDENTIFIED. THE PARTIES UNDERSTAND THAT NO METHOD CAN BE AS EXACT AND RELIABLE AS AN ACTUAL EXCAVATION AND PHYSICAL EXAMINATION THAT THOROUGHLY COVERS THE SURVEYED SITE. UIT WILL NOT BE LIABLE FOR ANY DAMAGES THAT OCCUR FROM EXCAVATIONS BASED ON THE RESULTS AND DELIVERABLES GENERATED FROM THIS SUBSURFACE IMAGING AND MAPPING PROJECT. DUE CAUTION SHOULD BE USED WHEN PERFORMING ANY SUBSURFACE EXCAVATION BASED ON RESULTS INTERPRETED FROM THIS GEOPHYSICAL AND MAPPING. CLIENT UNDERSTANDS AND AGREES THAT ANY ACTION CLIENT MAY TAKE BASED ON THE DATA AND INFORMATION SUPPLIED HEREUNDER SHALL BE AT CLIENT'S OWN RESPONSIBILITY AND SOLE RISK. CLIENT ALSO UNDERSTANDS THAT THEY ARE RESPONSIBLE FOR MAKING APPROPRIATE ONE-CALL NOTIFICATIONS IN ACCORDANCE WITH APPLICABLE PUBLIC LAWS PRIOR TO EXCAVATION. SURFACE AND SUBSURFACE CONDITIONS AND SOIL ELECTRICAL PROPERTIES (CONDUCTIVITY AND DIELECTRIC CONTRAST) MAY LIMIT INVESTIGATION DEPTHS OF THE GEOPHYSICAL SURVEY, AS WELL AS THE ABILITY TO ACHIEVE SUFFICIENT CONTRAST BETWEEN SIMILAR SUBSURFACE MATERIALS, I.E., CLAY PIPE IN A CLAYEY SOIL. THE POSSIBILITY EXISTS THAT SOME OR ALL TARGETS MAY BE LOCATED AT GREATER DEPTHS THAN THE MAXIMUM ACHIEVABLE INVESTIGATION DEPTHS, OR THAT SOME OF THESE SAME TARGETS MAY NOT HAVE ELECTRICAL PROPERTIES THAT ENABLE THEM TO BE DIFFERENTIATED SUFFICIENTLY FROM THE SUBSURFACE SOILS.

UIT LLC

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CLIENT

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3 WINNERS CIRCLE
ALBANY, NY 12205

DRAWN: JFK DATE: 5/15/14
REVIEWED: JDR DATE: 5/15/14

PROJECT TITLE

ROCKWOOD GARDENS

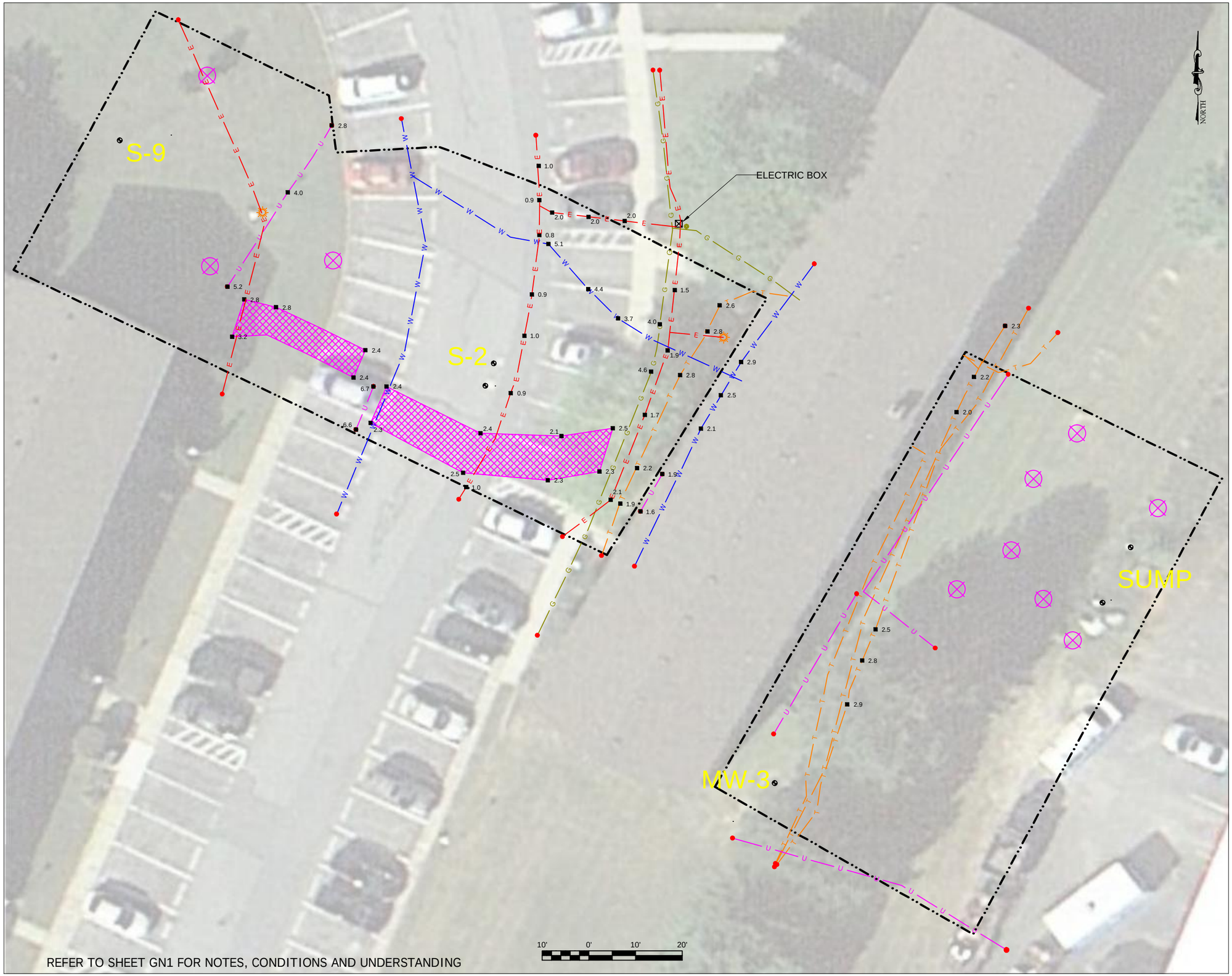
PROJECT NUMBER

UIT PROJECT NUMBER 134-001

SCALE	SHEET NUMBER
N/A	GN1
PLOT DATE	
5/15/14	

FILE NAME

134-001 CAD_CHA



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CHA

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3 WINNERS CIRCLE
ALBANY, NY 12205

DRAWN: JFK DATE: 5/15/14
REVIEWED: JDR DATE: 5/15/14

PROJECT TITLE
ROCKWOOD GARDENS

PROJECT NUMBER
UIT PROJECT NUMBER 134-001

SCALE	SHEET NUMBER
1" = 20' [11x17]	M1
PLOT DATE	
5/15/14	

FILE NAME
134-001 CAD_CHA

APPENDIX F

Representative Photographs

Photo 1 – View of typical PersulfOx™ mixing operations

Photo 2 – View of typical PersulfOx™ injection setup, near the SUMP

CHA	**PHOTOGRAPH LOG** **Former Interceram Site** **Final Engineering Report** **20 Fortune Road West** **Middletown, New York**

Photo 3 – View of typical PersulfOx™ injection setup, in area of monitoring well S-2

Photo 4 – View of typical 3DME injection setup, in area of monitoring well S-9

APPENDIX G

Groundwater Sampling Logs

CHA	**Low-Flow Sampling Log**	**Sample/Well Designation:** S-2/CHA-1
Project Name: Former Interceram Site		Logged By: Favreau/Pierce
Project Location: 20 Fortune Road West, Middletown, NY		Date: 8/28/2014
Project Number: 28574.2000.31000		Screen Interval: ft. from TOC

Purge Information:

Depth to Water: 5.82 ft. from TOC

Purging Water Level: 6.32 ft. from TOC

Pumping Rate: 50 ml/min

Pump Placement: 15.5 ft. from TOC

Method of Purging: ☐Submersible ☐ Dedicated ☒ Other: Bladder

Stabilization Criteria:
****DO ± 10%** ****SEC ± 3%** Turb. ± 10% ORP ± 10 mv pH ± 0.1 unit

Field Analysis: Started purging at 14:18

Volume Purged (L)										
Time	14:35	14:40	14:45	14:50	14:55	15:00				
ORP/EH (mV)	282.2	279.2	277.0	273.8	271.0	268.8				
pH	6.45	6.42	6.37	6.34	6.30	6.30				
Cond. (MS/CM)	24.780	27.030	26.790	26.670	26.550	26.520				
Turbidity (NTU)	>1000	>1000	>1000	>1000	>1000	>1000				
D.O. (mg/L)	0.77	0.60	0.49	0.38	0.37	0.37				
Temperature (°C)	24.85	23.71	24.38	24.19	24.23	23.88				
Drawdown (ft)	0.08	0.23	0.32	0.46	0.50	0.50				

Total Volume Purged: 0.25 gal.

Total Purge Time: 42 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3 + 3

Sampling Time: 15:00/14:30

Sample Analyses: TCL VOCs

Comments: Water is very turbid, light brown, no sheen, mild effervescence, and slight odor.

Duplicate, CHA-1, was collected here.

CHA	**Low-Flow Sampling Log**	**Sample/Well Designation:** S-4
Project Name: Former Interceram Site		Logged By: Favreau/Pierce
Project Location: 20 Fortune Road West, Middletown, NY		Date: 8/28/2014
Project Number: 28574.2000.31000		Screen Interval: ft. from TOC

Purge Information:

Depth to Water: 7.0 ft. from TOC

Purging Water Level: 7.40 ft. from TOC

Pumping Rate: 40 ml/min

Pump Placement: 10 ft. from TOC

Method of Purging: ☐Submersible ☐ Dedicated ☒ Other: Bladder

Stabilization Criteria:
****DO ± 10%** ****SEC ± 3%** Turb. ± 10% ORP ± 10 mv pH ± 0.1 unit

Field Analysis: Started purging at 11:20

Volume Purged (L)										
Time	11:30	11:35	11:40	11:45	11:50	11:55				
ORP/EH (mV)	235	226.9	220.3	214.4	210.5	205.4				
pH	6.96	6.91	6.88	6.82	6.85	6.85				
Cond. (MS/CM)	0.762	0.762	0.762	0.762	0.763	0.763				
Turbidity (NTU)	NM	NM	>1000	>1000	>1000	800				
D.O. (mg/L)	2.14	1.67	1.50	1.41	1.34	1.29				
Temperature (°C)	14.96	14.68	14.56	14.55	14.58	14.68				
Drawdown (ft)	0.14	0.2	0.27	0.3	0.35	0.4				

Total Volume Purged: 0.5 gal.

Total Purge Time: 35 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3

Sampling Time: 12:00

Sample Analyses: TCL VOCs

Comments: Water is very turbid, no sheen, no effervescence, and no odor.

CHA	**Low-Flow Sampling Log**	**Sample/Well Designation:** S-7
Project Name: Former Interceram Site		Logged By: Favreau/Pierce
Project Location: 20 Fortune Road West, Middletown, NY		Date: 8/28/2014
Project Number: 28574.2000.31000		Screen Interval: ft. from TOC

Purge Information:

Depth to Water: 6.79 ft. from TOC

Purging Water Level: 7.61 ft. from TOC

Pumping Rate: 50 ml/min

Pump Placement: 12 ft. from TOC

Method of Purging: ☐Submersible ☐ Dedicated ☒ Other: Bladder

Stabilization Criteria:

****DO ± 10%** ****SEC ± 3%** Turb. ± 10% ORP ± 10 mv pH ± 0.1 unit

Field Analysis: Started purging at 12:25

Volume Purged (L)										
Time	12:35	12:40	12:45	12:50	12:55	13:00				
ORP/EH (mV)	228.1	217.9	208.0	199.4	192.5	187.8				
pH	7.05	6.98	6.96	6.97	6.95	6.92				
Cond. (MS/CM)	0.675	0.674	0.673	0.673	0.673	0.673				
Turbidity (NTU)	478	474	375	315	240	199				
D.O. (mg/L)	1.84	1.52	1.41	1.35	1.38	1.42				
Temperature (°C)	15.99	15.66	15.66	15.85	15.85	15.82				
Drawdown (ft)	0.21	0.53	0.63	0.71	0.81	0.81				

Total Volume Purged: 0.25 gal.

Total Purge Time: 35 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3

Sampling Time: 13:05

Sample Analyses: TCL VOCs

Comments: Water is very turbid, light brown, no sheen, no effervescence, and no odor.

CHA	**Low-Flow Sampling Log**	**Sample/Well Designation:** S-8
Project Name: Former Interceram Site		Logged By: Favreau/Pierce
Project Location: 20 Fortune Road West, Middletown, NY		Date: 8/28/2014
Project Number: 28574.2000.31000		Screen Interval: ft. from TOC

Purge Information:

Depth to Water: 6.90 ft. from TOC

Purging Water Level: 7.50 ft. from TOC

Pumping Rate: 55 ml/min

Pump Placement: 11.40 ft. from TOC

Method of Purging: ☐Submersible ☐ Dedicated ☒ Other: Bladder

Stabilization Criteria:
****DO ± 10%** ****SEC ± 3%** Turb. ± 10% ORP ± 10 mv pH ± 0.1 unit

Field Analysis: Started purging at 9:47

Volume Purged (L)										
Time	9:55	10:00	10:05	10:10	10:15	10:20	10:25			
ORP/EH (mV)	229.6	220.0	213.1	207.3	202.8	198.4	198.3			
pH	6.49	6.51	6.55	6.60	6.64	6.68	6.71			
Cond. (MS/CM)	0.431	0.430	0.430	0.429	0.430	0.430	0.432			
Turbidity (NTU)	110	82.9	62.0	56.0	37.9	28.0	18.2			
D.O. (mg/L)	1.49	1.23	1.22	1.28	1.36	1.34	1.34			
Temperature (°C)	15.41	15.24	14.97	15.05	15.21	15.43	15.68			
Drawdown (ft)	0.05	0.15	0.30	0.45	0.60	0.60	0.60			

Total Volume Purged: 0.5 gal.

Total Purge Time: 38 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3

Sampling Time: 10:30

Sample Analyses: TCL VOCs

Comments: Water is clear, no sheen, no effervescence, and no odor.

CHA	**Well Sampling/ Development Log**	**Sample/Well Designation:** S-9
Project Name: Former Interceram Site		Logged By: Favreau/Pierce
Project Location: 20 Fortune Road West, Middletown, NY		Date: 8/28/2014
Project Number: 28574.2000.31000		Screen Length: _____

Purge Information:

(1) Depth to Bottom of Well: 15 ft. (from TOC)
(2) Depth to Water: 6.41 ft. (from TOC)
(3) Column of Water: 8.59 ft. [(1) – (2)]
(4) Well Riser Diameter: 1 in.
(5) Volume Conversion: 0.041 gal./ft. (see below)
(6) 1 Well Volume: 0.35 gal. [(3) x (5)]

Method of Purging: ☐ WaTerra ☒ Bailer ☐Submersible ☐ Other: _____

Volume Conversion: (gal./ft.)
2" = 0.163 4" = 0.653 6" = 1.469 8" 2.611 10" = 4.08

Field Analysis: Started purging at 15:00

Volume Purged (gal.)	0.1									
Time	15:00									
ORP/EH (mV)	203.4									
pH	6.88									
Cond. (MS/CM)	0.614									
Turbidity (NTU)	>1000									
D.O. (mg/L)	1.80									
Temperature (°C)	13.3									

Total Volume Purged: 0.1 gal. Total Purge Time: 5 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3

Sampling Time: 17:25

Sample Analyses: TCL VOCs

Comments: Water is very turbid, light brown, no sheen, no effervescence, and no odor. Well went dry at 0.1 gallons.

CHA attempted to use low flow bladder pump, however, after 1 hour and 18 minutes, the bladder pump was stopped. The flow through cell was not full yet and the water level dropped 1 foot.

CHA	**Low-Flow Sampling Log**	**Sample/Well Designation:** MW-3

Project Name: Former Interceram Site | Logged By: Favreau/Pierce

Project Location: 20 Fortune Road West, Middletown, NY | Date: 8/28/2014

Project Number: 28574.2000.31000 | Screen Interval: ft. from TOC

Purge Information:

Depth to Water: 7.61 ft. from TOC | Purging Water Level: 8.65 ft. from TOC

Pumping Rate: 20 ml/min | Pump Placement: 22.63 ft. from TOC

Method of Purging: ☐ Submersible ☐ Dedicated ☒ Other: Bladder

Stabilization Criteria:
****DO ± 10%** ****SEC ± 3%** Turb. ± 10% ORP ± 10 mv pH ± 0.1 unit

Field Analysis: Started purging at 15:45

Volume Purged (L)										
Time	16:10	16:15	16:20	16:25	16:30	16:35	16:40	16:45	16:50	16:55
ORP/EH (mV)	184.8	176.8	156.9	138.5	134.8	125.2	126.8	125.5	126.6	127.9
pH	6.98	6.89	7.00	7.02	7.02	7.01	6.99	6.97	6.96	6.94
Cond. (MS/CM)	0.777	0.787	0.792	0.789	0.789	0.790	0.791	0.794	0.793	0.794
Turbidity (NTU)	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000
D.O. (mg/L)	0.89	0.70	0.62	0.87	1.16	1.01	0.98	0.89	0.88	0.89
Temperature (°C)	14.03	14.19	15.19	16.36	17.43	17.68	17.71	17.81	17.70	17.36
Drawdown (ft)	0.59	0.67	0.99	1.04	1.04	1.04	1.04	1.04	1.04	1.04

Total Volume Purged: 0.5 gal. | Total Purge Time: 70 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3

Sampling Time: 17:05

Sample Analyses: TCL VOCs

Comments: Water is very turbid, light brown, no sheen, no effervescence, and no odor.

CHA	**Well Sampling/ Development Log**	**Sample/Well Designation:** SUMP
Project Name: Former Interceram Site		Logged By: Favreau/Pierce
Project Location: 20 Fortune Road West, Middletown, NY		Date: 8/28/2014
Project Number: 28574.2000.31000		Screen Length: _____

Purge Information:

(1) Depth to Bottom of Well: 31.3 ft. (from TOC)
(2) Depth to Water: 5.40 ft. (from TOC)
(3) Column of Water: 25.9 ft. [(1) – (2)]
(4) Well Riser Diameter: 8 in.
(5) Volume Conversion: 2.611 gal./ft. (see below)
(6) 1 Well Volume: 67.6 gal. [(3) x (5)]

Method of Purging: ☐ WaTerra ☒ Bailer ☐ Submersible ☐ Other: _____

Volume Conversion: (gal./ft.)
2" = 0.163 4" = 0.653 6" = 1.469 8" 2.611 10" = 4.08

Field Analysis: Started purging at 15:45

Volume Purged (gal.)	25	50	70							
Time	16:10	16:32	16:49							
ORP/EH (mV)	176.7	262.1	280.9							
pH	8.10	7.87	7.74							
Cond. (MS/CM)	6.325	17.910	23.670							
Turbidity (NTU)	51.4	46.4	41.2							
D.O. (mg/L)	NM	NM	NM							
Temperature (°C)	16.51	14.59	13.91							

Total Volume Purged: 70 gal. Total Purge Time: 64 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3

Sampling Time: 17:00

Sample Analyses: TCL VOCs

Comments: Water is light brown with brown suspended solids, no sheen, no effervescence, and no odor.

CHA	**Low-Flow Sampling Log**	**Sample/Well Designation:** S-2/CHA-1
Project Name: Former Interceram Site		Logged By: Rosecrans
Project Location: 20 Fortune Road West, Middletown, NY		Date: 1/13/2015
Project Number: 28574.2000.31000		Screen Interval: ft. from TOC

Purge Information:

Depth to Water: 4.0 ft. from TOC

Purging Water Level: 5.7 ft. from TOC

Pumping Rate: 60 ml/min

Pump Placement: 15.5 ft. from TOC

Method of Purging: ☐Submersible ☐ Dedicated ☒ Other: Bladder

Stabilization Criteria:

****DO ± 10%** ****SEC ± 3%** Turb. ± 10% ORP ± 10 mv pH ± 0.1 unit

Field Analysis: Started purging at 14:18

Volume Purged (L)										
Time	14:30	14:35	14:40	14:45	14:50	14:55	15:00	15:05	15:10	15:15
ORP/EH (mV)	284.7	261.0	242.8	225.1	219.7	214.4	210.9	206.1	200.8	198.7
pH	6.16	6.09	6.08	6.02	6.00	5.91	5.95	5.95	5.96	5.98
Cond. (MS/CM)	10.62	9.588	9.200	9.145	9.138	9.187	9.088	8.902	8.758	8.615
Turbidity (NTU)	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000
D.O. (mg/L)	10.06	2.80	2.05	1.54	1.40	1.25	1.23	1.21	1.18	1.16
Temperature (°C)	3.45	3.77	3.76	2.78	1.87	1.08	0.71	0.51	0.62	0.57
Drawdown (ft)	NM	NM	2.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7

Total Volume Purged: 2.0 gal.

Total Purge Time: 1 hour 3 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3 + 3

Sampling Time: 15:35/15:40

Sample Analyses: TCL VOCs

Comments: Water is very turbid, white, slight vegetable oil odor, no sheen, and no effervescence. Presence of residual 3DME in well.

Duplicate, CHA-1, was collected here.

CHA	**Well Sampling/ Development Log**	**Sample/Well Designation:** S-9
Project Name: Former Interceram Site		Logged By: Rosecrans
Project Location: 20 Fortune Road West, Middletown, NY		Date: 1/13/2015
Project Number: 28574.2000.31000		Screen Length: _____

Purge Information:

(1) Depth to Bottom of Well: 15 ft. (from TOC)
(2) Depth to Water: 2.72 ft. (from TOC)
(3) Column of Water: 12.28 ft. [(1) – (2)]
(4) Well Riser Diameter: 1 in.
(5) Volume Conversion: 0.041 gal./ft. (see below)
(6) 1 Well Volume: 0.50 gal. [(3) x (5)]

Method of Purging: ☐ WaTerra ☒ Bailer ☐ Submersible ☐ Other: _____

Volume Conversion: (gal./ft.)
2" = 0.163 4" = 0.653 6" = 1.469 8" 2.611 10" = 4.08

Field Analysis: Started purging at 10:05

Volume Purged (gal.)	0.5	1.0								
Time	10:10	10:20								
ORP/EH (mV)	286.3	257.0								
pH	8.01	7.40								
Cond. (MS/CM)	0.592	0.653								
Turbidity (NTU)	559	>1000								
D.O. (mg/L)	2.66	2.13								
Temperature (°C)	3.02	4.72								

Total Volume Purged: 1.0 gal. Total Purge Time: 15 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3

Sampling Time: 12:45

Sample Analyses: TCL VOCs

Comments: Water is cloudy with white suspended solids, a vegetable oil odor, and no effervescence. Presence of residual 3DME in well. Water turned to dark brown at end of purging. Well went dry at 1.0 gallon.

CHA	**Well Sampling/ Development Log**	**Sample/Well Designation:** SUMP
Project Name: Former Interceram Site		Logged By: Rosecrans
Project Location: 20 Fortune Road West, Middletown, NY		Date: 1/13/2015
Project Number: 28574.2000.31000		Screen Length: _____

Purge Information:

(1) Depth to Bottom of Well: 31.3 ft. (from TOC)
(2) Depth to Water: 5.42 ft. (from TOC)
(3) Column of Water: 25.88 ft. [(1) – (2)]
(4) Well Riser Diameter: 8 in.
(5) Volume Conversion: 2.611 gal./ft. (see below)
(6) 1 Well Volume: 67.5 gal. [(3) x (5)]

Method of Purging: ☐ WaTerra ☒ Bailer ☐ Submersible ☐ Other: _____

Volume Conversion: (gal./ft.)
2" = 0.163 4" = 0.653 6" = 1.469 8" 2.611 10" = 4.08

Field Analysis: Started purging at 10:34

Volume Purged (gal.)	25	50	70							
Time	10:53	11:15	11:30							
ORP/EH (mV)	263.0	64.6	37.3							
pH	7.08	7.18	7.64							
Cond. (MS/CM)	2.402	2.431	2.476							
Turbidity (NTU)	51.1	54.3	142							
D.O. (mg/L)	2.33	3.13	4.38							
Temperature (°C)	6.58	6.44	7.76							

Total Volume Purged: 70 gal. Total Purge Time: 56 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3

Sampling Time: 11:35

Sample Analyses: TCL VOCs

Comments: Water is relatively clear with black suspended solids, a vegetable oil odor, and moderate effervescence. Presence of residual 3DME in well.

CHA	**Low-Flow Sampling Log**	**Sample/Well Designation:** MW-3

Project Name: Former Interceram Site | Logged By: Rosecrans

Project Location: 20 Fortune Road West, Middletown, NY | Date: 1/13/2015

Project Number: 28574.2000.31000 | Screen Interval: ft. from TOC

Purge Information:

Depth to Water: 4.63 ft. from TOC | Purging Water Level: 6.71 ft. from TOC

Pumping Rate: 20 ml/min | Pump Placement: 21.65 ft. from TOC

Method of Purging: ☐Submersible ☐ Dedicated ☒ Other: Bladder

Stabilization Criteria:
****DO ± 10%** ****SEC ± 3%** Turb. ± 10% ORP ± 10 mv pH ± 0.1 unit

Field Analysis: Started purging at 13:00

Volume Purged (L)										
Time	13:05	13:10	13:15	13:20	13:25	13:30	13:35	13:40	13:45	13:50
ORP/EH (mV)	220.3	217.1	222.9	224	225.9	224.9	223.5	221.8	219.1	218.7
pH	7.99	7.42	7.40	7.01	6.86	6.85	6.85	6.86	6.89	6.90
Cond. (MS/CM)	0.775	0.779	0.779	0.781	0.782	0.784	0.786	0.781	0.779	0.777
Turbidity (NTU)	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000
D.O. (mg/L)	2.87	2.34	2.27	2.27	2.18	2.12	2.08	1.88	1.84	1.86
Temperature (°C)	2.95	0.14	-0.73	-1.30	-2.35	-2.45	-2.62	-2.40	-2.18	-2.14
Drawdown (ft)	1.52	2.59	1.87	1.97	2.08	2.08	2.08	2.08	2.08	2.08

Total Volume Purged: 0.5 gal. | Total Purge Time: 55 minutes

Sampling Information:

Sampling Method: Grab

No. of Bottles: 3

Sampling Time: 13:55

Sample Analyses: TCL VOCs

Comments: Water is very turbid, light brown, no sheen, no effervescence, and no odor.

APPENDIX H

Laboratory Analytical Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-66413-1
Client Project/Site: Former Interceram Site

For:
CHA Inc
111 Winner Circle
PO BOX 5269
Albany, New York 12205-0269

Attn: Mr. John Favreau

Judy Stone

Authorized for release by:
9/15/2014 4:05:30 PM

Judy Stone, Senior Project Manager
(484)685-0868
judy.stone@testamericainc.com

Table of Contents

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits
H	Sample was prepped or analyzed beyond the specified holding time
F1	MS and/or MSD Recovery exceeds the control limits
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-66413-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-66413-1

Receipt
The samples were received on 8/30/2014 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.0º C.

GC/MS VOA
Method(s) 8260C: The laboratory control sample (LCS) for batch 201883 recovered outside control limits for the following analyte:Dichlorodifluoromethane. This analyte has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-3 (480-66413-7), S-9 (480-66413-6), (480-66413-1 MS), (480-66413-1 MSD), SUMP (480-66413-1). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 202028 recovered outside acceptance criteria, low biased, for 4-Methyl-2-pentanone. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 202028 recovered above the upper control limit for Trichlorofluoromethane and 1,1,2-Trichloro-1,2,2,-trifluoroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 8260C: The laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) for batch 202028 recovered outside control limits for the following analytes: 4-Methyl-2-pentanone, Dichlorodifluoromethane and Acrolein. These were not requested spike compounds; therefore, the data have been qualified and reported. (LCS 480-202028/4)

Method(s) 8260C: Reanalysis of the following samples was performed outside of the analytical holding time due to several instrument issues that were unavoidable: CHA-1 (480-66413-8), S-2 (480-66413-2), S-9 (480-66413-6), SUMP (480-66413-1).

Method(s) 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: CHA-1 (480-66413-8), S-2 (480-66413-2). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The following samples were originally analyzed within analytical holding times with elevated diultions;.CHA-1 (480-66413-8), S-2 (480-66413-2), SUMP (480-66413-1). The samples were reanalyzed outside of analytical hold at lower dilutions. Both sets of data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Client Sample ID: SUMP — Lab Sample ID: 480-66413-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloro-1,2,2-trifluoroethane	1600		80		ug/L	80		8260C	Total/NA
1,1,2-Trichloro-1,2,2-trifluoroethane - RA	1900	H	25		ug/L	25		8260C	Total/NA
Chloroform - RA	81	H	25		ug/L	25		8260C	Total/NA

Client Sample ID: S-2 — Lab Sample ID: 480-66413-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane - RA	24	H	5.0		ug/L	5		8260C	Total/NA
1,1,2,2-Tetrachloroethane - RA	11	H	5.0		ug/L	5		8260C	Total/NA
1,1-Dichloroethane - RA	5.1	H	5.0		ug/L	5		8260C	Total/NA
Acetone - RA	190	H	50		ug/L	5		8260C	Total/NA
Bromomethane - RA	11	H	5.0		ug/L	5		8260C	Total/NA
Carbon disulfide - RA	6.7	H	5.0		ug/L	5		8260C	Total/NA
Chloromethane - RA	25	H	5.0		ug/L	5		8260C	Total/NA

Client Sample ID: S-4 — Lab Sample ID: 480-66413-3

No Detections.

Client Sample ID: S-7 — Lab Sample ID: 480-66413-4

No Detections.

Client Sample ID: S-8 — Lab Sample ID: 480-66413-5

No Detections.

Client Sample ID: S-9 — Lab Sample ID: 480-66413-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	10		5.0		ug/L	5		8260C	Total/NA
cis-1,2-Dichloroethene	87		5.0		ug/L	5		8260C	Total/NA
Trichloroethene	810	E	5.0		ug/L	5		8260C	Total/NA
cis-1,2-Dichloroethene - DL	76	H	10		ug/L	10		8260C	Total/NA
Trichloroethene - DL	660	H	10		ug/L	10		8260C	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 480-66413-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	11		4.0		ug/L	4		8260C	Total/NA
1,1,2-Trichloro-1,2,2-trifluoroethane	9.2		4.0		ug/L	4		8260C	Total/NA
cis-1,2-Dichloroethene	36		4.0		ug/L	4		8260C	Total/NA
Trichloroethene	160		4.0		ug/L	4		8260C	Total/NA

Client Sample ID: CHA-1 — Lab Sample ID: 480-66413-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane - RA	26	H	5.0		ug/L	5		8260C	Total/NA
1,1,2,2-Tetrachloroethane - RA	13	H	5.0		ug/L	5		8260C	Total/NA
1,1-Dichloroethane - RA	5.6	H	5.0		ug/L	5		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Client Sample ID: CHA-1 (Continued)

Lab Sample ID: 480-66413-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone - RA	170	H	50		ug/L	5		8260C	Total/NA
Bromomethane - RA	7.1	H	5.0		ug/L	5		8260C	Total/NA
Carbon disulfide - RA	10	H	5.0		ug/L	5		8260C	Total/NA
Chloromethane - RA	12	H	5.0		ug/L	5		8260C	Total/NA
Trichloroethene - RA	5.7	H	5.0		ug/L	5		8260C	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-66413-9

No Detections.

This Detection Summary does not include radiochemical test results.

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Client Sample ID: SUMP
Date Collected: 08/28/14 17:05
Date Received: 08/30/14 09:00

Lab Sample ID: 480-66413-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		80		ug/L			09/11/14 16:59	80
1,1,2,2-Tetrachloroethane	ND		80		ug/L			09/11/14 16:59	80
1,1,2-Trichloroethane	ND		80		ug/L			09/11/14 16:59	80
1,1,2-Trichloro-1,2,2-trifluoroethane	**1600**		80		ug/L			09/11/14 16:59	80
1,1-Dichloroethane	ND		80		ug/L			09/11/14 16:59	80
1,1-Dichloroethene	ND		80		ug/L			09/11/14 16:59	80
1,2,4-Trichlorobenzene	ND		80		ug/L			09/11/14 16:59	80
1,2-Dibromo-3-Chloropropane	ND		80		ug/L			09/11/14 16:59	80
1,2-Dibromoethane	ND		80		ug/L			09/11/14 16:59	80
1,2-Dichlorobenzene	ND		80		ug/L			09/11/14 16:59	80
1,2-Dichloroethane	ND		80		ug/L			09/11/14 16:59	80
1,2-Dichloropropane	ND		80		ug/L			09/11/14 16:59	80
1,3-Dichlorobenzene	ND		80		ug/L			09/11/14 16:59	80
1,4-Dichlorobenzene	ND		80		ug/L			09/11/14 16:59	80
2-Hexanone	ND		400		ug/L			09/11/14 16:59	80
2-Butanone (MEK)	ND		800		ug/L			09/11/14 16:59	80
4-Methyl-2-pentanone (MIBK)	ND		400		ug/L			09/11/14 16:59	80
Acetone	ND		800		ug/L			09/11/14 16:59	80
Benzene	ND		80		ug/L			09/11/14 16:59	80
Bromodichloromethane	ND		80		ug/L			09/11/14 16:59	80
Bromoform	ND		80		ug/L			09/11/14 16:59	80
Bromomethane	ND		80		ug/L			09/11/14 16:59	80
Carbon disulfide	ND		80		ug/L			09/11/14 16:59	80
Carbon tetrachloride	ND		80		ug/L			09/11/14 16:59	80
Chlorobenzene	ND		80		ug/L			09/11/14 16:59	80
Dibromochloromethane	ND		80		ug/L			09/11/14 16:59	80
Chloroethane	ND		80		ug/L			09/11/14 16:59	80
Chloroform	ND		80		ug/L			09/11/14 16:59	80
Chloromethane	ND		80		ug/L			09/11/14 16:59	80
cis-1,2-Dichloroethene	ND		80		ug/L			09/11/14 16:59	80
cis-1,3-Dichloropropene	ND		80		ug/L			09/11/14 16:59	80
Cyclohexane	ND		80		ug/L			09/11/14 16:59	80
Dichlorodifluoromethane	ND	*	80		ug/L			09/11/14 16:59	80
Ethylbenzene	ND		80		ug/L			09/11/14 16:59	80
Isopropylbenzene	ND		80		ug/L			09/11/14 16:59	80
Methyl acetate	ND		200		ug/L			09/11/14 16:59	80
Methyl tert-butyl ether	ND		80		ug/L			09/11/14 16:59	80
Methylcyclohexane	ND		80		ug/L			09/11/14 16:59	80
Methylene Chloride	ND		80		ug/L			09/11/14 16:59	80
Styrene	ND		80		ug/L			09/11/14 16:59	80
Tetrachloroethene	ND		80		ug/L			09/11/14 16:59	80
Toluene	ND		80		ug/L			09/11/14 16:59	80
trans-1,2-Dichloroethene	ND		80		ug/L			09/11/14 16:59	80
trans-1,3-Dichloropropene	ND		80		ug/L			09/11/14 16:59	80
Trichloroethene	ND		80		ug/L			09/11/14 16:59	80
Trichlorofluoromethane	ND		80		ug/L			09/11/14 16:59	80
Vinyl chloride	ND		80		ug/L			09/11/14 16:59	80
Xylenes, Total	ND		160		ug/L			09/11/14 16:59	80

Client Sample ID: SUMP
Date Collected: 08/28/14 17:05
Date Received: 08/30/14 09:00

Lab Sample ID: 480-66413-1
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*74*		*66 - 137*		*09/11/14 16:59*	*80*
Toluene-d8 (Surr)	*88*		*71 - 126*		*09/11/14 16:59*	*80*
4-Bromofluorobenzene (Surr)	*81*		*73 - 120*		*09/11/14 16:59*	*80*

Method: 8260C - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	25		ug/L			09/12/14 04:35	25
1,1,2,2-Tetrachloroethane	ND	H	25		ug/L			09/12/14 04:35	25
1,1,2-Trichloroethane	ND	H	25		ug/L			09/12/14 04:35	25
1,1,2-Trichloro-1,2,2-trifluoroethane	**1900**	**H**	25		ug/L			09/12/14 04:35	25
1,1-Dichloroethane	ND	H	25		ug/L			09/12/14 04:35	25
1,1-Dichloroethene	ND	H	25		ug/L			09/12/14 04:35	25
1,2,4-Trichlorobenzene	ND	H	25		ug/L			09/12/14 04:35	25
1,2-Dibromo-3-Chloropropane	ND	H	25		ug/L			09/12/14 04:35	25
1,2-Dibromoethane	ND	H	25		ug/L			09/12/14 04:35	25
1,2-Dichlorobenzene	ND	H	25		ug/L			09/12/14 04:35	25
1,2-Dichloroethane	ND	H	25		ug/L			09/12/14 04:35	25
1,2-Dichloropropane	ND	H	25		ug/L			09/12/14 04:35	25
1,3-Dichlorobenzene	ND	H	25		ug/L			09/12/14 04:35	25
1,4-Dichlorobenzene	ND	H	25		ug/L			09/12/14 04:35	25
2-Hexanone	ND	H	130		ug/L			09/12/14 04:35	25
2-Butanone (MEK)	ND	H	250		ug/L			09/12/14 04:35	25
4-Methyl-2-pentanone (MIBK)	ND	H *	130		ug/L			09/12/14 04:35	25
Acetone	ND	H	250		ug/L			09/12/14 04:35	25
Benzene	ND	H	25		ug/L			09/12/14 04:35	25
Bromodichloromethane	ND	H	25		ug/L			09/12/14 04:35	25
Bromoform	ND	H	25		ug/L			09/12/14 04:35	25
Bromomethane	ND	H	25		ug/L			09/12/14 04:35	25
Carbon disulfide	ND	H	25		ug/L			09/12/14 04:35	25
Carbon tetrachloride	ND	H	25		ug/L			09/12/14 04:35	25
Chlorobenzene	ND	H	25		ug/L			09/12/14 04:35	25
Dibromochloromethane	ND	H	25		ug/L			09/12/14 04:35	25
Chloroethane	ND	H	25		ug/L			09/12/14 04:35	25
Chloroform	**81**	**H**	25		ug/L			09/12/14 04:35	25
Chloromethane	ND	H	25		ug/L			09/12/14 04:35	25
cis-1,2-Dichloroethene	ND	H	25		ug/L			09/12/14 04:35	25
cis-1,3-Dichloropropene	ND	H	25		ug/L			09/12/14 04:35	25
Cyclohexane	ND	H	25		ug/L			09/12/14 04:35	25
Dichlorodifluoromethane	ND	H *	25		ug/L			09/12/14 04:35	25
Ethylbenzene	ND	H	25		ug/L			09/12/14 04:35	25
Isopropylbenzene	ND	H	25		ug/L			09/12/14 04:35	25
Methyl acetate	ND	H	63		ug/L			09/12/14 04:35	25
Methyl tert-butyl ether	ND	H	25		ug/L			09/12/14 04:35	25
Methylcyclohexane	ND	H	25		ug/L			09/12/14 04:35	25
Methylene Chloride	ND	H	25		ug/L			09/12/14 04:35	25
Styrene	ND	H	25		ug/L			09/12/14 04:35	25
Tetrachloroethene	ND	H	25		ug/L			09/12/14 04:35	25
Toluene	ND	H	25		ug/L			09/12/14 04:35	25
trans-1,2-Dichloroethene	ND	H	25		ug/L			09/12/14 04:35	25

Client Sample ID: SUMP — **Lab Sample ID: 480-66413-1**
Date Collected: 08/28/14 17:05 — **Matrix: Water**
Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS - RA (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND	H	25		ug/L			09/12/14 04:35	25
Trichloroethene	ND	H	25		ug/L			09/12/14 04:35	25
Trichlorofluoromethane	ND	H	25		ug/L			09/12/14 04:35	25
Vinyl chloride	ND	H	25		ug/L			09/12/14 04:35	25
Xylenes, Total	ND	H	50		ug/L			09/12/14 04:35	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*66 - 137*		*09/12/14 04:35*	*25*
Toluene-d8 (Surr)	*91*		*71 - 126*		*09/12/14 04:35*	*25*
4-Bromofluorobenzene (Surr)	*94*		*73 - 120*		*09/12/14 04:35*	*25*

Client Sample ID: S-2 — **Lab Sample ID: 480-66413-2**
Date Collected: 08/28/14 15:00 — **Matrix: Water**
Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		200		ug/L			09/11/14 17:23	200
1,1,2,2-Tetrachloroethane	ND		200		ug/L			09/11/14 17:23	200
1,1,2-Trichloroethane	ND		200		ug/L			09/11/14 17:23	200
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		200		ug/L			09/11/14 17:23	200
1,1-Dichloroethane	ND		200		ug/L			09/11/14 17:23	200
1,1-Dichloroethene	ND		200		ug/L			09/11/14 17:23	200
1,2,4-Trichlorobenzene	ND		200		ug/L			09/11/14 17:23	200
1,2-Dibromo-3-Chloropropane	ND		200		ug/L			09/11/14 17:23	200
1,2-Dibromoethane	ND		200		ug/L			09/11/14 17:23	200
1,2-Dichlorobenzene	ND		200		ug/L			09/11/14 17:23	200
1,2-Dichloroethane	ND		200		ug/L			09/11/14 17:23	200
1,2-Dichloropropane	ND		200		ug/L			09/11/14 17:23	200
1,3-Dichlorobenzene	ND		200		ug/L			09/11/14 17:23	200
1,4-Dichlorobenzene	ND		200		ug/L			09/11/14 17:23	200
2-Hexanone	ND		1000		ug/L			09/11/14 17:23	200
2-Butanone (MEK)	ND		2000		ug/L			09/11/14 17:23	200
4-Methyl-2-pentanone (MIBK)	ND		1000		ug/L			09/11/14 17:23	200
Acetone	ND		2000		ug/L			09/11/14 17:23	200
Benzene	ND		200		ug/L			09/11/14 17:23	200
Bromodichloromethane	ND		200		ug/L			09/11/14 17:23	200
Bromoform	ND		200		ug/L			09/11/14 17:23	200
Bromomethane	ND		200		ug/L			09/11/14 17:23	200
Carbon disulfide	ND		200		ug/L			09/11/14 17:23	200
Carbon tetrachloride	ND		200		ug/L			09/11/14 17:23	200
Chlorobenzene	ND		200		ug/L			09/11/14 17:23	200
Dibromochloromethane	ND		200		ug/L			09/11/14 17:23	200
Chloroethane	ND		200		ug/L			09/11/14 17:23	200
Chloroform	ND		200		ug/L			09/11/14 17:23	200
Chloromethane	ND		200		ug/L			09/11/14 17:23	200
cis-1,2-Dichloroethene	ND		200		ug/L			09/11/14 17:23	200
cis-1,3-Dichloropropene	ND		200		ug/L			09/11/14 17:23	200
Cyclohexane	ND		200		ug/L			09/11/14 17:23	200
Dichlorodifluoromethane	ND	*	200		ug/L			09/11/14 17:23	200

Client Sample ID: S-2
Date Collected: 08/28/14 15:00
Date Received: 08/30/14 09:00

Lab Sample ID: 480-66413-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		200		ug/L			09/11/14 17:23	200
Isopropylbenzene	ND		200		ug/L			09/11/14 17:23	200
Methyl acetate	ND		500		ug/L			09/11/14 17:23	200
Methyl tert-butyl ether	ND		200		ug/L			09/11/14 17:23	200
Methylcyclohexane	ND		200		ug/L			09/11/14 17:23	200
Methylene Chloride	ND		200		ug/L			09/11/14 17:23	200
Styrene	ND		200		ug/L			09/11/14 17:23	200
Tetrachloroethene	ND		200		ug/L			09/11/14 17:23	200
Toluene	ND		200		ug/L			09/11/14 17:23	200
trans-1,2-Dichloroethene	ND		200		ug/L			09/11/14 17:23	200
trans-1,3-Dichloropropene	ND		200		ug/L			09/11/14 17:23	200
Trichloroethene	ND		200		ug/L			09/11/14 17:23	200
Trichlorofluoromethane	ND		200		ug/L			09/11/14 17:23	200
Vinyl chloride	ND		200		ug/L			09/11/14 17:23	200
Xylenes, Total	ND		400		ug/L			09/11/14 17:23	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*66 - 137*		*09/11/14 17:23*	*200*
Toluene-d8 (Surr)	*91*		*71 - 126*		*09/11/14 17:23*	*200*
4-Bromofluorobenzene (Surr)	*105*		*73 - 120*		*09/11/14 17:23*	*200*

Method: 8260C - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**24**	**H**	5.0		ug/L			09/12/14 04:59	5
1,1,2,2-Tetrachloroethane	**11**	**H**	5.0		ug/L			09/12/14 04:59	5
1,1,2-Trichloroethane	ND	H	5.0		ug/L			09/12/14 04:59	5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H	5.0		ug/L			09/12/14 04:59	5
1,1-Dichloroethane	**5.1**	**H**	5.0		ug/L			09/12/14 04:59	5
1,1-Dichloroethene	ND	H	5.0		ug/L			09/12/14 04:59	5
1,2,4-Trichlorobenzene	ND	H	5.0		ug/L			09/12/14 04:59	5
1,2-Dibromo-3-Chloropropane	ND	H	5.0		ug/L			09/12/14 04:59	5
1,2-Dibromoethane	ND	H	5.0		ug/L			09/12/14 04:59	5
1,2-Dichlorobenzene	ND	H	5.0		ug/L			09/12/14 04:59	5
1,2-Dichloroethane	ND	H	5.0		ug/L			09/12/14 04:59	5
1,2-Dichloropropane	ND	H	5.0		ug/L			09/12/14 04:59	5
1,3-Dichlorobenzene	ND	H	5.0		ug/L			09/12/14 04:59	5
1,4-Dichlorobenzene	ND	H	5.0		ug/L			09/12/14 04:59	5
2-Hexanone	ND	H	25		ug/L			09/12/14 04:59	5
2-Butanone (MEK)	ND	H	50		ug/L			09/12/14 04:59	5
4-Methyl-2-pentanone (MIBK)	ND	H *	25		ug/L			09/12/14 04:59	5
Acetone	**190**	**H**	50		ug/L			09/12/14 04:59	5
Benzene	ND	H	5.0		ug/L			09/12/14 04:59	5
Bromodichloromethane	ND	H	5.0		ug/L			09/12/14 04:59	5
Bromoform	ND	H	5.0		ug/L			09/12/14 04:59	5
Bromomethane	**11**	**H**	5.0		ug/L			09/12/14 04:59	5
Carbon disulfide	**6.7**	**H**	5.0		ug/L			09/12/14 04:59	5
Carbon tetrachloride	ND	H	5.0		ug/L			09/12/14 04:59	5
Chlorobenzene	ND	H	5.0		ug/L			09/12/14 04:59	5
Dibromochloromethane	ND	H	5.0		ug/L			09/12/14 04:59	5
Chloroethane	ND	H	5.0		ug/L			09/12/14 04:59	5

Client Sample ID: S-2

Lab Sample ID: 480-66413-2

Date Collected: 08/28/14 15:00

Matrix: Water

Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS - RA (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND	H	5.0		ug/L			09/12/14 04:59	5
Chloromethane	**25**	**H**	5.0		ug/L			09/12/14 04:59	5
cis-1,2-Dichloroethene	ND	H	5.0		ug/L			09/12/14 04:59	5
cis-1,3-Dichloropropene	ND	H	5.0		ug/L			09/12/14 04:59	5
Cyclohexane	ND	H	5.0		ug/L			09/12/14 04:59	5
Dichlorodifluoromethane	ND	H *	5.0		ug/L			09/12/14 04:59	5
Ethylbenzene	ND	H	5.0		ug/L			09/12/14 04:59	5
Isopropylbenzene	ND	H	5.0		ug/L			09/12/14 04:59	5
Methyl acetate	ND	H	13		ug/L			09/12/14 04:59	5
Methyl tert-butyl ether	ND	H	5.0		ug/L			09/12/14 04:59	5
Methylcyclohexane	ND	H	5.0		ug/L			09/12/14 04:59	5
Methylene Chloride	ND	H	5.0		ug/L			09/12/14 04:59	5
Styrene	ND	H	5.0		ug/L			09/12/14 04:59	5
Tetrachloroethene	ND	H	5.0		ug/L			09/12/14 04:59	5
Toluene	ND	H	5.0		ug/L			09/12/14 04:59	5
trans-1,2-Dichloroethene	ND	H	5.0		ug/L			09/12/14 04:59	5
trans-1,3-Dichloropropene	ND	H	5.0		ug/L			09/12/14 04:59	5
Trichloroethene	ND	H	5.0		ug/L			09/12/14 04:59	5
Trichlorofluoromethane	ND	H	5.0		ug/L			09/12/14 04:59	5
Vinyl chloride	ND	H	5.0		ug/L			09/12/14 04:59	5
Xylenes, Total	ND	H	10		ug/L			09/12/14 04:59	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*83*		*66 - 137*		*09/12/14 04:59*	*5*
Toluene-d8 (Surr)	*93*		*71 - 126*		*09/12/14 04:59*	*5*
4-Bromofluorobenzene (Surr)	*93*		*73 - 120*		*09/12/14 04:59*	*5*

Client Sample ID: S-4

Lab Sample ID: 480-66413-3

Date Collected: 08/28/14 12:00

Matrix: Water

Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			09/11/14 17:47	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			09/11/14 17:47	1
1,1,2-Trichloroethane	ND		1.0		ug/L			09/11/14 17:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			09/11/14 17:47	1
1,1-Dichloroethane	ND		1.0		ug/L			09/11/14 17:47	1
1,1-Dichloroethene	ND		1.0		ug/L			09/11/14 17:47	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			09/11/14 17:47	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			09/11/14 17:47	1
1,2-Dibromoethane	ND		1.0		ug/L			09/11/14 17:47	1
1,2-Dichlorobenzene	ND		1.0		ug/L			09/11/14 17:47	1
1,2-Dichloroethane	ND		1.0		ug/L			09/11/14 17:47	1
1,2-Dichloropropane	ND		1.0		ug/L			09/11/14 17:47	1
1,3-Dichlorobenzene	ND		1.0		ug/L			09/11/14 17:47	1
1,4-Dichlorobenzene	ND		1.0		ug/L			09/11/14 17:47	1
2-Hexanone	ND		5.0		ug/L			09/11/14 17:47	1
2-Butanone (MEK)	ND		10		ug/L			09/11/14 17:47	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/11/14 17:47	1

Client Sample ID: S-4 — **Lab Sample ID: 480-66413-3**
Date Collected: 08/28/14 12:00 — **Matrix: Water**
Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10		ug/L			09/11/14 17:47	1
Benzene	ND		1.0		ug/L			09/11/14 17:47	1
Bromodichloromethane	ND		1.0		ug/L			09/11/14 17:47	1
Bromoform	ND		1.0		ug/L			09/11/14 17:47	1
Bromomethane	ND		1.0		ug/L			09/11/14 17:47	1
Carbon disulfide	ND		1.0		ug/L			09/11/14 17:47	1
Carbon tetrachloride	ND		1.0		ug/L			09/11/14 17:47	1
Chlorobenzene	ND		1.0		ug/L			09/11/14 17:47	1
Dibromochloromethane	ND		1.0		ug/L			09/11/14 17:47	1
Chloroethane	ND		1.0		ug/L			09/11/14 17:47	1
Chloroform	ND		1.0		ug/L			09/11/14 17:47	1
Chloromethane	ND		1.0		ug/L			09/11/14 17:47	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			09/11/14 17:47	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			09/11/14 17:47	1
Cyclohexane	ND		1.0		ug/L			09/11/14 17:47	1
Dichlorodifluoromethane	ND	*	1.0		ug/L			09/11/14 17:47	1
Ethylbenzene	ND		1.0		ug/L			09/11/14 17:47	1
Isopropylbenzene	ND		1.0		ug/L			09/11/14 17:47	1
Methyl acetate	ND		2.5		ug/L			09/11/14 17:47	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/11/14 17:47	1
Methylcyclohexane	ND		1.0		ug/L			09/11/14 17:47	1
Methylene Chloride	ND		1.0		ug/L			09/11/14 17:47	1
Styrene	ND		1.0		ug/L			09/11/14 17:47	1
Tetrachloroethene	ND		1.0		ug/L			09/11/14 17:47	1
Toluene	ND		1.0		ug/L			09/11/14 17:47	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			09/11/14 17:47	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			09/11/14 17:47	1
Trichloroethene	ND		1.0		ug/L			09/11/14 17:47	1
Trichlorofluoromethane	ND		1.0		ug/L			09/11/14 17:47	1
Vinyl chloride	ND		1.0		ug/L			09/11/14 17:47	1
Xylenes, Total	ND		2.0		ug/L			09/11/14 17:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*66 - 137*		*09/11/14 17:47*	*1*
Toluene-d8 (Surr)	*92*		*71 - 126*		*09/11/14 17:47*	*1*
4-Bromofluorobenzene (Surr)	*93*		*73 - 120*		*09/11/14 17:47*	*1*

Client Sample ID: S-7 — **Lab Sample ID: 480-66413-4**
Date Collected: 08/28/14 13:05 — **Matrix: Water**
Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			09/11/14 18:11	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			09/11/14 18:11	1
1,1,2-Trichloroethane	ND		1.0		ug/L			09/11/14 18:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			09/11/14 18:11	1
1,1-Dichloroethane	ND		1.0		ug/L			09/11/14 18:11	1
1,1-Dichloroethene	ND		1.0		ug/L			09/11/14 18:11	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			09/11/14 18:11	1

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Client Sample ID: S-7
Date Collected: 08/28/14 13:05
Date Received: 08/30/14 09:00

Lab Sample ID: 480-66413-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			09/11/14 18:11	1
1,2-Dibromoethane	ND		1.0		ug/L			09/11/14 18:11	1
1,2-Dichlorobenzene	ND		1.0		ug/L			09/11/14 18:11	1
1,2-Dichloroethane	ND		1.0		ug/L			09/11/14 18:11	1
1,2-Dichloropropane	ND		1.0		ug/L			09/11/14 18:11	1
1,3-Dichlorobenzene	ND		1.0		ug/L			09/11/14 18:11	1
1,4-Dichlorobenzene	ND		1.0		ug/L			09/11/14 18:11	1
2-Hexanone	ND		5.0		ug/L			09/11/14 18:11	1
2-Butanone (MEK)	ND		10		ug/L			09/11/14 18:11	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/11/14 18:11	1
Acetone	ND		10		ug/L			09/11/14 18:11	1
Benzene	ND		1.0		ug/L			09/11/14 18:11	1
Bromodichloromethane	ND		1.0		ug/L			09/11/14 18:11	1
Bromoform	ND		1.0		ug/L			09/11/14 18:11	1
Bromomethane	ND		1.0		ug/L			09/11/14 18:11	1
Carbon disulfide	ND		1.0		ug/L			09/11/14 18:11	1
Carbon tetrachloride	ND		1.0		ug/L			09/11/14 18:11	1
Chlorobenzene	ND		1.0		ug/L			09/11/14 18:11	1
Dibromochloromethane	ND		1.0		ug/L			09/11/14 18:11	1
Chloroethane	ND		1.0		ug/L			09/11/14 18:11	1
Chloroform	ND		1.0		ug/L			09/11/14 18:11	1
Chloromethane	ND		1.0		ug/L			09/11/14 18:11	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			09/11/14 18:11	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			09/11/14 18:11	1
Cyclohexane	ND		1.0		ug/L			09/11/14 18:11	1
Dichlorodifluoromethane	ND	*	1.0		ug/L			09/11/14 18:11	1
Ethylbenzene	ND		1.0		ug/L			09/11/14 18:11	1
Isopropylbenzene	ND		1.0		ug/L			09/11/14 18:11	1
Methyl acetate	ND		2.5		ug/L			09/11/14 18:11	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/11/14 18:11	1
Methylcyclohexane	ND		1.0		ug/L			09/11/14 18:11	1
Methylene Chloride	ND		1.0		ug/L			09/11/14 18:11	1
Styrene	ND		1.0		ug/L			09/11/14 18:11	1
Tetrachloroethene	ND		1.0		ug/L			09/11/14 18:11	1
Toluene	ND		1.0		ug/L			09/11/14 18:11	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			09/11/14 18:11	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			09/11/14 18:11	1
Trichloroethene	ND		1.0		ug/L			09/11/14 18:11	1
Trichlorofluoromethane	ND		1.0		ug/L			09/11/14 18:11	1
Vinyl chloride	ND		1.0		ug/L			09/11/14 18:11	1
Xylenes, Total	ND		2.0		ug/L			09/11/14 18:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*66 - 137*		*09/11/14 18:11*	*1*
Toluene-d8 (Surr)	*94*		*71 - 126*		*09/11/14 18:11*	*1*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*09/11/14 18:11*	*1*

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Client Sample ID: S-8
Date Collected: 08/28/14 10:30
Date Received: 08/30/14 09:00

Lab Sample ID: 480-66413-5
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			09/11/14 18:34	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			09/11/14 18:34	1
1,1,2-Trichloroethane	ND		1.0		ug/L			09/11/14 18:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			09/11/14 18:34	1
1,1-Dichloroethane	ND		1.0		ug/L			09/11/14 18:34	1
1,1-Dichloroethene	ND		1.0		ug/L			09/11/14 18:34	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			09/11/14 18:34	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			09/11/14 18:34	1
1,2-Dibromoethane	ND		1.0		ug/L			09/11/14 18:34	1
1,2-Dichlorobenzene	ND		1.0		ug/L			09/11/14 18:34	1
1,2-Dichloroethane	ND		1.0		ug/L			09/11/14 18:34	1
1,2-Dichloropropane	ND		1.0		ug/L			09/11/14 18:34	1
1,3-Dichlorobenzene	ND		1.0		ug/L			09/11/14 18:34	1
1,4-Dichlorobenzene	ND		1.0		ug/L			09/11/14 18:34	1
2-Hexanone	ND		5.0		ug/L			09/11/14 18:34	1
2-Butanone (MEK)	ND		10		ug/L			09/11/14 18:34	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/11/14 18:34	1
Acetone	ND		10		ug/L			09/11/14 18:34	1
Benzene	ND		1.0		ug/L			09/11/14 18:34	1
Bromodichloromethane	ND		1.0		ug/L			09/11/14 18:34	1
Bromoform	ND		1.0		ug/L			09/11/14 18:34	1
Bromomethane	ND		1.0		ug/L			09/11/14 18:34	1
Carbon disulfide	ND		1.0		ug/L			09/11/14 18:34	1
Carbon tetrachloride	ND		1.0		ug/L			09/11/14 18:34	1
Chlorobenzene	ND		1.0		ug/L			09/11/14 18:34	1
Dibromochloromethane	ND		1.0		ug/L			09/11/14 18:34	1
Chloroethane	ND		1.0		ug/L			09/11/14 18:34	1
Chloroform	ND		1.0		ug/L			09/11/14 18:34	1
Chloromethane	ND		1.0		ug/L			09/11/14 18:34	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			09/11/14 18:34	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			09/11/14 18:34	1
Cyclohexane	ND		1.0		ug/L			09/11/14 18:34	1
Dichlorodifluoromethane	ND	*	1.0		ug/L			09/11/14 18:34	1
Ethylbenzene	ND		1.0		ug/L			09/11/14 18:34	1
Isopropylbenzene	ND		1.0		ug/L			09/11/14 18:34	1
Methyl acetate	ND		2.5		ug/L			09/11/14 18:34	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/11/14 18:34	1
Methylcyclohexane	ND		1.0		ug/L			09/11/14 18:34	1
Methylene Chloride	ND		1.0		ug/L			09/11/14 18:34	1
Styrene	ND		1.0		ug/L			09/11/14 18:34	1
Tetrachloroethene	ND		1.0		ug/L			09/11/14 18:34	1
Toluene	ND		1.0		ug/L			09/11/14 18:34	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			09/11/14 18:34	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			09/11/14 18:34	1
Trichloroethene	ND		1.0		ug/L			09/11/14 18:34	1
Trichlorofluoromethane	ND		1.0		ug/L			09/11/14 18:34	1
Vinyl chloride	ND		1.0		ug/L			09/11/14 18:34	1
Xylenes, Total	ND		2.0		ug/L			09/11/14 18:34	1

Client Sample ID: S-8

Lab Sample ID: 480-66413-5

Date Collected: 08/28/14 10:30

Matrix: Water

Date Received: 08/30/14 09:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*89*		*66 - 137*		*09/11/14 18:34*	*1*
Toluene-d8 (Surr)	*93*		*71 - 126*		*09/11/14 18:34*	*1*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*09/11/14 18:34*	*1*

Client Sample ID: S-9

Lab Sample ID: 480-66413-6

Date Collected: 08/28/14 17:25

Matrix: Water

Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**10**		5.0		ug/L			09/11/14 18:58	5
1,1,2,2-Tetrachloroethane	ND		5.0		ug/L			09/11/14 18:58	5
1,1,2-Trichloroethane	ND		5.0		ug/L			09/11/14 18:58	5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0		ug/L			09/11/14 18:58	5
1,1-Dichloroethane	ND		5.0		ug/L			09/11/14 18:58	5
1,1-Dichloroethene	ND		5.0		ug/L			09/11/14 18:58	5
1,2,4-Trichlorobenzene	ND		5.0		ug/L			09/11/14 18:58	5
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			09/11/14 18:58	5
1,2-Dibromoethane	ND		5.0		ug/L			09/11/14 18:58	5
1,2-Dichlorobenzene	ND		5.0		ug/L			09/11/14 18:58	5
1,2-Dichloroethane	ND		5.0		ug/L			09/11/14 18:58	5
1,2-Dichloropropane	ND		5.0		ug/L			09/11/14 18:58	5
1,3-Dichlorobenzene	ND		5.0		ug/L			09/11/14 18:58	5
1,4-Dichlorobenzene	ND		5.0		ug/L			09/11/14 18:58	5
2-Hexanone	ND		25		ug/L			09/11/14 18:58	5
2-Butanone (MEK)	ND		50		ug/L			09/11/14 18:58	5
4-Methyl-2-pentanone (MIBK)	ND		25		ug/L			09/11/14 18:58	5
Acetone	ND		50		ug/L			09/11/14 18:58	5
Benzene	ND		5.0		ug/L			09/11/14 18:58	5
Bromodichloromethane	ND		5.0		ug/L			09/11/14 18:58	5
Bromoform	ND		5.0		ug/L			09/11/14 18:58	5
Bromomethane	ND		5.0		ug/L			09/11/14 18:58	5
Carbon disulfide	ND		5.0		ug/L			09/11/14 18:58	5
Carbon tetrachloride	ND		5.0		ug/L			09/11/14 18:58	5
Chlorobenzene	ND		5.0		ug/L			09/11/14 18:58	5
Dibromochloromethane	ND		5.0		ug/L			09/11/14 18:58	5
Chloroethane	ND		5.0		ug/L			09/11/14 18:58	5
Chloroform	ND		5.0		ug/L			09/11/14 18:58	5
Chloromethane	ND		5.0		ug/L			09/11/14 18:58	5
cis-1,2-Dichloroethene	**87**		5.0		ug/L			09/11/14 18:58	5
cis-1,3-Dichloropropene	ND		5.0		ug/L			09/11/14 18:58	5
Cyclohexane	ND		5.0		ug/L			09/11/14 18:58	5
Dichlorodifluoromethane	ND	*	5.0		ug/L			09/11/14 18:58	5
Ethylbenzene	ND		5.0		ug/L			09/11/14 18:58	5
Isopropylbenzene	ND		5.0		ug/L			09/11/14 18:58	5
Methyl acetate	ND		13		ug/L			09/11/14 18:58	5
Methyl tert-butyl ether	ND		5.0		ug/L			09/11/14 18:58	5
Methylcyclohexane	ND		5.0		ug/L			09/11/14 18:58	5
Methylene Chloride	ND		5.0		ug/L			09/11/14 18:58	5
Styrene	ND		5.0		ug/L			09/11/14 18:58	5

Client Sample ID: S-9
Date Collected: 08/28/14 17:25
Date Received: 08/30/14 09:00

Lab Sample ID: 480-66413-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		5.0		ug/L			09/11/14 18:58	5
Toluene	ND		5.0		ug/L			09/11/14 18:58	5
trans-1,2-Dichloroethene	ND		5.0		ug/L			09/11/14 18:58	5
trans-1,3-Dichloropropene	ND		5.0		ug/L			09/11/14 18:58	5
Trichloroethene	**810**	**E**	5.0		ug/L			09/11/14 18:58	5
Trichlorofluoromethane	ND		5.0		ug/L			09/11/14 18:58	5
Vinyl chloride	ND		5.0		ug/L			09/11/14 18:58	5
Xylenes, Total	ND		10		ug/L			09/11/14 18:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*78*		*66 - 137*		*09/11/14 18:58*	*5*
Toluene-d8 (Surr)	*94*		*71 - 126*		*09/11/14 18:58*	*5*
4-Bromofluorobenzene (Surr)	*92*		*73 - 120*		*09/11/14 18:58*	*5*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	10		ug/L			09/12/14 05:23	10
1,1,2,2-Tetrachloroethane	ND	H	10		ug/L			09/12/14 05:23	10
1,1,2-Trichloroethane	ND	H	10		ug/L			09/12/14 05:23	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H	10		ug/L			09/12/14 05:23	10
1,1-Dichloroethane	ND	H	10		ug/L			09/12/14 05:23	10
1,1-Dichloroethene	ND	H	10		ug/L			09/12/14 05:23	10
1,2,4-Trichlorobenzene	ND	H	10		ug/L			09/12/14 05:23	10
1,2-Dibromo-3-Chloropropane	ND	H	10		ug/L			09/12/14 05:23	10
1,2-Dibromoethane	ND	H	10		ug/L			09/12/14 05:23	10
1,2-Dichlorobenzene	ND	H	10		ug/L			09/12/14 05:23	10
1,2-Dichloroethane	ND	H	10		ug/L			09/12/14 05:23	10
1,2-Dichloropropane	ND	H	10		ug/L			09/12/14 05:23	10
1,3-Dichlorobenzene	ND	H	10		ug/L			09/12/14 05:23	10
1,4-Dichlorobenzene	ND	H	10		ug/L			09/12/14 05:23	10
2-Hexanone	ND	H	50		ug/L			09/12/14 05:23	10
2-Butanone (MEK)	ND	H	100		ug/L			09/12/14 05:23	10
4-Methyl-2-pentanone (MIBK)	ND	H *	50		ug/L			09/12/14 05:23	10
Acetone	ND	H	100		ug/L			09/12/14 05:23	10
Benzene	ND	H	10		ug/L			09/12/14 05:23	10
Bromodichloromethane	ND	H	10		ug/L			09/12/14 05:23	10
Bromoform	ND	H	10		ug/L			09/12/14 05:23	10
Bromomethane	ND	H	10		ug/L			09/12/14 05:23	10
Carbon disulfide	ND	H	10		ug/L			09/12/14 05:23	10
Carbon tetrachloride	ND	H	10		ug/L			09/12/14 05:23	10
Chlorobenzene	ND	H	10		ug/L			09/12/14 05:23	10
Dibromochloromethane	ND	H	10		ug/L			09/12/14 05:23	10
Chloroethane	ND	H	10		ug/L			09/12/14 05:23	10
Chloroform	ND	H	10		ug/L			09/12/14 05:23	10
Chloromethane	ND	H	10		ug/L			09/12/14 05:23	10
cis-1,2-Dichloroethene	**76**	**H**	10		ug/L			09/12/14 05:23	10
cis-1,3-Dichloropropene	ND	H	10		ug/L			09/12/14 05:23	10
Cyclohexane	ND	H	10		ug/L			09/12/14 05:23	10
Dichlorodifluoromethane	ND	H *	10		ug/L			09/12/14 05:23	10
Ethylbenzene	ND	H	10		ug/L			09/12/14 05:23	10

Client Sample ID: S-9 — **Lab Sample ID: 480-66413-6**
Date Collected: 08/28/14 17:25 — **Matrix: Water**
Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND	H	10		ug/L			09/12/14 05:23	10
Methyl acetate	ND	H	25		ug/L			09/12/14 05:23	10
Methyl tert-butyl ether	ND	H	10		ug/L			09/12/14 05:23	10
Methylcyclohexane	ND	H	10		ug/L			09/12/14 05:23	10
Methylene Chloride	ND	H	10		ug/L			09/12/14 05:23	10
Styrene	ND	H	10		ug/L			09/12/14 05:23	10
Tetrachloroethene	ND	H	10		ug/L			09/12/14 05:23	10
Toluene	ND	H	10		ug/L			09/12/14 05:23	10
trans-1,2-Dichloroethene	ND	H	10		ug/L			09/12/14 05:23	10
trans-1,3-Dichloropropene	ND	H	10		ug/L			09/12/14 05:23	10
Trichloroethene	**660**	**H**	10		ug/L			09/12/14 05:23	10
Trichlorofluoromethane	ND	H	10		ug/L			09/12/14 05:23	10
Vinyl chloride	ND	H	10		ug/L			09/12/14 05:23	10
Xylenes, Total	ND	H	20		ug/L			09/12/14 05:23	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*66 - 137*		*09/12/14 05:23*	*10*
Toluene-d8 (Surr)	*82*		*71 - 126*		*09/12/14 05:23*	*10*
4-Bromofluorobenzene (Surr)	*85*		*73 - 120*		*09/12/14 05:23*	*10*

Client Sample ID: MW-3 — **Lab Sample ID: 480-66413-7**
Date Collected: 08/28/14 17:00 — **Matrix: Water**
Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**11**		4.0		ug/L			09/11/14 19:22	4
1,1,2,2-Tetrachloroethane	ND		4.0		ug/L			09/11/14 19:22	4
1,1,2-Trichloroethane	ND		4.0		ug/L			09/11/14 19:22	4
1,1,2-Trichloro-1,2,2-trifluoroethane	**9.2**		4.0		ug/L			09/11/14 19:22	4
1,1-Dichloroethane	ND		4.0		ug/L			09/11/14 19:22	4
1,1-Dichloroethene	ND		4.0		ug/L			09/11/14 19:22	4
1,2,4-Trichlorobenzene	ND		4.0		ug/L			09/11/14 19:22	4
1,2-Dibromo-3-Chloropropane	ND		4.0		ug/L			09/11/14 19:22	4
1,2-Dibromoethane	ND		4.0		ug/L			09/11/14 19:22	4
1,2-Dichlorobenzene	ND		4.0		ug/L			09/11/14 19:22	4
1,2-Dichloroethane	ND		4.0		ug/L			09/11/14 19:22	4
1,2-Dichloropropane	ND		4.0		ug/L			09/11/14 19:22	4
1,3-Dichlorobenzene	ND		4.0		ug/L			09/11/14 19:22	4
1,4-Dichlorobenzene	ND		4.0		ug/L			09/11/14 19:22	4
2-Hexanone	ND		20		ug/L			09/11/14 19:22	4
2-Butanone (MEK)	ND		40		ug/L			09/11/14 19:22	4
4-Methyl-2-pentanone (MIBK)	ND		20		ug/L			09/11/14 19:22	4
Acetone	ND		40		ug/L			09/11/14 19:22	4
Benzene	ND		4.0		ug/L			09/11/14 19:22	4
Bromodichloromethane	ND		4.0		ug/L			09/11/14 19:22	4
Bromoform	ND		4.0		ug/L			09/11/14 19:22	4
Bromomethane	ND		4.0		ug/L			09/11/14 19:22	4
Carbon disulfide	ND		4.0		ug/L			09/11/14 19:22	4

Client Sample ID: MW-3

Lab Sample ID: 480-66413-7

Date Collected: 08/28/14 17:00

Matrix: Water

Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		4.0		ug/L			09/11/14 19:22	4
Chlorobenzene	ND		4.0		ug/L			09/11/14 19:22	4
Dibromochloromethane	ND		4.0		ug/L			09/11/14 19:22	4
Chloroethane	ND		4.0		ug/L			09/11/14 19:22	4
Chloroform	ND		4.0		ug/L			09/11/14 19:22	4
Chloromethane	ND		4.0		ug/L			09/11/14 19:22	4
cis-1,2-Dichloroethene	**36**		4.0		ug/L			09/11/14 19:22	4
cis-1,3-Dichloropropene	ND		4.0		ug/L			09/11/14 19:22	4
Cyclohexane	ND		4.0		ug/L			09/11/14 19:22	4
Dichlorodifluoromethane	ND	*	4.0		ug/L			09/11/14 19:22	4
Ethylbenzene	ND		4.0		ug/L			09/11/14 19:22	4
Isopropylbenzene	ND		4.0		ug/L			09/11/14 19:22	4
Methyl acetate	ND		10		ug/L			09/11/14 19:22	4
Methyl tert-butyl ether	ND		4.0		ug/L			09/11/14 19:22	4
Methylcyclohexane	ND		4.0		ug/L			09/11/14 19:22	4
Methylene Chloride	ND		4.0		ug/L			09/11/14 19:22	4
Styrene	ND		4.0		ug/L			09/11/14 19:22	4
Tetrachloroethene	ND		4.0		ug/L			09/11/14 19:22	4
Toluene	ND		4.0		ug/L			09/11/14 19:22	4
trans-1,2-Dichloroethene	ND		4.0		ug/L			09/11/14 19:22	4
trans-1,3-Dichloropropene	ND		4.0		ug/L			09/11/14 19:22	4
Trichloroethene	**160**		4.0		ug/L			09/11/14 19:22	4
Trichlorofluoromethane	ND		4.0		ug/L			09/11/14 19:22	4
Vinyl chloride	ND		4.0		ug/L			09/11/14 19:22	4
Xylenes, Total	ND		8.0		ug/L			09/11/14 19:22	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*66 - 137*		*09/11/14 19:22*	*4*
Toluene-d8 (Surr)	*88*		*71 - 126*		*09/11/14 19:22*	*4*
4-Bromofluorobenzene (Surr)	*88*		*73 - 120*		*09/11/14 19:22*	*4*

Client Sample ID: CHA-1

Lab Sample ID: 480-66413-8

Date Collected: 08/28/14 14:30

Matrix: Water

Date Received: 08/30/14 09:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		200		ug/L			09/11/14 19:46	200
1,1,2,2-Tetrachloroethane	ND		200		ug/L			09/11/14 19:46	200
1,1,2-Trichloroethane	ND		200		ug/L			09/11/14 19:46	200
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		200		ug/L			09/11/14 19:46	200
1,1-Dichloroethane	ND		200		ug/L			09/11/14 19:46	200
1,1-Dichloroethene	ND		200		ug/L			09/11/14 19:46	200
1,2,4-Trichlorobenzene	ND		200		ug/L			09/11/14 19:46	200
1,2-Dibromo-3-Chloropropane	ND		200		ug/L			09/11/14 19:46	200
1,2-Dibromoethane	ND		200		ug/L			09/11/14 19:46	200
1,2-Dichlorobenzene	ND		200		ug/L			09/11/14 19:46	200
1,2-Dichloroethane	ND		200		ug/L			09/11/14 19:46	200
1,2-Dichloropropane	ND		200		ug/L			09/11/14 19:46	200
1,3-Dichlorobenzene	ND		200		ug/L			09/11/14 19:46	200

Client Sample ID: CHA-1
Date Collected: 08/28/14 14:30
Date Received: 08/30/14 09:00

Lab Sample ID: 480-66413-8
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		200		ug/L			09/11/14 19:46	200
2-Hexanone	ND		1000		ug/L			09/11/14 19:46	200
2-Butanone (MEK)	ND		2000		ug/L			09/11/14 19:46	200
4-Methyl-2-pentanone (MIBK)	ND		1000		ug/L			09/11/14 19:46	200
Acetone	ND		2000		ug/L			09/11/14 19:46	200
Benzene	ND		200		ug/L			09/11/14 19:46	200
Bromodichloromethane	ND		200		ug/L			09/11/14 19:46	200
Bromoform	ND		200		ug/L			09/11/14 19:46	200
Bromomethane	ND		200		ug/L			09/11/14 19:46	200
Carbon disulfide	ND		200		ug/L			09/11/14 19:46	200
Carbon tetrachloride	ND		200		ug/L			09/11/14 19:46	200
Chlorobenzene	ND		200		ug/L			09/11/14 19:46	200
Dibromochloromethane	ND		200		ug/L			09/11/14 19:46	200
Chloroethane	ND		200		ug/L			09/11/14 19:46	200
Chloroform	ND		200		ug/L			09/11/14 19:46	200
Chloromethane	ND		200		ug/L			09/11/14 19:46	200
cis-1,2-Dichloroethene	ND		200		ug/L			09/11/14 19:46	200
cis-1,3-Dichloropropene	ND		200		ug/L			09/11/14 19:46	200
Cyclohexane	ND		200		ug/L			09/11/14 19:46	200
Dichlorodifluoromethane	ND	*	200		ug/L			09/11/14 19:46	200
Ethylbenzene	ND		200		ug/L			09/11/14 19:46	200
Isopropylbenzene	ND		200		ug/L			09/11/14 19:46	200
Methyl acetate	ND		500		ug/L			09/11/14 19:46	200
Methyl tert-butyl ether	ND		200		ug/L			09/11/14 19:46	200
Methylcyclohexane	ND		200		ug/L			09/11/14 19:46	200
Methylene Chloride	ND		200		ug/L			09/11/14 19:46	200
Styrene	ND		200		ug/L			09/11/14 19:46	200
Tetrachloroethene	ND		200		ug/L			09/11/14 19:46	200
Toluene	ND		200		ug/L			09/11/14 19:46	200
trans-1,2-Dichloroethene	ND		200		ug/L			09/11/14 19:46	200
trans-1,3-Dichloropropene	ND		200		ug/L			09/11/14 19:46	200
Trichloroethene	ND		200		ug/L			09/11/14 19:46	200
Trichlorofluoromethane	ND		200		ug/L			09/11/14 19:46	200
Vinyl chloride	ND		200		ug/L			09/11/14 19:46	200
Xylenes, Total	ND		400		ug/L			09/11/14 19:46	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*78*		*66 - 137*		*09/11/14 19:46*	*200*
Toluene-d8 (Surr)	*107*		*71 - 126*		*09/11/14 19:46*	*200*
4-Bromofluorobenzene (Surr)	*96*		*73 - 120*		*09/11/14 19:46*	*200*

Method: 8260C - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**26**	**H**	5.0		ug/L			09/12/14 05:47	5
1,1,2,2-Tetrachloroethane	**13**	**H**	5.0		ug/L			09/12/14 05:47	5
1,1,2-Trichloroethane	ND	H	5.0		ug/L			09/12/14 05:47	5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H	5.0		ug/L			09/12/14 05:47	5
1,1-Dichloroethane	**5.6**	**H**	5.0		ug/L			09/12/14 05:47	5
1,1-Dichloroethene	ND	H	5.0		ug/L			09/12/14 05:47	5
1,2,4-Trichlorobenzene	ND	H	5.0		ug/L			09/12/14 05:47	5

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Client Sample ID: CHA-1
Date Collected: 08/28/14 14:30
Date Received: 08/30/14 09:00

Lab Sample ID: 480-66413-8
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS - RA (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	ND	H	5.0		ug/L			09/12/14 05:47	5
1,2-Dibromoethane	ND	H	5.0		ug/L			09/12/14 05:47	5
1,2-Dichlorobenzene	ND	H	5.0		ug/L			09/12/14 05:47	5
1,2-Dichloroethane	ND	H	5.0		ug/L			09/12/14 05:47	5
1,2-Dichloropropane	ND	H	5.0		ug/L			09/12/14 05:47	5
1,3-Dichlorobenzene	ND	H	5.0		ug/L			09/12/14 05:47	5
1,4-Dichlorobenzene	ND	H	5.0		ug/L			09/12/14 05:47	5
2-Hexanone	ND	H	25		ug/L			09/12/14 05:47	5
2-Butanone (MEK)	ND	H	50		ug/L			09/12/14 05:47	5
4-Methyl-2-pentanone (MIBK)	ND	H *	25		ug/L			09/12/14 05:47	5
Acetone	**170**	**H**	50		ug/L			09/12/14 05:47	5
Benzene	ND	H	5.0		ug/L			09/12/14 05:47	5
Bromodichloromethane	ND	H	5.0		ug/L			09/12/14 05:47	5
Bromoform	ND	H	5.0		ug/L			09/12/14 05:47	5
Bromomethane	**7.1**	**H**	5.0		ug/L			09/12/14 05:47	5
Carbon disulfide	**10**	**H**	5.0		ug/L			09/12/14 05:47	5
Carbon tetrachloride	ND	H	5.0		ug/L			09/12/14 05:47	5
Chlorobenzene	ND	H	5.0		ug/L			09/12/14 05:47	5
Dibromochloromethane	ND	H	5.0		ug/L			09/12/14 05:47	5
Chloroethane	ND	H	5.0		ug/L			09/12/14 05:47	5
Chloroform	ND	H	5.0		ug/L			09/12/14 05:47	5
Chloromethane	**12**	**H**	5.0		ug/L			09/12/14 05:47	5
cis-1,2-Dichloroethene	ND	H	5.0		ug/L			09/12/14 05:47	5
cis-1,3-Dichloropropene	ND	H	5.0		ug/L			09/12/14 05:47	5
Cyclohexane	ND	H	5.0		ug/L			09/12/14 05:47	5
Dichlorodifluoromethane	ND	H *	5.0		ug/L			09/12/14 05:47	5
Ethylbenzene	ND	H	5.0		ug/L			09/12/14 05:47	5
Isopropylbenzene	ND	H	5.0		ug/L			09/12/14 05:47	5
Methyl acetate	ND	H	13		ug/L			09/12/14 05:47	5
Methyl tert-butyl ether	ND	H	5.0		ug/L			09/12/14 05:47	5
Methylcyclohexane	ND	H	5.0		ug/L			09/12/14 05:47	5
Methylene Chloride	ND	H	5.0		ug/L			09/12/14 05:47	5
Styrene	ND	H	5.0		ug/L			09/12/14 05:47	5
Tetrachloroethene	ND	H	5.0		ug/L			09/12/14 05:47	5
Toluene	ND	H	5.0		ug/L			09/12/14 05:47	5
trans-1,2-Dichloroethene	ND	H	5.0		ug/L			09/12/14 05:47	5
trans-1,3-Dichloropropene	ND	H	5.0		ug/L			09/12/14 05:47	5
Trichloroethene	**5.7**	**H**	5.0		ug/L			09/12/14 05:47	5
Trichlorofluoromethane	ND	H	5.0		ug/L			09/12/14 05:47	5
Vinyl chloride	ND	H	5.0		ug/L			09/12/14 05:47	5
Xylenes, Total	ND	H	10		ug/L			09/12/14 05:47	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*66 - 137*		*09/12/14 05:47*	*5*
Toluene-d8 (Surr)	*83*		*71 - 126*		*09/12/14 05:47*	*5*
4-Bromofluorobenzene (Surr)	*86*		*73 - 120*		*09/12/14 05:47*	*5*

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Client Sample ID: TRIP BLANK
Date Collected: 08/28/14 00:00
Date Received: 08/30/14 09:00

Lab Sample ID: 480-66413-9
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			09/11/14 20:10	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			09/11/14 20:10	1
1,1,2-Trichloroethane	ND		1.0		ug/L			09/11/14 20:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			09/11/14 20:10	1
1,1-Dichloroethane	ND		1.0		ug/L			09/11/14 20:10	1
1,1-Dichloroethene	ND		1.0		ug/L			09/11/14 20:10	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			09/11/14 20:10	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			09/11/14 20:10	1
1,2-Dibromoethane	ND		1.0		ug/L			09/11/14 20:10	1
1,2-Dichlorobenzene	ND		1.0		ug/L			09/11/14 20:10	1
1,2-Dichloroethane	ND		1.0		ug/L			09/11/14 20:10	1
1,2-Dichloropropane	ND		1.0		ug/L			09/11/14 20:10	1
1,3-Dichlorobenzene	ND		1.0		ug/L			09/11/14 20:10	1
1,4-Dichlorobenzene	ND		1.0		ug/L			09/11/14 20:10	1
2-Hexanone	ND		5.0		ug/L			09/11/14 20:10	1
2-Butanone (MEK)	ND		10		ug/L			09/11/14 20:10	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/11/14 20:10	1
Acetone	ND		10		ug/L			09/11/14 20:10	1
Benzene	ND		1.0		ug/L			09/11/14 20:10	1
Bromodichloromethane	ND		1.0		ug/L			09/11/14 20:10	1
Bromoform	ND		1.0		ug/L			09/11/14 20:10	1
Bromomethane	ND		1.0		ug/L			09/11/14 20:10	1
Carbon disulfide	ND		1.0		ug/L			09/11/14 20:10	1
Carbon tetrachloride	ND		1.0		ug/L			09/11/14 20:10	1
Chlorobenzene	ND		1.0		ug/L			09/11/14 20:10	1
Dibromochloromethane	ND		1.0		ug/L			09/11/14 20:10	1
Chloroethane	ND		1.0		ug/L			09/11/14 20:10	1
Chloroform	ND		1.0		ug/L			09/11/14 20:10	1
Chloromethane	ND		1.0		ug/L			09/11/14 20:10	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			09/11/14 20:10	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			09/11/14 20:10	1
Cyclohexane	ND		1.0		ug/L			09/11/14 20:10	1
Dichlorodifluoromethane	ND	*	1.0		ug/L			09/11/14 20:10	1
Ethylbenzene	ND		1.0		ug/L			09/11/14 20:10	1
Isopropylbenzene	ND		1.0		ug/L			09/11/14 20:10	1
Methyl acetate	ND		2.5		ug/L			09/11/14 20:10	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/11/14 20:10	1
Methylcyclohexane	ND		1.0		ug/L			09/11/14 20:10	1
Methylene Chloride	ND		1.0		ug/L			09/11/14 20:10	1
Styrene	ND		1.0		ug/L			09/11/14 20:10	1
Tetrachloroethene	ND		1.0		ug/L			09/11/14 20:10	1
Toluene	ND		1.0		ug/L			09/11/14 20:10	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			09/11/14 20:10	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			09/11/14 20:10	1
Trichloroethene	ND		1.0		ug/L			09/11/14 20:10	1
Trichlorofluoromethane	ND		1.0		ug/L			09/11/14 20:10	1
Vinyl chloride	ND		1.0		ug/L			09/11/14 20:10	1
Xylenes, Total	ND		2.0		ug/L			09/11/14 20:10	1

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Client Sample ID: TRIP BLANK
Date Collected: 08/28/14 00:00
Date Received: 08/30/14 09:00

Lab Sample ID: 480-66413-9
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		66 - 137		09/11/14 20:10	1
Toluene-d8 (Surr)	90		71 - 126		09/11/14 20:10	1
4-Bromofluorobenzene (Surr)	87		73 - 120		09/11/14 20:10	1

Surrogate Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	12DCE (66-137)	TOL (71-126)	BFB (73-120)
480-66413-1	SUMP	74	88	81
480-66413-1 - RA	SUMP	84	91	94
480-66413-1 MS	SUMP	86	88	90
480-66413-1 MSD	SUMP	83	89	98
480-66413-2	S-2	87	91	105
480-66413-2 - RA	S-2	83	93	93
480-66413-3	S-4	89	92	93
480-66413-4	S-7	86	94	98
480-66413-5	S-8	89	93	100
480-66413-6	S-9	78	94	92
480-66413-6 - DL	S-9	86	82	85
480-66413-7	MW-3	86	88	88
480-66413-8	CHA-1	78	107	96
480-66413-8 - RA	CHA-1	86	83	86
480-66413-9	TRIP BLANK	87	90	87
LCS 480-201883/4	Lab Control Sample	90	90	95
LCS 480-202028/4	Lab Control Sample	82	82	84
MB 480-201883/6	Method Blank	89	95	84
MB 480-202028/6	Method Blank	84	93	97

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-201883/6
Matrix: Water
Analysis Batch: 201883

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			09/11/14 13:18	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			09/11/14 13:18	1
1,1,2-Trichloroethane	ND		1.0		ug/L			09/11/14 13:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			09/11/14 13:18	1
1,1-Dichloroethane	ND		1.0		ug/L			09/11/14 13:18	1
1,1-Dichloroethene	ND		1.0		ug/L			09/11/14 13:18	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			09/11/14 13:18	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			09/11/14 13:18	1
1,2-Dibromoethane	ND		1.0		ug/L			09/11/14 13:18	1
1,2-Dichlorobenzene	ND		1.0		ug/L			09/11/14 13:18	1
1,2-Dichloroethane	ND		1.0		ug/L			09/11/14 13:18	1
1,2-Dichloropropane	ND		1.0		ug/L			09/11/14 13:18	1
1,3-Dichlorobenzene	ND		1.0		ug/L			09/11/14 13:18	1
1,4-Dichlorobenzene	ND		1.0		ug/L			09/11/14 13:18	1
2-Hexanone	ND		5.0		ug/L			09/11/14 13:18	1
2-Butanone (MEK)	ND		10		ug/L			09/11/14 13:18	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/11/14 13:18	1
Acetone	ND		10		ug/L			09/11/14 13:18	1
Benzene	ND		1.0		ug/L			09/11/14 13:18	1
Bromodichloromethane	ND		1.0		ug/L			09/11/14 13:18	1
Bromoform	ND		1.0		ug/L			09/11/14 13:18	1
Bromomethane	ND		1.0		ug/L			09/11/14 13:18	1
Carbon disulfide	ND		1.0		ug/L			09/11/14 13:18	1
Carbon tetrachloride	ND		1.0		ug/L			09/11/14 13:18	1
Chlorobenzene	ND		1.0		ug/L			09/11/14 13:18	1
Dibromochloromethane	ND		1.0		ug/L			09/11/14 13:18	1
Chloroethane	ND		1.0		ug/L			09/11/14 13:18	1
Chloroform	ND		1.0		ug/L			09/11/14 13:18	1
Chloromethane	ND		1.0		ug/L			09/11/14 13:18	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			09/11/14 13:18	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			09/11/14 13:18	1
Cyclohexane	ND		1.0		ug/L			09/11/14 13:18	1
Dichlorodifluoromethane	ND		1.0		ug/L			09/11/14 13:18	1
Ethylbenzene	ND		1.0		ug/L			09/11/14 13:18	1
Isopropylbenzene	ND		1.0		ug/L			09/11/14 13:18	1
Methyl acetate	ND		2.5		ug/L			09/11/14 13:18	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/11/14 13:18	1
Methylcyclohexane	ND		1.0		ug/L			09/11/14 13:18	1
Methylene Chloride	ND		1.0		ug/L			09/11/14 13:18	1
Styrene	ND		1.0		ug/L			09/11/14 13:18	1
Tetrachloroethene	ND		1.0		ug/L			09/11/14 13:18	1
Toluene	ND		1.0		ug/L			09/11/14 13:18	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			09/11/14 13:18	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			09/11/14 13:18	1
Trichloroethene	ND		1.0		ug/L			09/11/14 13:18	1
Trichlorofluoromethane	ND		1.0		ug/L			09/11/14 13:18	1
Vinyl chloride	ND		1.0		ug/L			09/11/14 13:18	1
Xylenes, Total	ND		2.0		ug/L			09/11/14 13:18	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-201883/6
Matrix: Water
Analysis Batch: 201883

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*89*		*66 - 137*		*09/11/14 13:18*	*1*
Toluene-d8 (Surr)	*95*		*71 - 126*		*09/11/14 13:18*	*1*
4-Bromofluorobenzene (Surr)	*84*		*73 - 120*		*09/11/14 13:18*	*1*

Lab Sample ID: LCS 480-201883/4
Matrix: Water
Analysis Batch: 201883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	25.0	24.1		ug/L		96	71 - 129
1,1-Dichloroethene	25.0	26.4		ug/L		106	58 - 121
1,2-Dichlorobenzene	25.0	25.8		ug/L		103	80 - 124
1,2-Dichloroethane	25.0	24.8		ug/L		99	75 - 127
Benzene	25.0	25.4		ug/L		102	71 - 124
Chlorobenzene	25.0	25.0		ug/L		100	72 - 120
cis-1,2-Dichloroethene	25.0	25.2		ug/L		101	74 - 124
Ethylbenzene	25.0	24.3		ug/L		97	77 - 123
Methyl tert-butyl ether	25.0	24.8		ug/L		99	64 - 127
Tetrachloroethene	25.0	23.5		ug/L		94	74 - 122
Toluene	25.0	24.0		ug/L		96	80 - 122
trans-1,2-Dichloroethene	25.0	25.6		ug/L		102	73 - 127
Trichloroethene	25.0	26.7		ug/L		107	74 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*90*		*66 - 137*
Toluene-d8 (Surr)	*90*		*71 - 126*
4-Bromofluorobenzene (Surr)	*95*		*73 - 120*

Lab Sample ID: MB 480-202028/6
Matrix: Water
Analysis Batch: 202028

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			09/12/14 00:45	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			09/12/14 00:45	1
1,1,2-Trichloroethane	ND		1.0		ug/L			09/12/14 00:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			09/12/14 00:45	1
1,1-Dichloroethane	ND		1.0		ug/L			09/12/14 00:45	1
1,1-Dichloroethene	ND		1.0		ug/L			09/12/14 00:45	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			09/12/14 00:45	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			09/12/14 00:45	1
1,2-Dibromoethane	ND		1.0		ug/L			09/12/14 00:45	1
1,2-Dichlorobenzene	ND		1.0		ug/L			09/12/14 00:45	1
1,2-Dichloroethane	ND		1.0		ug/L			09/12/14 00:45	1
1,2-Dichloropropane	ND		1.0		ug/L			09/12/14 00:45	1
1,3-Dichlorobenzene	ND		1.0		ug/L			09/12/14 00:45	1
1,4-Dichlorobenzene	ND		1.0		ug/L			09/12/14 00:45	1
2-Hexanone	ND		5.0		ug/L			09/12/14 00:45	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-202028/6
Matrix: Water
Analysis Batch: 202028

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		10		ug/L			09/12/14 00:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			09/12/14 00:45	1
Acetone	ND		10		ug/L			09/12/14 00:45	1
Benzene	ND		1.0		ug/L			09/12/14 00:45	1
Bromodichloromethane	ND		1.0		ug/L			09/12/14 00:45	1
Bromoform	ND		1.0		ug/L			09/12/14 00:45	1
Bromomethane	ND		1.0		ug/L			09/12/14 00:45	1
Carbon disulfide	ND		1.0		ug/L			09/12/14 00:45	1
Carbon tetrachloride	ND		1.0		ug/L			09/12/14 00:45	1
Chlorobenzene	ND		1.0		ug/L			09/12/14 00:45	1
Dibromochloromethane	ND		1.0		ug/L			09/12/14 00:45	1
Chloroethane	ND		1.0		ug/L			09/12/14 00:45	1
Chloroform	ND		1.0		ug/L			09/12/14 00:45	1
Chloromethane	ND		1.0		ug/L			09/12/14 00:45	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			09/12/14 00:45	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			09/12/14 00:45	1
Cyclohexane	ND		1.0		ug/L			09/12/14 00:45	1
Dichlorodifluoromethane	ND		1.0		ug/L			09/12/14 00:45	1
Ethylbenzene	ND		1.0		ug/L			09/12/14 00:45	1
Isopropylbenzene	ND		1.0		ug/L			09/12/14 00:45	1
Methyl acetate	ND		2.5		ug/L			09/12/14 00:45	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/12/14 00:45	1
Methylcyclohexane	ND		1.0		ug/L			09/12/14 00:45	1
Methylene Chloride	ND		1.0		ug/L			09/12/14 00:45	1
Styrene	ND		1.0		ug/L			09/12/14 00:45	1
Tetrachloroethene	ND		1.0		ug/L			09/12/14 00:45	1
Toluene	ND		1.0		ug/L			09/12/14 00:45	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			09/12/14 00:45	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			09/12/14 00:45	1
Trichloroethene	ND		1.0		ug/L			09/12/14 00:45	1
Trichlorofluoromethane	ND		1.0		ug/L			09/12/14 00:45	1
Vinyl chloride	ND		1.0		ug/L			09/12/14 00:45	1
Xylenes, Total	ND		2.0		ug/L			09/12/14 00:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*66 - 137*		*09/12/14 00:45*	*1*
Toluene-d8 (Surr)	*93*		*71 - 126*		*09/12/14 00:45*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*09/12/14 00:45*	*1*

Lab Sample ID: LCS 480-202028/4
Matrix: Water
Analysis Batch: 202028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	25.0	20.6		ug/L		83	71 - 129
1,1-Dichloroethene	25.0	27.9		ug/L		111	58 - 121
1,2-Dichlorobenzene	25.0	23.8		ug/L		95	80 - 124
1,2-Dichloroethane	25.0	21.1		ug/L		84	75 - 127

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-202028/4
Matrix: Water
Analysis Batch: 202028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	22.7		ug/L		91	71 - 124
Chlorobenzene	25.0	22.7		ug/L		91	72 - 120
cis-1,2-Dichloroethene	25.0	22.8		ug/L		91	74 - 124
Ethylbenzene	25.0	23.2		ug/L		93	77 - 123
Methyl tert-butyl ether	25.0	22.5		ug/L		90	64 - 127
Tetrachloroethene	25.0	20.1		ug/L		80	74 - 122
Toluene	25.0	20.6		ug/L		82	80 - 122
trans-1,2-Dichloroethene	25.0	22.0		ug/L		88	73 - 127
Trichloroethene	25.0	23.9		ug/L		96	74 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*82*		*66 - 137*
Toluene-d8 (Surr)	*82*		*71 - 126*
4-Bromofluorobenzene (Surr)	*84*		*73 - 120*

Lab Sample ID: 480-66413-1 MS
Matrix: Water
Analysis Batch: 202028

Client Sample ID: SUMP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	ND	H	625	457		ug/L		73	71 - 129
1,1-Dichloroethene	ND	H	625	512		ug/L		82	58 - 121
1,2-Dichlorobenzene	ND	H	625	570		ug/L		91	80 - 124
1,2-Dichloroethane	ND	H	625	546		ug/L		87	75 - 127
Benzene	ND	H	625	488		ug/L		78	71 - 124
Chlorobenzene	ND	H	625	505		ug/L		81	72 - 120
cis-1,2-Dichloroethene	ND	H	625	492		ug/L		79	74 - 124
Ethylbenzene	ND	H	625	425	F1	ug/L		68	77 - 123
Methyl tert-butyl ether	ND	H	625	469		ug/L		75	64 - 127
Tetrachloroethene	ND	H	625	534		ug/L		85	74 - 122
Toluene	ND	H	625	416	F1	ug/L		67	80 - 122
trans-1,2-Dichloroethene	ND	H	625	473		ug/L		76	73 - 127
Trichloroethene	ND	H	625	535		ug/L		86	74 - 123

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*66 - 137*
Toluene-d8 (Surr)	*88*		*71 - 126*
4-Bromofluorobenzene (Surr)	*90*		*73 - 120*

Lab Sample ID: 480-66413-1 MSD
Matrix: Water
Analysis Batch: 202028

Client Sample ID: SUMP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethane	ND	H	625	508		ug/L		81	71 - 129	11	20
1,1-Dichloroethene	ND	H	625	524		ug/L		84	58 - 121	2	16
1,2-Dichlorobenzene	ND	H	625	558		ug/L		89	80 - 124	2	20
1,2-Dichloroethane	ND	H	625	521		ug/L		83	75 - 127	5	20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-66413-1 MSD
Matrix: Water
Analysis Batch: 202028

Client Sample ID: SUMP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND	H	625	465		ug/L		74	71 - 124	5	13
Chlorobenzene	ND	H	625	488		ug/L		78	72 - 120	3	25
cis-1,2-Dichloroethene	ND	H	625	549		ug/L		88	74 - 124	11	15
Ethylbenzene	ND	H	625	398	F1	ug/L		64	77 - 123	7	15
Methyl tert-butyl ether	ND	H	625	534		ug/L		85	64 - 127	13	37
Tetrachloroethene	ND	H	625	482		ug/L		77	74 - 122	10	20
Toluene	ND	H	625	407	F1	ug/L		65	80 - 122	2	15
trans-1,2-Dichloroethene	ND	H	625	516		ug/L		83	73 - 127	9	20
Trichloroethene	ND	H	625	577		ug/L		92	74 - 123	7	16

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*66 - 137*
Toluene-d8 (Surr)	*89*		*71 - 126*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*

QC Association Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

GC/MS VOA

Analysis Batch: 201883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-66413-1	SUMP	Total/NA	Water	8260C	
480-66413-2	S-2	Total/NA	Water	8260C	
480-66413-3	S-4	Total/NA	Water	8260C	
480-66413-4	S-7	Total/NA	Water	8260C	
480-66413-5	S-8	Total/NA	Water	8260C	
480-66413-6	S-9	Total/NA	Water	8260C	
480-66413-7	MW-3	Total/NA	Water	8260C	
480-66413-8	CHA-1	Total/NA	Water	8260C	
480-66413-9	TRIP BLANK	Total/NA	Water	8260C	
LCS 480-201883/4	Lab Control Sample	Total/NA	Water	8260C	
MB 480-201883/6	Method Blank	Total/NA	Water	8260C	

Analysis Batch: 202028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-66413-1 - RA	SUMP	Total/NA	Water	8260C	
480-66413-1 MS	SUMP	Total/NA	Water	8260C	
480-66413-1 MSD	SUMP	Total/NA	Water	8260C	
480-66413-2 - RA	S-2	Total/NA	Water	8260C	
480-66413-6 - DL	S-9	Total/NA	Water	8260C	
480-66413-8 - RA	CHA-1	Total/NA	Water	8260C	
LCS 480-202028/4	Lab Control Sample	Total/NA	Water	8260C	
MB 480-202028/6	Method Blank	Total/NA	Water	8260C	

Lab Chronicle

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Client Sample ID: SUMP
Lab Sample ID: 480-66413-1
Date Collected: 08/28/14 17:05
Matrix: Water
Date Received: 08/30/14 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		80	201883	09/11/14 16:59	GTG	TAL BUF
Total/NA	Analysis	8260C	RA	25	202028	09/12/14 04:35	EDB	TAL BUF

Client Sample ID: S-2
Lab Sample ID: 480-66413-2
Date Collected: 08/28/14 15:00
Matrix: Water
Date Received: 08/30/14 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		200	201883	09/11/14 17:23	GTG	TAL BUF
Total/NA	Analysis	8260C	RA	5	202028	09/12/14 04:59	EDB	TAL BUF

Client Sample ID: S-4
Lab Sample ID: 480-66413-3
Date Collected: 08/28/14 12:00
Matrix: Water
Date Received: 08/30/14 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	201883	09/11/14 17:47	GTG	TAL BUF

Client Sample ID: S-7
Lab Sample ID: 480-66413-4
Date Collected: 08/28/14 13:05
Matrix: Water
Date Received: 08/30/14 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	201883	09/11/14 18:11	GTG	TAL BUF

Client Sample ID: S-8
Lab Sample ID: 480-66413-5
Date Collected: 08/28/14 10:30
Matrix: Water
Date Received: 08/30/14 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	201883	09/11/14 18:34	GTG	TAL BUF

Client Sample ID: S-9
Lab Sample ID: 480-66413-6
Date Collected: 08/28/14 17:25
Matrix: Water
Date Received: 08/30/14 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		5	201883	09/11/14 18:58	GTG	TAL BUF
Total/NA	Analysis	8260C	DL	10	202028	09/12/14 05:23	EDB	TAL BUF

Lab Chronicle

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Client Sample ID: MW-3

Lab Sample ID: 480-66413-7

Date Collected: 08/28/14 17:00

Matrix: Water

Date Received: 08/30/14 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	201883	09/11/14 19:22	GTG	TAL BUF

Client Sample ID: CHA-1

Lab Sample ID: 480-66413-8

Date Collected: 08/28/14 14:30

Matrix: Water

Date Received: 08/30/14 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		200	201883	09/11/14 19:46	GTG	TAL BUF
Total/NA	Analysis	8260C	RA	5	202028	09/12/14 05:47	EDB	TAL BUF

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-66413-9

Date Collected: 08/28/14 00:00

Matrix: Water

Date Received: 08/30/14 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	201883	09/11/14 20:10	GTG	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Laboratory: TestAmerica Buffalo

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10026	03-31-15

Method Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-66413-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-66413-1	SUMP	Water	08/28/14 17:05	08/30/14 09:00
480-66413-2	S-2	Water	08/28/14 15:00	08/30/14 09:00
480-66413-3	S-4	Water	08/28/14 12:00	08/30/14 09:00
480-66413-4	S-7	Water	08/28/14 13:05	08/30/14 09:00
480-66413-5	S-8	Water	08/28/14 10:30	08/30/14 09:00
480-66413-6	S-9	Water	08/28/14 17:25	08/30/14 09:00
480-66413-7	MW-3	Water	08/28/14 17:00	08/30/14 09:00
480-66413-8	CHA-1	Water	08/28/14 14:30	08/30/14 09:00
480-66413-9	TRIP BLANK	Water	08/28/14 00:00	08/30/14 09:00

TestAmerica Albany
25 Kraft Road
Albany, NY 12205

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: W. Pierce/J. Favreau	Lab PM: Stone, Judy L	Carrier Tracking No(s):	COC No: 480-54092-14319.1
Client Contact: Mr. John Favreau	Phone: (518) 453-4800	E-Mail: judy.stone@testamericainc.com		Page: Page 1 of 1
Company: CHA Inc		Analysis Requested		Job #:
Address: 111 Winner Circle PO BOX 5269	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
City: Albany	TAT Requested (days): STANDARD			
State, Zip: NY, 12205-0269	PO #: 22154.4000.44000			
Phone: 518-453-8795(Tel)	WO #:			Other:
Email: jfavreau@chacompanies.com	Project #: 48003868			
Project Name: Former Interceram Site	SSOW#:			
Site:				

480-66413 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C - TCL list OLM04.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
SUMP	8-28-14	1705	G	Water			✓		
S-2		1500		Water					
S-4		1200		Water					
S-7		1305		Water					
S-8		1030		Water					
S-9		1725		Water					
MW-3		1700		Water					
CHA-1	✓	1430	✓	Water			✓		
TRIP BLANK	—	—	—	Water			✓		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	John L Favreau	8/29/14 9:40AM	CHA		8-29-14 0948	TA
2		8-29-14 1800			08130/14 0900	TA
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.0 #1 IR

Login Sample Receipt Checklist

Client: CHA Inc

Job Number: 480-66413-1

Login Number: 66413

List Source: TestAmerica Buffalo

List Number: 1

Creator: Stau, Brandon M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	cha
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-74101-1
Client Project/Site: Former Interceram Site

For:
CHA Inc
111 Winner Circle
PO BOX 5269
Albany, New York 12205-0269

Attn: Mr. John Favreau

Joseph V. Giacomazza

Authorized for release by:
1/20/2015 3:43:10 PM
Joe Giacomazza, Project Management Assistant II
joe.giacomazza@testamericainc.com

Designee for

Judy Stone, Senior Project Manager
(484)685-0868
judy.stone@testamericainc.com

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery exceeds the control limits
E	Result exceeded calibration range.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-74101-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-74101-1

Receipt
The samples were received on 1/14/2015 3:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8º C.

GC/MS VOA
Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 223343 recovered above the upper control limit for Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: (CCVIS 480-223343/3).

Method(s) 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-3 (480-74101-4), S-9 (480-74101-3), SUMP (480-74101-1). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 223544 recovered above the upper control limit for Vinyl Chloride and Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCVIS 480-223544/4).

Method(s) 8260C: The following sample(s) was diluted to bring the concentration of target analytes within the calibration range: (480-74101-2 MS), (480-74101-2 MSD), CHA-1 (480-74101-5), S-2 (480-74101-2). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: CHA-1 (480-74101-5), S-2 (480-74101-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-74101-1

Client Sample ID: SUMP — Lab Sample ID: 480-74101-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloro-1,2,2-trifluoroethane	2300		80		ug/L	80		8260C	Total/NA
Chloromethane	120		80		ug/L	80		8260C	Total/NA

Client Sample ID: S-2 — Lab Sample ID: 480-74101-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	110		80		ug/L	8		8260C	Total/NA
Carbon disulfide	15		8.0		ug/L	8		8260C	Total/NA
cis-1,2-Dichloroethene	450		8.0		ug/L	8		8260C	Total/NA
Trichloroethene	370		8.0		ug/L	8		8260C	Total/NA

Client Sample ID: S-9 — Lab Sample ID: 480-74101-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	390		10		ug/L	10		8260C	Total/NA
Trichloroethene	150		10		ug/L	10		8260C	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 480-74101-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	12		4.0		ug/L	4		8260C	Total/NA
1,1,2-Trichloro-1,2,2-trifluoroethane	13		4.0		ug/L	4		8260C	Total/NA
cis-1,2-Dichloroethene	49		4.0		ug/L	4		8260C	Total/NA
Trichloroethene	210		4.0		ug/L	4		8260C	Total/NA

Client Sample ID: CHA-1 — Lab Sample ID: 480-74101-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	110		80		ug/L	8		8260C	Total/NA
Carbon disulfide	14		8.0		ug/L	8		8260C	Total/NA
cis-1,2-Dichloroethene	450		8.0		ug/L	8		8260C	Total/NA
Trichloroethene	350		8.0		ug/L	8		8260C	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 480-74101-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-74101-1

Client Sample ID: SUMP
Date Collected: 01/13/15 11:35
Date Received: 01/14/15 03:15

Lab Sample ID: 480-74101-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		80		ug/L			01/17/15 13:17	80
1,1,2,2-Tetrachloroethane	ND		80		ug/L			01/17/15 13:17	80
1,1,2-Trichloroethane	ND		80		ug/L			01/17/15 13:17	80
1,1,2-Trichloro-1,2,2-trifluoroethane	**2300**		80		ug/L			01/17/15 13:17	80
1,1-Dichloroethane	ND		80		ug/L			01/17/15 13:17	80
1,1-Dichloroethene	ND		80		ug/L			01/17/15 13:17	80
1,2,4-Trichlorobenzene	ND		80		ug/L			01/17/15 13:17	80
1,2-Dibromo-3-Chloropropane	ND		80		ug/L			01/17/15 13:17	80
1,2-Dibromoethane	ND		80		ug/L			01/17/15 13:17	80
1,2-Dichlorobenzene	ND		80		ug/L			01/17/15 13:17	80
1,2-Dichloroethane	ND		80		ug/L			01/17/15 13:17	80
1,2-Dichloropropane	ND		80		ug/L			01/17/15 13:17	80
1,3-Dichlorobenzene	ND		80		ug/L			01/17/15 13:17	80
1,4-Dichlorobenzene	ND		80		ug/L			01/17/15 13:17	80
2-Hexanone	ND		400		ug/L			01/17/15 13:17	80
2-Butanone (MEK)	ND		800		ug/L			01/17/15 13:17	80
4-Methyl-2-pentanone (MIBK)	ND		400		ug/L			01/17/15 13:17	80
Acetone	ND		800		ug/L			01/17/15 13:17	80
Benzene	ND		80		ug/L			01/17/15 13:17	80
Bromodichloromethane	ND		80		ug/L			01/17/15 13:17	80
Bromoform	ND		80		ug/L			01/17/15 13:17	80
Bromomethane	ND		80		ug/L			01/17/15 13:17	80
Carbon disulfide	ND		80		ug/L			01/17/15 13:17	80
Carbon tetrachloride	ND		80		ug/L			01/17/15 13:17	80
Chlorobenzene	ND		80		ug/L			01/17/15 13:17	80
Dibromochloromethane	ND		80		ug/L			01/17/15 13:17	80
Chloroethane	ND		80		ug/L			01/17/15 13:17	80
Chloroform	ND		80		ug/L			01/17/15 13:17	80
Chloromethane	**120**		80		ug/L			01/17/15 13:17	80
cis-1,2-Dichloroethene	ND		80		ug/L			01/17/15 13:17	80
cis-1,3-Dichloropropene	ND		80		ug/L			01/17/15 13:17	80
Cyclohexane	ND		80		ug/L			01/17/15 13:17	80
Dichlorodifluoromethane	ND		80		ug/L			01/17/15 13:17	80
Ethylbenzene	ND		80		ug/L			01/17/15 13:17	80
Isopropylbenzene	ND		80		ug/L			01/17/15 13:17	80
Methyl acetate	ND		200		ug/L			01/17/15 13:17	80
Methyl tert-butyl ether	ND		80		ug/L			01/17/15 13:17	80
Methylcyclohexane	ND		80		ug/L			01/17/15 13:17	80
Methylene Chloride	ND		80		ug/L			01/17/15 13:17	80
Styrene	ND		80		ug/L			01/17/15 13:17	80
Tetrachloroethene	ND		80		ug/L			01/17/15 13:17	80
Toluene	ND		80		ug/L			01/17/15 13:17	80
trans-1,2-Dichloroethene	ND		80		ug/L			01/17/15 13:17	80
trans-1,3-Dichloropropene	ND		80		ug/L			01/17/15 13:17	80
Trichloroethene	ND		80		ug/L			01/17/15 13:17	80
Trichlorofluoromethane	ND		80		ug/L			01/17/15 13:17	80
Vinyl chloride	ND		80		ug/L			01/17/15 13:17	80
Xylenes, Total	ND		160		ug/L			01/17/15 13:17	80

Client Sample ID: SUMP

Lab Sample ID: 480-74101-1

Date Collected: 01/13/15 11:35

Matrix: Water

Date Received: 01/14/15 03:15

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*111*		*66 - 137*		*01/17/15 13:17*	*80*
Toluene-d8 (Surr)	*107*		*71 - 126*		*01/17/15 13:17*	*80*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*01/17/15 13:17*	*80*
Dibromofluoromethane (Surr)	*112*		*60 - 140*		*01/17/15 13:17*	*80*

Client Sample ID: S-2

Lab Sample ID: 480-74101-2

Date Collected: 01/13/15 15:35

Matrix: Water

Date Received: 01/14/15 03:15

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		8.0		ug/L			01/19/15 23:51	8
1,1,2,2-Tetrachloroethane	ND		8.0		ug/L			01/19/15 23:51	8
1,1,2-Trichloroethane	ND		8.0		ug/L			01/19/15 23:51	8
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		8.0		ug/L			01/19/15 23:51	8
1,1-Dichloroethane	ND		8.0		ug/L			01/19/15 23:51	8
1,1-Dichloroethene	ND		8.0		ug/L			01/19/15 23:51	8
1,2,4-Trichlorobenzene	ND		8.0		ug/L			01/19/15 23:51	8
1,2-Dibromo-3-Chloropropane	ND		8.0		ug/L			01/19/15 23:51	8
1,2-Dibromoethane	ND		8.0		ug/L			01/19/15 23:51	8
1,2-Dichlorobenzene	ND		8.0		ug/L			01/19/15 23:51	8
1,2-Dichloroethane	ND		8.0		ug/L			01/19/15 23:51	8
1,2-Dichloropropane	ND		8.0		ug/L			01/19/15 23:51	8
1,3-Dichlorobenzene	ND		8.0		ug/L			01/19/15 23:51	8
1,4-Dichlorobenzene	ND		8.0		ug/L			01/19/15 23:51	8
2-Hexanone	ND		40		ug/L			01/19/15 23:51	8
2-Butanone (MEK)	ND		80		ug/L			01/19/15 23:51	8
4-Methyl-2-pentanone (MIBK)	ND		40		ug/L			01/19/15 23:51	8
Acetone	**110**		80		ug/L			01/19/15 23:51	8
Benzene	ND		8.0		ug/L			01/19/15 23:51	8
Bromodichloromethane	ND		8.0		ug/L			01/19/15 23:51	8
Bromoform	ND		8.0		ug/L			01/19/15 23:51	8
Bromomethane	ND		8.0		ug/L			01/19/15 23:51	8
Carbon disulfide	**15**		8.0		ug/L			01/19/15 23:51	8
Carbon tetrachloride	ND		8.0		ug/L			01/19/15 23:51	8
Chlorobenzene	ND		8.0		ug/L			01/19/15 23:51	8
Dibromochloromethane	ND		8.0		ug/L			01/19/15 23:51	8
Chloroethane	ND		8.0		ug/L			01/19/15 23:51	8
Chloroform	ND		8.0		ug/L			01/19/15 23:51	8
Chloromethane	ND		8.0		ug/L			01/19/15 23:51	8
cis-1,2-Dichloroethene	**450**		8.0		ug/L			01/19/15 23:51	8
cis-1,3-Dichloropropene	ND		8.0		ug/L			01/19/15 23:51	8
Cyclohexane	ND		8.0		ug/L			01/19/15 23:51	8
Dichlorodifluoromethane	ND		8.0		ug/L			01/19/15 23:51	8
Ethylbenzene	ND		8.0		ug/L			01/19/15 23:51	8
Isopropylbenzene	ND		8.0		ug/L			01/19/15 23:51	8
Methyl acetate	ND		20		ug/L			01/19/15 23:51	8
Methyl tert-butyl ether	ND		8.0		ug/L			01/19/15 23:51	8
Methylcyclohexane	ND		8.0		ug/L			01/19/15 23:51	8
Methylene Chloride	ND		8.0		ug/L			01/19/15 23:51	8

Client Sample ID: S-2 — **Lab Sample ID: 480-74101-2**
Date Collected: 01/13/15 15:35 — **Matrix: Water**
Date Received: 01/14/15 03:15

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		8.0		ug/L			01/19/15 23:51	8
Tetrachloroethene	ND		8.0		ug/L			01/19/15 23:51	8
Toluene	ND		8.0		ug/L			01/19/15 23:51	8
trans-1,2-Dichloroethene	ND		8.0		ug/L			01/19/15 23:51	8
trans-1,3-Dichloropropene	ND		8.0		ug/L			01/19/15 23:51	8
Trichloroethene	**370**		8.0		ug/L			01/19/15 23:51	8
Trichlorofluoromethane	ND		8.0		ug/L			01/19/15 23:51	8
Vinyl chloride	ND		8.0		ug/L			01/19/15 23:51	8
Xylenes, Total	ND		16		ug/L			01/19/15 23:51	8

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*66 - 137*		*01/19/15 23:51*	*8*
Toluene-d8 (Surr)	*112*		*71 - 126*		*01/19/15 23:51*	*8*
4-Bromofluorobenzene (Surr)	*105*		*73 - 120*		*01/19/15 23:51*	*8*
Dibromofluoromethane (Surr)	*112*		*60 - 140*		*01/19/15 23:51*	*8*

Client Sample ID: S-9 — **Lab Sample ID: 480-74101-3**
Date Collected: 01/13/15 12:45 — **Matrix: Water**
Date Received: 01/14/15 03:15

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		10		ug/L			01/17/15 14:04	10
1,1,2,2-Tetrachloroethane	ND		10		ug/L			01/17/15 14:04	10
1,1,2-Trichloroethane	ND		10		ug/L			01/17/15 14:04	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10		ug/L			01/17/15 14:04	10
1,1-Dichloroethane	ND		10		ug/L			01/17/15 14:04	10
1,1-Dichloroethene	ND		10		ug/L			01/17/15 14:04	10
1,2,4-Trichlorobenzene	ND		10		ug/L			01/17/15 14:04	10
1,2-Dibromo-3-Chloropropane	ND		10		ug/L			01/17/15 14:04	10
1,2-Dibromoethane	ND		10		ug/L			01/17/15 14:04	10
1,2-Dichlorobenzene	ND		10		ug/L			01/17/15 14:04	10
1,2-Dichloroethane	ND		10		ug/L			01/17/15 14:04	10
1,2-Dichloropropane	ND		10		ug/L			01/17/15 14:04	10
1,3-Dichlorobenzene	ND		10		ug/L			01/17/15 14:04	10
1,4-Dichlorobenzene	ND		10		ug/L			01/17/15 14:04	10
2-Hexanone	ND		50		ug/L			01/17/15 14:04	10
2-Butanone (MEK)	ND		100		ug/L			01/17/15 14:04	10
4-Methyl-2-pentanone (MIBK)	ND		50		ug/L			01/17/15 14:04	10
Acetone	ND		100		ug/L			01/17/15 14:04	10
Benzene	ND		10		ug/L			01/17/15 14:04	10
Bromodichloromethane	ND		10		ug/L			01/17/15 14:04	10
Bromoform	ND		10		ug/L			01/17/15 14:04	10
Bromomethane	ND		10		ug/L			01/17/15 14:04	10
Carbon disulfide	ND		10		ug/L			01/17/15 14:04	10
Carbon tetrachloride	ND		10		ug/L			01/17/15 14:04	10
Chlorobenzene	ND		10		ug/L			01/17/15 14:04	10
Dibromochloromethane	ND		10		ug/L			01/17/15 14:04	10
Chloroethane	ND		10		ug/L			01/17/15 14:04	10
Chloroform	ND		10		ug/L			01/17/15 14:04	10

Client Sample ID: S-9 — **Lab Sample ID: 480-74101-3**
Date Collected: 01/13/15 12:45 — **Matrix: Water**
Date Received: 01/14/15 03:15

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		10		ug/L			01/17/15 14:04	10
cis-1,2-Dichloroethene	**390**		10		ug/L			01/17/15 14:04	10
cis-1,3-Dichloropropene	ND		10		ug/L			01/17/15 14:04	10
Cyclohexane	ND		10		ug/L			01/17/15 14:04	10
Dichlorodifluoromethane	ND		10		ug/L			01/17/15 14:04	10
Ethylbenzene	ND		10		ug/L			01/17/15 14:04	10
Isopropylbenzene	ND		10		ug/L			01/17/15 14:04	10
Methyl acetate	ND		25		ug/L			01/17/15 14:04	10
Methyl tert-butyl ether	ND		10		ug/L			01/17/15 14:04	10
Methylcyclohexane	ND		10		ug/L			01/17/15 14:04	10
Methylene Chloride	ND		10		ug/L			01/17/15 14:04	10
Styrene	ND		10		ug/L			01/17/15 14:04	10
Tetrachloroethene	ND		10		ug/L			01/17/15 14:04	10
Toluene	ND		10		ug/L			01/17/15 14:04	10
trans-1,2-Dichloroethene	ND		10		ug/L			01/17/15 14:04	10
trans-1,3-Dichloropropene	ND		10		ug/L			01/17/15 14:04	10
Trichloroethene	**150**		10		ug/L			01/17/15 14:04	10
Trichlorofluoromethane	ND		10		ug/L			01/17/15 14:04	10
Vinyl chloride	ND		10		ug/L			01/17/15 14:04	10
Xylenes, Total	ND		20		ug/L			01/17/15 14:04	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*66 - 137*		*01/17/15 14:04*	*10*
Toluene-d8 (Surr)	*105*		*71 - 126*		*01/17/15 14:04*	*10*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*01/17/15 14:04*	*10*
Dibromofluoromethane (Surr)	*112*		*60 - 140*		*01/17/15 14:04*	*10*

Client Sample ID: MW-3 — **Lab Sample ID: 480-74101-4**
Date Collected: 01/13/15 13:55 — **Matrix: Water**
Date Received: 01/14/15 03:15

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**12**		4.0		ug/L			01/17/15 14:28	4
1,1,2,2-Tetrachloroethane	ND		4.0		ug/L			01/17/15 14:28	4
1,1,2-Trichloroethane	ND		4.0		ug/L			01/17/15 14:28	4
1,1,2-Trichloro-1,2,2-trifluoroethane	**13**		4.0		ug/L			01/17/15 14:28	4
1,1-Dichloroethane	ND		4.0		ug/L			01/17/15 14:28	4
1,1-Dichloroethene	ND		4.0		ug/L			01/17/15 14:28	4
1,2,4-Trichlorobenzene	ND		4.0		ug/L			01/17/15 14:28	4
1,2-Dibromo-3-Chloropropane	ND		4.0		ug/L			01/17/15 14:28	4
1,2-Dibromoethane	ND		4.0		ug/L			01/17/15 14:28	4
1,2-Dichlorobenzene	ND		4.0		ug/L			01/17/15 14:28	4
1,2-Dichloroethane	ND		4.0		ug/L			01/17/15 14:28	4
1,2-Dichloropropane	ND		4.0		ug/L			01/17/15 14:28	4
1,3-Dichlorobenzene	ND		4.0		ug/L			01/17/15 14:28	4
1,4-Dichlorobenzene	ND		4.0		ug/L			01/17/15 14:28	4
2-Hexanone	ND		20		ug/L			01/17/15 14:28	4
2-Butanone (MEK)	ND		40		ug/L			01/17/15 14:28	4

Client Sample ID: MW-3

Lab Sample ID: 480-74101-4

Date Collected: 01/13/15 13:55

Matrix: Water

Date Received: 01/14/15 03:15

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	ND		20		ug/L			01/17/15 14:28	4
Acetone	ND		40		ug/L			01/17/15 14:28	4
Benzene	ND		4.0		ug/L			01/17/15 14:28	4
Bromodichloromethane	ND		4.0		ug/L			01/17/15 14:28	4
Bromoform	ND		4.0		ug/L			01/17/15 14:28	4
Bromomethane	ND		4.0		ug/L			01/17/15 14:28	4
Carbon disulfide	ND		4.0		ug/L			01/17/15 14:28	4
Carbon tetrachloride	ND		4.0		ug/L			01/17/15 14:28	4
Chlorobenzene	ND		4.0		ug/L			01/17/15 14:28	4
Dibromochloromethane	ND		4.0		ug/L			01/17/15 14:28	4
Chloroethane	ND		4.0		ug/L			01/17/15 14:28	4
Chloroform	ND		4.0		ug/L			01/17/15 14:28	4
Chloromethane	ND		4.0		ug/L			01/17/15 14:28	4
cis-1,2-Dichloroethene	**49**		4.0		ug/L			01/17/15 14:28	4
cis-1,3-Dichloropropene	ND		4.0		ug/L			01/17/15 14:28	4
Cyclohexane	ND		4.0		ug/L			01/17/15 14:28	4
Dichlorodifluoromethane	ND		4.0		ug/L			01/17/15 14:28	4
Ethylbenzene	ND		4.0		ug/L			01/17/15 14:28	4
Isopropylbenzene	ND		4.0		ug/L			01/17/15 14:28	4
Methyl acetate	ND		10		ug/L			01/17/15 14:28	4
Methyl tert-butyl ether	ND		4.0		ug/L			01/17/15 14:28	4
Methylcyclohexane	ND		4.0		ug/L			01/17/15 14:28	4
Methylene Chloride	ND		4.0		ug/L			01/17/15 14:28	4
Styrene	ND		4.0		ug/L			01/17/15 14:28	4
Tetrachloroethene	ND		4.0		ug/L			01/17/15 14:28	4
Toluene	ND		4.0		ug/L			01/17/15 14:28	4
trans-1,2-Dichloroethene	ND		4.0		ug/L			01/17/15 14:28	4
trans-1,3-Dichloropropene	ND		4.0		ug/L			01/17/15 14:28	4
Trichloroethene	**210**		4.0		ug/L			01/17/15 14:28	4
Trichlorofluoromethane	ND		4.0		ug/L			01/17/15 14:28	4
Vinyl chloride	ND		4.0		ug/L			01/17/15 14:28	4
Xylenes, Total	ND		8.0		ug/L			01/17/15 14:28	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*66 - 137*		*01/17/15 14:28*	*4*
Toluene-d8 (Surr)	*106*		*71 - 126*		*01/17/15 14:28*	*4*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*01/17/15 14:28*	*4*
Dibromofluoromethane (Surr)	*112*		*60 - 140*		*01/17/15 14:28*	*4*

Client Sample ID: CHA-1

Lab Sample ID: 480-74101-5

Date Collected: 01/13/15 15:40

Matrix: Water

Date Received: 01/14/15 03:15

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		8.0		ug/L			01/20/15 00:15	8
1,1,2,2-Tetrachloroethane	ND		8.0		ug/L			01/20/15 00:15	8
1,1,2-Trichloroethane	ND		8.0		ug/L			01/20/15 00:15	8
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		8.0		ug/L			01/20/15 00:15	8
1,1-Dichloroethane	ND		8.0		ug/L			01/20/15 00:15	8

Client Sample ID: CHA-1
Date Collected: 01/13/15 15:40
Date Received: 01/14/15 03:15

Lab Sample ID: 480-74101-5
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		8.0		ug/L			01/20/15 00:15	8
1,2,4-Trichlorobenzene	ND		8.0		ug/L			01/20/15 00:15	8
1,2-Dibromo-3-Chloropropane	ND		8.0		ug/L			01/20/15 00:15	8
1,2-Dibromoethane	ND		8.0		ug/L			01/20/15 00:15	8
1,2-Dichlorobenzene	ND		8.0		ug/L			01/20/15 00:15	8
1,2-Dichloroethane	ND		8.0		ug/L			01/20/15 00:15	8
1,2-Dichloropropane	ND		8.0		ug/L			01/20/15 00:15	8
1,3-Dichlorobenzene	ND		8.0		ug/L			01/20/15 00:15	8
1,4-Dichlorobenzene	ND		8.0		ug/L			01/20/15 00:15	8
2-Hexanone	ND		40		ug/L			01/20/15 00:15	8
2-Butanone (MEK)	ND		80		ug/L			01/20/15 00:15	8
4-Methyl-2-pentanone (MIBK)	ND		40		ug/L			01/20/15 00:15	8
Acetone	**110**		80		ug/L			01/20/15 00:15	8
Benzene	ND		8.0		ug/L			01/20/15 00:15	8
Bromodichloromethane	ND		8.0		ug/L			01/20/15 00:15	8
Bromoform	ND		8.0		ug/L			01/20/15 00:15	8
Bromomethane	ND		8.0		ug/L			01/20/15 00:15	8
Carbon disulfide	**14**		8.0		ug/L			01/20/15 00:15	8
Carbon tetrachloride	ND		8.0		ug/L			01/20/15 00:15	8
Chlorobenzene	ND		8.0		ug/L			01/20/15 00:15	8
Dibromochloromethane	ND		8.0		ug/L			01/20/15 00:15	8
Chloroethane	ND		8.0		ug/L			01/20/15 00:15	8
Chloroform	ND		8.0		ug/L			01/20/15 00:15	8
Chloromethane	ND		8.0		ug/L			01/20/15 00:15	8
cis-1,2-Dichloroethene	**450**		8.0		ug/L			01/20/15 00:15	8
cis-1,3-Dichloropropene	ND		8.0		ug/L			01/20/15 00:15	8
Cyclohexane	ND		8.0		ug/L			01/20/15 00:15	8
Dichlorodifluoromethane	ND		8.0		ug/L			01/20/15 00:15	8
Ethylbenzene	ND		8.0		ug/L			01/20/15 00:15	8
Isopropylbenzene	ND		8.0		ug/L			01/20/15 00:15	8
Methyl acetate	ND		20		ug/L			01/20/15 00:15	8
Methyl tert-butyl ether	ND		8.0		ug/L			01/20/15 00:15	8
Methylcyclohexane	ND		8.0		ug/L			01/20/15 00:15	8
Methylene Chloride	ND		8.0		ug/L			01/20/15 00:15	8
Styrene	ND		8.0		ug/L			01/20/15 00:15	8
Tetrachloroethene	ND		8.0		ug/L			01/20/15 00:15	8
Toluene	ND		8.0		ug/L			01/20/15 00:15	8
trans-1,2-Dichloroethene	ND		8.0		ug/L			01/20/15 00:15	8
trans-1,3-Dichloropropene	ND		8.0		ug/L			01/20/15 00:15	8
Trichloroethene	**350**		8.0		ug/L			01/20/15 00:15	8
Trichlorofluoromethane	ND		8.0		ug/L			01/20/15 00:15	8
Vinyl chloride	ND		8.0		ug/L			01/20/15 00:15	8
Xylenes, Total	ND		16		ug/L			01/20/15 00:15	8

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*66 - 137*		*01/20/15 00:15*	*8*
Toluene-d8 (Surr)	*108*		*71 - 126*		*01/20/15 00:15*	*8*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*01/20/15 00:15*	*8*
Dibromofluoromethane (Surr)	*107*		*60 - 140*		*01/20/15 00:15*	*8*

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-74101-1

Client Sample ID: TRIP BLANK
Date Collected: 01/13/15 00:00
Date Received: 01/14/15 03:15

Lab Sample ID: 480-74101-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			01/17/15 15:15	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			01/17/15 15:15	1
1,1,2-Trichloroethane	ND		1.0		ug/L			01/17/15 15:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			01/17/15 15:15	1
1,1-Dichloroethane	ND		1.0		ug/L			01/17/15 15:15	1
1,1-Dichloroethene	ND		1.0		ug/L			01/17/15 15:15	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			01/17/15 15:15	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			01/17/15 15:15	1
1,2-Dibromoethane	ND		1.0		ug/L			01/17/15 15:15	1
1,2-Dichlorobenzene	ND		1.0		ug/L			01/17/15 15:15	1
1,2-Dichloroethane	ND		1.0		ug/L			01/17/15 15:15	1
1,2-Dichloropropane	ND		1.0		ug/L			01/17/15 15:15	1
1,3-Dichlorobenzene	ND		1.0		ug/L			01/17/15 15:15	1
1,4-Dichlorobenzene	ND		1.0		ug/L			01/17/15 15:15	1
2-Hexanone	ND		5.0		ug/L			01/17/15 15:15	1
2-Butanone (MEK)	ND		10		ug/L			01/17/15 15:15	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			01/17/15 15:15	1
Acetone	ND		10		ug/L			01/17/15 15:15	1
Benzene	ND		1.0		ug/L			01/17/15 15:15	1
Bromodichloromethane	ND		1.0		ug/L			01/17/15 15:15	1
Bromoform	ND		1.0		ug/L			01/17/15 15:15	1
Bromomethane	ND		1.0		ug/L			01/17/15 15:15	1
Carbon disulfide	ND		1.0		ug/L			01/17/15 15:15	1
Carbon tetrachloride	ND		1.0		ug/L			01/17/15 15:15	1
Chlorobenzene	ND		1.0		ug/L			01/17/15 15:15	1
Dibromochloromethane	ND		1.0		ug/L			01/17/15 15:15	1
Chloroethane	ND		1.0		ug/L			01/17/15 15:15	1
Chloroform	ND		1.0		ug/L			01/17/15 15:15	1
Chloromethane	ND		1.0		ug/L			01/17/15 15:15	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			01/17/15 15:15	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			01/17/15 15:15	1
Cyclohexane	ND		1.0		ug/L			01/17/15 15:15	1
Dichlorodifluoromethane	ND		1.0		ug/L			01/17/15 15:15	1
Ethylbenzene	ND		1.0		ug/L			01/17/15 15:15	1
Isopropylbenzene	ND		1.0		ug/L			01/17/15 15:15	1
Methyl acetate	ND		2.5		ug/L			01/17/15 15:15	1
Methyl tert-butyl ether	ND		1.0		ug/L			01/17/15 15:15	1
Methylcyclohexane	ND		1.0		ug/L			01/17/15 15:15	1
Methylene Chloride	ND		1.0		ug/L			01/17/15 15:15	1
Styrene	ND		1.0		ug/L			01/17/15 15:15	1
Tetrachloroethene	ND		1.0		ug/L			01/17/15 15:15	1
Toluene	ND		1.0		ug/L			01/17/15 15:15	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			01/17/15 15:15	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			01/17/15 15:15	1
Trichloroethene	ND		1.0		ug/L			01/17/15 15:15	1
Trichlorofluoromethane	ND		1.0		ug/L			01/17/15 15:15	1
Vinyl chloride	ND		1.0		ug/L			01/17/15 15:15	1
Xylenes, Total	ND		2.0		ug/L			01/17/15 15:15	1

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-74101-1

Client Sample ID: TRIP BLANK
Date Collected: 01/13/15 00:00
Date Received: 01/14/15 03:15

Lab Sample ID: 480-74101-6
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		66 - 137		01/17/15 15:15	1
Toluene-d8 (Surr)	107		71 - 126		01/17/15 15:15	1
4-Bromofluorobenzene (Surr)	104		73 - 120		01/17/15 15:15	1
Dibromofluoromethane (Surr)	110		60 - 140		01/17/15 15:15	1

Surrogate Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-74101-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	12DCE (66-137)	TOL (71-126)	BFB (73-120)	DBFM (60-140)
480-74101-1	SUMP	111	107	102	112
480-74101-2	S-2	111	112	105	112
480-74101-2 MS	S-2	106	106	100	106
480-74101-2 MSD	S-2	105	108	96	109
480-74101-3	S-9	112	105	101	112
480-74101-4	MW-3	112	106	103	112
480-74101-5	CHA-1	108	108	104	107
480-74101-6	TRIP BLANK	113	107	104	110
LCS 480-223343/5	Lab Control Sample	109	106	101	109
LCS 480-223544/6	Lab Control Sample	104	108	101	107
MB 480-223343/7	Method Blank	112	109	101	112
MB 480-223544/8	Method Blank	110	107	102	109

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-223343/7
Matrix: Water
Analysis Batch: 223343

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			01/17/15 12:22	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			01/17/15 12:22	1
1,1,2-Trichloroethane	ND		1.0		ug/L			01/17/15 12:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			01/17/15 12:22	1
1,1-Dichloroethane	ND		1.0		ug/L			01/17/15 12:22	1
1,1-Dichloroethene	ND		1.0		ug/L			01/17/15 12:22	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			01/17/15 12:22	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			01/17/15 12:22	1
1,2-Dibromoethane	ND		1.0		ug/L			01/17/15 12:22	1
1,2-Dichlorobenzene	ND		1.0		ug/L			01/17/15 12:22	1
1,2-Dichloroethane	ND		1.0		ug/L			01/17/15 12:22	1
1,2-Dichloropropane	ND		1.0		ug/L			01/17/15 12:22	1
1,3-Dichlorobenzene	ND		1.0		ug/L			01/17/15 12:22	1
1,4-Dichlorobenzene	ND		1.0		ug/L			01/17/15 12:22	1
2-Hexanone	ND		5.0		ug/L			01/17/15 12:22	1
2-Butanone (MEK)	ND		10		ug/L			01/17/15 12:22	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			01/17/15 12:22	1
Acetone	ND		10		ug/L			01/17/15 12:22	1
Benzene	ND		1.0		ug/L			01/17/15 12:22	1
Bromodichloromethane	ND		1.0		ug/L			01/17/15 12:22	1
Bromoform	ND		1.0		ug/L			01/17/15 12:22	1
Bromomethane	ND		1.0		ug/L			01/17/15 12:22	1
Carbon disulfide	ND		1.0		ug/L			01/17/15 12:22	1
Carbon tetrachloride	ND		1.0		ug/L			01/17/15 12:22	1
Chlorobenzene	ND		1.0		ug/L			01/17/15 12:22	1
Dibromochloromethane	ND		1.0		ug/L			01/17/15 12:22	1
Chloroethane	ND		1.0		ug/L			01/17/15 12:22	1
Chloroform	ND		1.0		ug/L			01/17/15 12:22	1
Chloromethane	ND		1.0		ug/L			01/17/15 12:22	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			01/17/15 12:22	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			01/17/15 12:22	1
Cyclohexane	ND		1.0		ug/L			01/17/15 12:22	1
Dichlorodifluoromethane	ND		1.0		ug/L			01/17/15 12:22	1
Ethylbenzene	ND		1.0		ug/L			01/17/15 12:22	1
Isopropylbenzene	ND		1.0		ug/L			01/17/15 12:22	1
Methyl acetate	ND		2.5		ug/L			01/17/15 12:22	1
Methyl tert-butyl ether	ND		1.0		ug/L			01/17/15 12:22	1
Methylcyclohexane	ND		1.0		ug/L			01/17/15 12:22	1
Methylene Chloride	ND		1.0		ug/L			01/17/15 12:22	1
Styrene	ND		1.0		ug/L			01/17/15 12:22	1
Tetrachloroethene	ND		1.0		ug/L			01/17/15 12:22	1
Toluene	ND		1.0		ug/L			01/17/15 12:22	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			01/17/15 12:22	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			01/17/15 12:22	1
Trichloroethene	ND		1.0		ug/L			01/17/15 12:22	1
Trichlorofluoromethane	ND		1.0		ug/L			01/17/15 12:22	1
Vinyl chloride	ND		1.0		ug/L			01/17/15 12:22	1
Xylenes, Total	ND		2.0		ug/L			01/17/15 12:22	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-223343/7
Matrix: Water
Analysis Batch: 223343

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*112*		*66 - 137*		*01/17/15 12:22*	*1*
Toluene-d8 (Surr)	*109*		*71 - 126*		*01/17/15 12:22*	*1*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*01/17/15 12:22*	*1*
Dibromofluoromethane (Surr)	*112*		*60 - 140*		*01/17/15 12:22*	*1*

Lab Sample ID: LCS 480-223343/5
Matrix: Water
Analysis Batch: 223343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	25.0	22.5		ug/L		90	71 - 129
1,1-Dichloroethene	25.0	21.1		ug/L		84	58 - 121
1,2-Dichlorobenzene	25.0	23.4		ug/L		93	80 - 124
1,2-Dichloroethane	25.0	23.9		ug/L		96	75 - 127
Benzene	25.0	23.2		ug/L		93	71 - 124
Chlorobenzene	25.0	23.1		ug/L		92	72 - 120
cis-1,2-Dichloroethene	25.0	22.3		ug/L		89	74 - 124
Ethylbenzene	25.0	23.1		ug/L		92	77 - 123
Methyl tert-butyl ether	25.0	21.3		ug/L		85	64 - 127
Tetrachloroethene	25.0	22.0		ug/L		88	74 - 122
Toluene	25.0	22.5		ug/L		90	80 - 122
trans-1,2-Dichloroethene	25.0	21.5		ug/L		86	73 - 127
Trichloroethene	25.0	22.4		ug/L		90	74 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*109*		*66 - 137*
Toluene-d8 (Surr)	*106*		*71 - 126*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*
Dibromofluoromethane (Surr)	*109*		*60 - 140*

Lab Sample ID: MB 480-223544/8
Matrix: Water
Analysis Batch: 223544

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			01/19/15 22:30	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			01/19/15 22:30	1
1,1,2-Trichloroethane	ND		1.0		ug/L			01/19/15 22:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ug/L			01/19/15 22:30	1
1,1-Dichloroethane	ND		1.0		ug/L			01/19/15 22:30	1
1,1-Dichloroethene	ND		1.0		ug/L			01/19/15 22:30	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			01/19/15 22:30	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			01/19/15 22:30	1
1,2-Dibromoethane	ND		1.0		ug/L			01/19/15 22:30	1
1,2-Dichlorobenzene	ND		1.0		ug/L			01/19/15 22:30	1
1,2-Dichloroethane	ND		1.0		ug/L			01/19/15 22:30	1
1,2-Dichloropropane	ND		1.0		ug/L			01/19/15 22:30	1
1,3-Dichlorobenzene	ND		1.0		ug/L			01/19/15 22:30	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-223544/8
Matrix: Water
Analysis Batch: 223544

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		1.0		ug/L			01/19/15 22:30	1
2-Hexanone	ND		5.0		ug/L			01/19/15 22:30	1
2-Butanone (MEK)	ND		10		ug/L			01/19/15 22:30	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			01/19/15 22:30	1
Acetone	ND		10		ug/L			01/19/15 22:30	1
Benzene	ND		1.0		ug/L			01/19/15 22:30	1
Bromodichloromethane	ND		1.0		ug/L			01/19/15 22:30	1
Bromoform	ND		1.0		ug/L			01/19/15 22:30	1
Bromomethane	ND		1.0		ug/L			01/19/15 22:30	1
Carbon disulfide	ND		1.0		ug/L			01/19/15 22:30	1
Carbon tetrachloride	ND		1.0		ug/L			01/19/15 22:30	1
Chlorobenzene	ND		1.0		ug/L			01/19/15 22:30	1
Dibromochloromethane	ND		1.0		ug/L			01/19/15 22:30	1
Chloroethane	ND		1.0		ug/L			01/19/15 22:30	1
Chloroform	ND		1.0		ug/L			01/19/15 22:30	1
Chloromethane	ND		1.0		ug/L			01/19/15 22:30	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			01/19/15 22:30	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			01/19/15 22:30	1
Cyclohexane	ND		1.0		ug/L			01/19/15 22:30	1
Dichlorodifluoromethane	ND		1.0		ug/L			01/19/15 22:30	1
Ethylbenzene	ND		1.0		ug/L			01/19/15 22:30	1
Isopropylbenzene	ND		1.0		ug/L			01/19/15 22:30	1
Methyl acetate	ND		2.5		ug/L			01/19/15 22:30	1
Methyl tert-butyl ether	ND		1.0		ug/L			01/19/15 22:30	1
Methylcyclohexane	ND		1.0		ug/L			01/19/15 22:30	1
Methylene Chloride	ND		1.0		ug/L			01/19/15 22:30	1
Styrene	ND		1.0		ug/L			01/19/15 22:30	1
Tetrachloroethene	ND		1.0		ug/L			01/19/15 22:30	1
Toluene	ND		1.0		ug/L			01/19/15 22:30	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			01/19/15 22:30	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			01/19/15 22:30	1
Trichloroethene	ND		1.0		ug/L			01/19/15 22:30	1
Trichlorofluoromethane	ND		1.0		ug/L			01/19/15 22:30	1
Vinyl chloride	ND		1.0		ug/L			01/19/15 22:30	1
Xylenes, Total	ND		2.0		ug/L			01/19/15 22:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*66 - 137*		*01/19/15 22:30*	*1*
Toluene-d8 (Surr)	*107*		*71 - 126*		*01/19/15 22:30*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*01/19/15 22:30*	*1*
Dibromofluoromethane (Surr)	*109*		*60 - 140*		*01/19/15 22:30*	*1*

Lab Sample ID: LCS 480-223544/6
Matrix: Water
Analysis Batch: 223544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	25.0	23.6		ug/L		94	71 - 129

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-223544/6
Matrix: Water
Analysis Batch: 223544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	25.0	23.2		ug/L		93	58 - 121
1,2-Dichlorobenzene	25.0	25.8		ug/L		103	80 - 124
1,2-Dichloroethane	25.0	24.6		ug/L		98	75 - 127
Benzene	25.0	24.2		ug/L		97	71 - 124
Chlorobenzene	25.0	25.1		ug/L		100	72 - 120
cis-1,2-Dichloroethene	25.0	23.2		ug/L		93	74 - 124
Ethylbenzene	25.0	24.6		ug/L		99	77 - 123
Methyl tert-butyl ether	25.0	22.2		ug/L		89	64 - 127
Tetrachloroethene	25.0	24.2		ug/L		97	74 - 122
Toluene	25.0	24.9		ug/L		99	80 - 122
trans-1,2-Dichloroethene	25.0	22.4		ug/L		90	73 - 127
Trichloroethene	25.0	24.5		ug/L		98	74 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*66 - 137*
Toluene-d8 (Surr)	*108*		*71 - 126*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*
Dibromofluoromethane (Surr)	*107*		*60 - 140*

Lab Sample ID: 480-74101-2 MS
Matrix: Water
Analysis Batch: 223544

Client Sample ID: S-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	ND		200	145		ug/L		72	71 - 129
1,1-Dichloroethene	ND		200	128		ug/L		64	58 - 121
1,2-Dichlorobenzene	ND		200	113	F1	ug/L		56	80 - 124
1,2-Dichloroethane	ND		200	177		ug/L		88	75 - 127
Benzene	ND		200	144		ug/L		72	71 - 124
Chlorobenzene	ND		200	130	F1	ug/L		65	72 - 120
cis-1,2-Dichloroethene	450		200	675		ug/L		112	74 - 124
Ethylbenzene	ND		200	107	F1	ug/L		53	77 - 123
Methyl tert-butyl ether	ND		200	165		ug/L		83	64 - 127
Tetrachloroethene	ND		200	100	F1	ug/L		50	74 - 122
Toluene	ND		200	130	F1	ug/L		65	80 - 122
trans-1,2-Dichloroethene	ND		200	139	F1	ug/L		70	73 - 127
Trichloroethene	370		200	832	E F1	ug/L		230	74 - 123

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*66 - 137*
Toluene-d8 (Surr)	*106*		*71 - 126*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*
Dibromofluoromethane (Surr)	*106*		*60 - 140*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-74101-2 MSD
Matrix: Water
Analysis Batch: 223544

Client Sample ID: S-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethane	ND		200	169		ug/L		84	71 - 129	15	20
1,1-Dichloroethene	ND		200	166	F2	ug/L		83	58 - 121	25	16
1,2-Dichlorobenzene	ND		200	123	F1	ug/L		61	80 - 124	9	20
1,2-Dichloroethane	ND		200	183		ug/L		92	75 - 127	4	20
Benzene	ND		200	169	F2	ug/L		84	71 - 124	16	13
Chlorobenzene	ND		200	156		ug/L		78	72 - 120	18	25
cis-1,2-Dichloroethene	450		200	621		ug/L		85	74 - 124	8	15
Ethylbenzene	ND		200	133	F1 F2	ug/L		67	77 - 123	22	15
Methyl tert-butyl ether	ND		200	166		ug/L		83	64 - 127	0	37
Tetrachloroethene	ND		200	126	F1 F2	ug/L		63	74 - 122	23	20
Toluene	ND		200	159	F1 F2	ug/L		79	80 - 122	20	15
trans-1,2-Dichloroethene	ND		200	164		ug/L		82	73 - 127	16	20
Trichloroethene	370		200	658	F1 F2	ug/L		143	74 - 123	23	16

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*66 - 137*
Toluene-d8 (Surr)	*108*		*71 - 126*
4-Bromofluorobenzene (Surr)	*96*		*73 - 120*
Dibromofluoromethane (Surr)	*109*		*60 - 140*

QC Association Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-74101-1

GC/MS VOA

Analysis Batch: 223343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-74101-1	SUMP	Total/NA	Water	8260C	
480-74101-3	S-9	Total/NA	Water	8260C	
480-74101-4	MW-3	Total/NA	Water	8260C	
480-74101-6	TRIP BLANK	Total/NA	Water	8260C	
LCS 480-223343/5	Lab Control Sample	Total/NA	Water	8260C	
MB 480-223343/7	Method Blank	Total/NA	Water	8260C	

Analysis Batch: 223544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-74101-2	S-2	Total/NA	Water	8260C	
480-74101-2 MS	S-2	Total/NA	Water	8260C	
480-74101-2 MSD	S-2	Total/NA	Water	8260C	
480-74101-5	CHA-1	Total/NA	Water	8260C	
LCS 480-223544/6	Lab Control Sample	Total/NA	Water	8260C	
MB 480-223544/8	Method Blank	Total/NA	Water	8260C	

Lab Chronicle

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-74101-1

Client Sample ID: SUMP
Lab Sample ID: 480-74101-1
Date Collected: 01/13/15 11:35
Matrix: Water
Date Received: 01/14/15 03:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		80	223343	01/17/15 13:17	NMD1	TAL BUF

Client Sample ID: S-2
Lab Sample ID: 480-74101-2
Date Collected: 01/13/15 15:35
Matrix: Water
Date Received: 01/14/15 03:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		8	223544	01/19/15 23:51	EDB	TAL BUF

Client Sample ID: S-9
Lab Sample ID: 480-74101-3
Date Collected: 01/13/15 12:45
Matrix: Water
Date Received: 01/14/15 03:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	223343	01/17/15 14:04	NMD1	TAL BUF

Client Sample ID: MW-3
Lab Sample ID: 480-74101-4
Date Collected: 01/13/15 13:55
Matrix: Water
Date Received: 01/14/15 03:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	223343	01/17/15 14:28	NMD1	TAL BUF

Client Sample ID: CHA-1
Lab Sample ID: 480-74101-5
Date Collected: 01/13/15 15:40
Matrix: Water
Date Received: 01/14/15 03:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		8	223544	01/20/15 00:15	EDB	TAL BUF

Client Sample ID: TRIP BLANK
Lab Sample ID: 480-74101-6
Date Collected: 01/13/15 00:00
Matrix: Water
Date Received: 01/14/15 03:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	223343	01/17/15 15:15	NMD1	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-74101-1

Laboratory: TestAmerica Buffalo

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10026	03-31-15

Method Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-74101-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: CHA Inc
Project/Site: Former Interceram Site

TestAmerica Job ID: 480-74101-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-74101-1	SUMP	Water	01/13/15 11:35	01/14/15 03:15
480-74101-2	S-2	Water	01/13/15 15:35	01/14/15 03:15
480-74101-3	S-9	Water	01/13/15 12:45	01/14/15 03:15
480-74101-4	MW-3	Water	01/13/15 13:55	01/14/15 03:15
480-74101-5	CHA-1	Water	01/13/15 15:40	01/14/15 03:15
480-74101-6	TRIP BLANK	Water	01/13/15 00:00	01/14/15 03:15

TestAmerica Albany
25 Kraft Road
Albany, NY 12205

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Scott Rosecrans	Lab PM: Stone, Judy L	Carrier Tracking No(s):	COC No: 480-61546-15752.1
Client Contact: Mr. John Favreau	Phone: 518-453-3730	E-Mail: judy.stone@testamericainc.com		Page: Page 1 of 1
Company: CHA Inc				Job #:
Address: 111 Winner Circle PO BOX 5269	Due Date Requested:			
City: Albany	TAT Requested (days): Standard			
State, Zip: NY, 12205-0269				
Phone: 518-453-8795(Tel)	PO #: 28574.2000.44000			
Email: jfavreau@chacompanies.com	WO #:			
Project Name: Former Interceram Site	Project #: 48003868			
Site: Fortune Road West, Middletown, NY	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C - TCL list OLM04.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
SUMP	1/13/15	11:35	G	Water	N	N	✓		
S-2		15:35	G	Water			✓		* See below
S-9		12:45	G	Water			✓		
MW-3		13:55	G	Water			✓		
CHA-1		15:40	G	Water			✓		
TRIP BLANK	NA	NA	LW				✓		

480-74101 Chain of Custody

NRC 1-13-15

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: * Milky appearance associated w/ 3DME Biodiversity Product

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Scott Rosecrans	1/13/15 18:10	CHA	[signature]	1-13-15 1810	TA
[signature]	1-13-15 1815	TA	[signature]	14 JAN 15 0315	TA Buff
			[signature]		

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.8 #1

Login Sample Receipt Checklist

Client: CHA Inc

Job Number: 480-74101-1

Login Number: 74101
List Number: 1
Creator: Williams, Christopher S

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	CHA
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

APPENDIX I

NYSDEC Record of Decision (March 2015)

RECORD OF DECISION

Interceram
Operable Unit Number 02: Groundwater and Soil Vapor
State Superfund Project
Wallkill, Orange County
Site No. 336045
March 2015

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - RECORD OF DECISION

Interceram
Operable Unit Number: 02
State Superfund Project
Wallkill, Orange County
Site No. 336045
March 2015

Statement of Purpose and Basis

This document presents the remedy for Operable Unit Number: 02: Groundwater and Soil Vapor of the Interceram site, a Class 2 inactive hazardous waste disposal site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for Operable Unit Number: 02 of the Interceram site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the above referenced site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or feasibility study (FS). The IRM(s) undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore No Further Action is the selected remedy. The remedy may include continued operation of a remedial system if one was installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the remedy for the site.

The IRM(s) conducted at the site attained the remediation objectives identified for this site in Section 6.5 for the protection of public health and the environment.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

March 31, 2015

Date

Robert W. Schick, P.E., Director
Division of Environmental Remediation

RECORD OF DECISION

Interceram
Wallkill, Orange County
Site No. 336045
March 2015

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of hazardous wastes at the site resulted in threats to public health and the environment that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or feasibility study (FS). The IRMs undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment. The IRM(s) conducted at the site attained the remediation objectives identified for this site, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the remedy selected by this Record of Decision (ROD). A No Further Action remedy may include site management, which will include continued operation of any remedial system installed during the IRM and the implementation of any prescribed controls that have been identified as being part of the remedy for the site. This ROD identifies the IRM(s) conducted and discusses the basis for No Further Action.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

NYSDEC Region 3 Office
21 South Putt Corners Road
New Paltz, NY 12561
Phone: (845) 256-3018

Thrall Library
11-19 Depot Street
Middletown, NY 10940
Phone: (845)-341-5454

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Interceram site is located north of Fortune Road near its intersection with Rock Hill Road, in the Town of Wallkill, Orange County.

Site Features: The main site feature consists of a large (20,430 square foot), occupied, single story building and a parking lot that cover most of the site.

Current Zoning and Land Use: The site is currently zoned for commercial use and is now being used to warehouse auto and medical supplies.

Past Use of the Site: From 1971 to 1991, CeramTec Corporation assembled, cleaned, plated (nickel and gold), and reworked fused metal and ceramic parts. Chemicals such as trichloroethylene (TCE), potassium gold cyanide, sodium cyanide, freon (vapor degreaser), and others, including various acids, were used on-site. Contamination of the soil and groundwater occurred during the storage and handling of wastes and products.

Operable Units: The site was divided into two operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.
Operable Unit 1 (OU1) consists of soil associated with the site. OU2 comprises groundwater and soil vapor both on-site and off-site.

Site Geology and Hydrogeology: Overburden soils on-site consist of sand and clay till. Bedrock on-site is made up mostly of shale and greywacke. Groundwater flows to the southwest from the site. Groundwater can be found from 10 to 25 feet below grade surface across the site.

Operable Unit (OU) Number 02 is the subject of this document.

A Record of Decision was issued previously for OU 01. This document includes a modification to the institutional control for the entire site (OU 01 and OU 02) from that which is stated in the Record of Decision for OU 01.

Operable Unit (OU) Number 02 is the subject of this document.

A Record of Decision was issued previously for OU 01.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

CeramTec North America Corporation

The Department and CeramTec North America Corporation entered into a Consent Order on

March 3, 1997. The Order (Index No. W3-0781-96-06) obligates the responsible party to implement a full remedial program.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCG in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous

waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified for this Operable Unit at this site is/are:

cis-1,2-Dichloroethene	1,1,2-TRICHLORO-1,2,2-
TRICHLOROETHENE (TCE)	TRIFLOUROETHANE
1,1,1-TRICHLOROETHANE	

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRM(s) described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Report.

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

Groundwater IRM

In August of 2014, in-situ chemical oxidation (ISCO) was implemented to treat the chlorinated volatile organic compounds (CVOCs) in groundwater. Persulfate was injected into the subsurface to destroy the contaminants in two 2,000-square foot areas located in the parking area of Building 62 and one 4000-square foot area located at the western boundary of the Interceram property. Injection wells are screened from 9 to 20 feet.

Prior to the full implementation of this technology, laboratory and on-site pilot scale studies were conducted to more clearly define design parameters. Between the pilot and the full scale implementations, over 50 injection points were installed. Persulfate was injected over three separate events in August, October and December of 2014. Following the injections, two rounds of groundwater monitoring were conducted to assess performance. Results have shown that significant declines in TCE and cis 1,2 DCE have occurred. The continued reduction of contaminants and the byproducts of reduction is expected to continue.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 02.

OU 1: Soil

Remediation for OU 1 has been completed. Impacted soils at the site were excavated and treated by thermal desorption. On-site soils meet the commercial soil cleanup objectives. Prior to remediation, the primary contaminants of concern for OU 1 were TCE, 1,1,1-trichloroethane, cis-1,2-dichloroethene and cyanide in soil.

OU 2: Groundwater and Soil Vapor

Impacted sub-slab air was mitigated by the installation of sub-slab depressurization systems (SSDSs) at the former Interceram building and Building 61, Building 62, and Building 65 at Rockwood Gardens Apartments. The SSDSs continue to operate and are inspected annually. Prior to remediation, the primary contaminants of concern for OU 1 were TCE, 1,1,1-trichloroethane, cis-1,2-dichloroethene and freon 113 in soil vapor.

Groundwater sample results indicate that the elevated levels of TCE, cis-1,2-dichloroethene, Freon 113, and 1,1,1-trichloroethane remain in groundwater near the boundary between the former Interceram property and the Rockwood Gardens property. Groundwater contamination does not appear to extend to the south or southwest beyond the parking lot and road west of Building 62, as groundwater wells in these directions did not show detections of contaminants.

Post IRM samples collected on January 13, 2015, show the maximum concentrations of TCE, cis -1,2 dichloroethene, Freon 113, and 1,1,1-trichloroethane in groundwater were 370 ppb, 450 ppb, 2,300 ppb and 12 ppb respectively.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

Drinking contaminated groundwater is not expected because public water serves the area. Contact with contaminated soil is unlikely because contaminated soil was removed, and any residual contamination is at depth. Sub-slab depressurization systems have been installed to prevent exposure to site contaminants entering the buildings via soil vapor intrusion. Additional off-site residential structures will be evaluated for soil vapor intrusion.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or

mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: SUMMARY OF SELECTED REMEDY

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation presented here, the Department is selecting No Further Action as the remedy for the site. This No Further Action remedy includes the implementation of institutional controls to address groundwater contamination. The OU 1 ROD required the implementation of an institutional control in the form of a deed restriction. The environmental easement included in this remedy will supersede the OU 1 ROD requirement for the deed restriction. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The elements of the IRM already completed are detailed in section 6.2. This remedy also selects the following:

1. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled (i.e., on-site) property that:

• requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
• allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
• restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
• requires compliance with the Department approved Site Management Plan.

2. Site Management Plan

A Site Management Plan is required, which includes the following:

• an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
• descriptions of the provisions of the environmental easement including any land use, and groundwater restrictions;
• a provision for evaluation of the potential for soil vapor intrusion for any new buildings developed on the site or affected off-site areas, including provisions for implementing actions recommended to address exposures related to soil vapor intrusion;
• provisions for the management and inspection of the identified engineering controls;
• provisions for additional applications of the ISCO amendments to address a rise or plateauing of contaminant concentrations or to ensure complete degradation of breakdown products;
• maintaining site access controls and Department notification; and
• the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

• monitoring of groundwater to assess the performance and effectiveness of the remedy;
• monitoring for vapor intrusion for any new buildings developed on the site or affected off-site areas, as may be required by the Institutional and Engineering Control Plan discussed above; and
• a schedule of monitoring and frequency of submittals to the Department.

c. a SSDS Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting for the SSDSs currently installed and operating on-site and off-site.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into one category; volatile organic compounds. For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Groundwater

Six permanent off-site groundwater monitoring wells and one sump were sampled to assess the nature and extent of contamination and ascertain groundwater flow direction and depth to groundwater. The assessment determined that chlorinated volatile organic compounds (VOCs) are found in the shallow groundwater exceeding applicable SCGs immediately downgradient (west) of the former Interceram building. Chlorinated VOCs are likely attributable to former site operations. No SVOCs, metals, pesticides or PCBs were identified in groundwater.

Groundwater sample results indicated that the elevated levels of TCE, cis-1,2-dichloroethene, Freon 113, and 1,1,1-trichloroethane remain in groundwater near the boundary between the former Interceram property and the Rockwood Gardens property. Maximum concentrations of TCE and cis-1,2-dichloroethene, Freon 113, and 1,1,1-trichloroethane in groundwater prior to the IRM were 7,300 ppb, 1,400 ppb, 5,600 ppb, and 17 ppb, respectively. The groundwater standard for each of these contaminants is 5 ppb. Groundwater contamination does not appear to extend to the south or southwest beyond the parking lot and road west of Building 62, as groundwater wells in these directions did not show detections of contaminants.

Post-IRM groundwater results show three of the six wells had no detections of VOCs. The sump and three wells located near building 61 and building 62 indicate the presence of site associated VOCs. Trichloroethene (TCE) and cis 1,2-dichloroethene (cis 1,2-DCE) were found in two wells above the groundwater standard at depths of 8-12’ bgs. Freon 113 was found in the sump and a downgradient well above the groundwater standard at depths of 5-10’ bgs. 1,1,1-trichloroethane was found in two wells slightly above the groundwater standard at depths of 8-12’ bgs. Post IRM results showed a decline in TCE, cis 1,2-DCE and Freon 113 concentrations by two orders of magnitude or greater.

Table 1 - Pre-IRM Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
1,1,1 – Trichloroethane	ND – 17	5	1 – 29
Cis – 1,2 – Dichloroethene	ND – 1,800	5	20 – 29
Trichloroethene	ND – 17,000	5	20 – 29
Freon 113	ND – 5,600	5	10 - 29

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

Table 2 - Post-IRM Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
1,1,1 – Trichloroethane	ND – 24	5	3 – 12
Cis – 1,2 – Dichloroethene	ND – 450	5	6 – 12
Trichloroethene	ND – 810	5	6 – 12
Freon 113	ND – 2.300	5	4 - 12

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

Groundwater contamination identified during the RI was addressed during the IRM described in Section 6.2.

Soil

During the RI for OU 2 an effort was made to locate source material and determine if it was contributing to the presence of chlorinated VOCs in groundwater, subsurface soil samples were collected during the RI and analyzed for VOCs. Nine soil borings were installed in and around the site in the area of groundwater contamination and upgradient of contaminated groundwater wells. Soil borings were advanced to depths ranging from 12 ft bgs to 22 ft bgs. Soil samples were collected at the groundwater soil interface if encountered or from soils screened with elevated PID readings and analyzed for VOCs by USEPA Method 8260.

The soil analytical results found TCE and cis 1,2-DCE in three of the nine samples. Concentrations of TCE ranged from 0.012 ppm to 0.12 ppm and concentrations of cis 1,2-DCE ranged from 0.017 ppm to 0.12 ppm. The RI soil results indicate there is no significant remaining source of PCE or TCE in subsurface soils. No SVOCs, metals, pesticides or PCBs were identified in on-site soil.

No site-related soil contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for soil.

Table 3 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[d] (ppm)	Frequency Exceeding Restricted SCG
VOCs					
Cis-1,2 Dichloroethene	ND – 0.15	0.25	0 – 9	0.25	0 - 9
Trichloroethene	ND – 0.12	0.47	0 – 9	0.47	0 - 9

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.

c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Unrestricted Use, unless otherwise noted.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

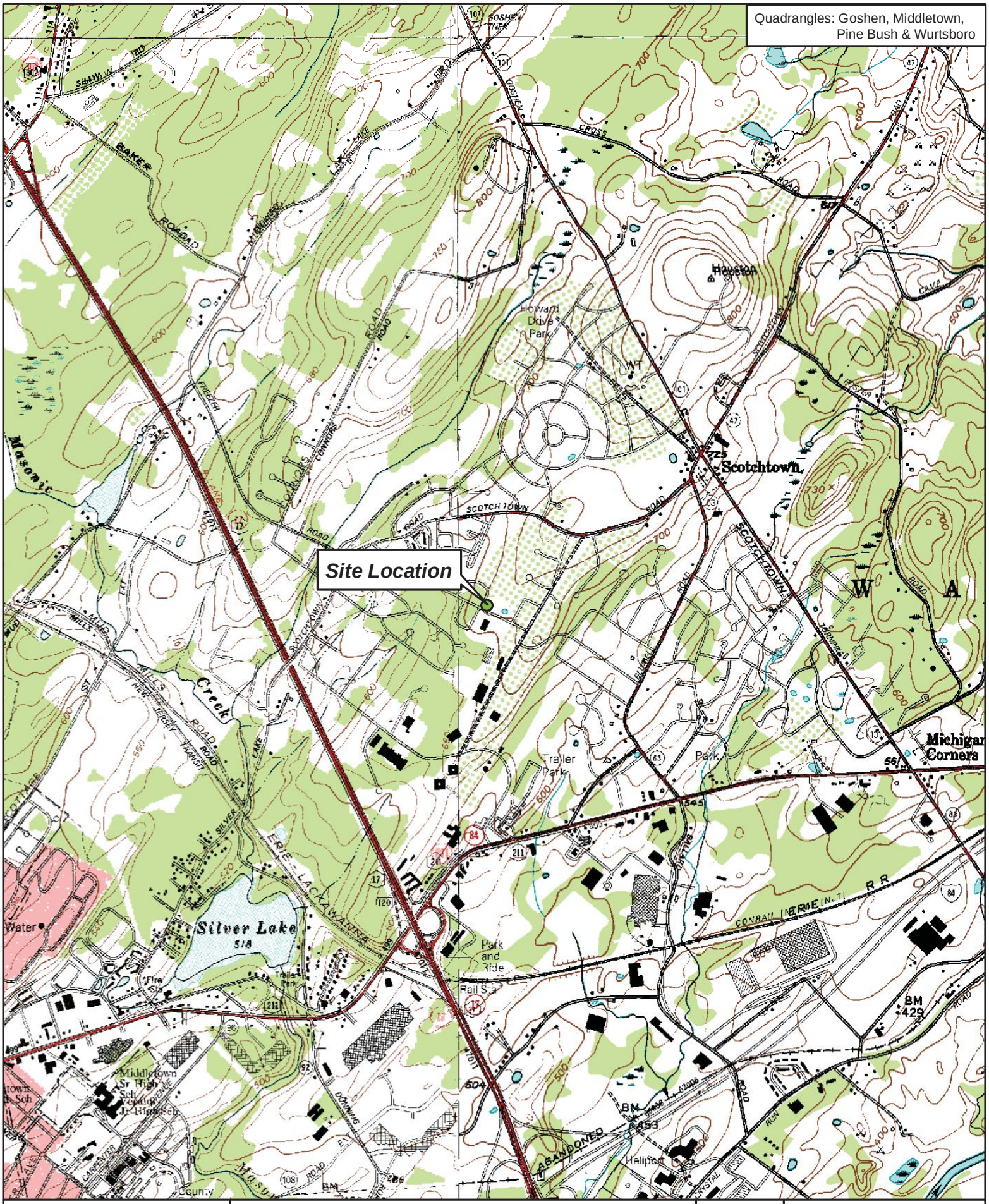
Soil Vapor

The evaluation of the potential for soil vapor intrusion resulting from the presence of site related groundwater contamination was evaluated by the sampling of sub-slab soil vapor under structures and indoor air inside structures. At this site due to the presence of buildings in the impacted area a full suite of samples were collected to evaluate whether actions are needed to address exposures related to soil vapor intrusion.

Sub-slab soil vapor samples were collected from beneath the slab-on-grade building at the site and at several slab-on-grade apartment buildings west of the former Interceram building. Indoor air and outdoor air samples were also collected at this time. 1,1 DCE, carbon tetrachloride, PCE, TCE, cis 1,2-DCE, 1,1,1 TCA, and vinyl chloride were detected in sub-slab vapor and indoor air in the former Interceram building (on-site); and in Building 61, Building 62, and Building 65 of Rockwood Garden Apartments (off-site). Active sub-slab depressurization systems (SSDS) were installed in the former Interceram Building, Building 61, Building 62, and Building 65. The final Site Management Plan for the site will address operation, maintenance, and reporting of all the SSDSs installed.

Based on the concentrations detected, and in comparison with the State's Soil Vapor Intrusion Guidance (NYSDOH 2006) in the State of New York, soil vapor contamination identified during the RI was addressed by the SSDS installations. The SSDSs are currently inspected and reported on annually.

Based on the concentration detected, and in comparison with the State's Soil Vapor Intrusion Guidance (NYSDOH 2006), soil vapor contamination identified during the RI was addressed by the SSDS installations under the OU 1 remedial program.



CHA

111 Winners Circle, P.O. Box 5269 • Albany, NY 12205-0269
Main: (518)453-4500 • www.cloughharbour.com

Figure 1 - Site Location

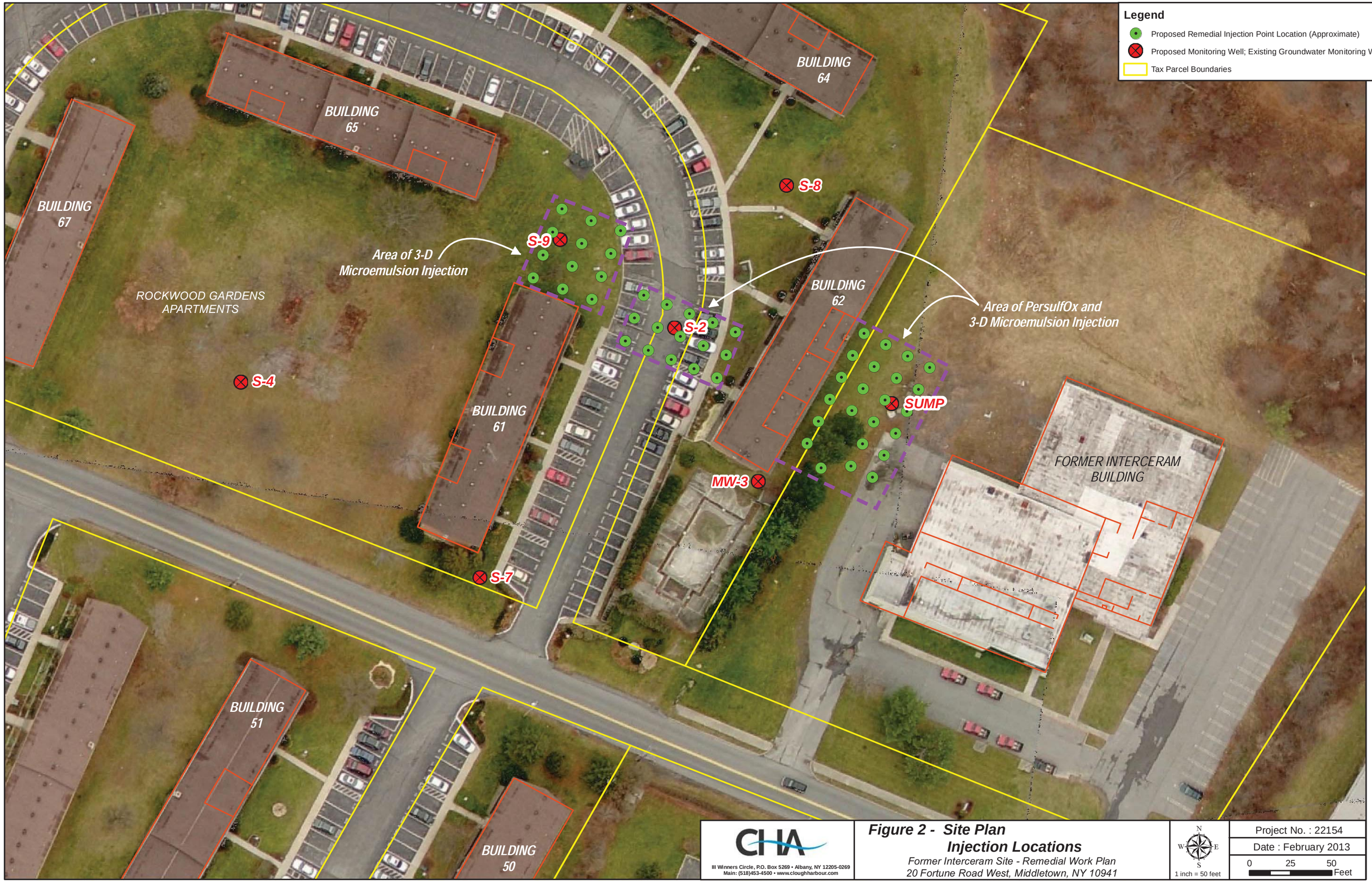
Former Interceram Site
20 Fortune Road West, Middletown, NY 10941

N
W E
S
1 inch = 2,000 feet

Project No. : 22154

Date : September 2011

0 1,000 2,000
Feet

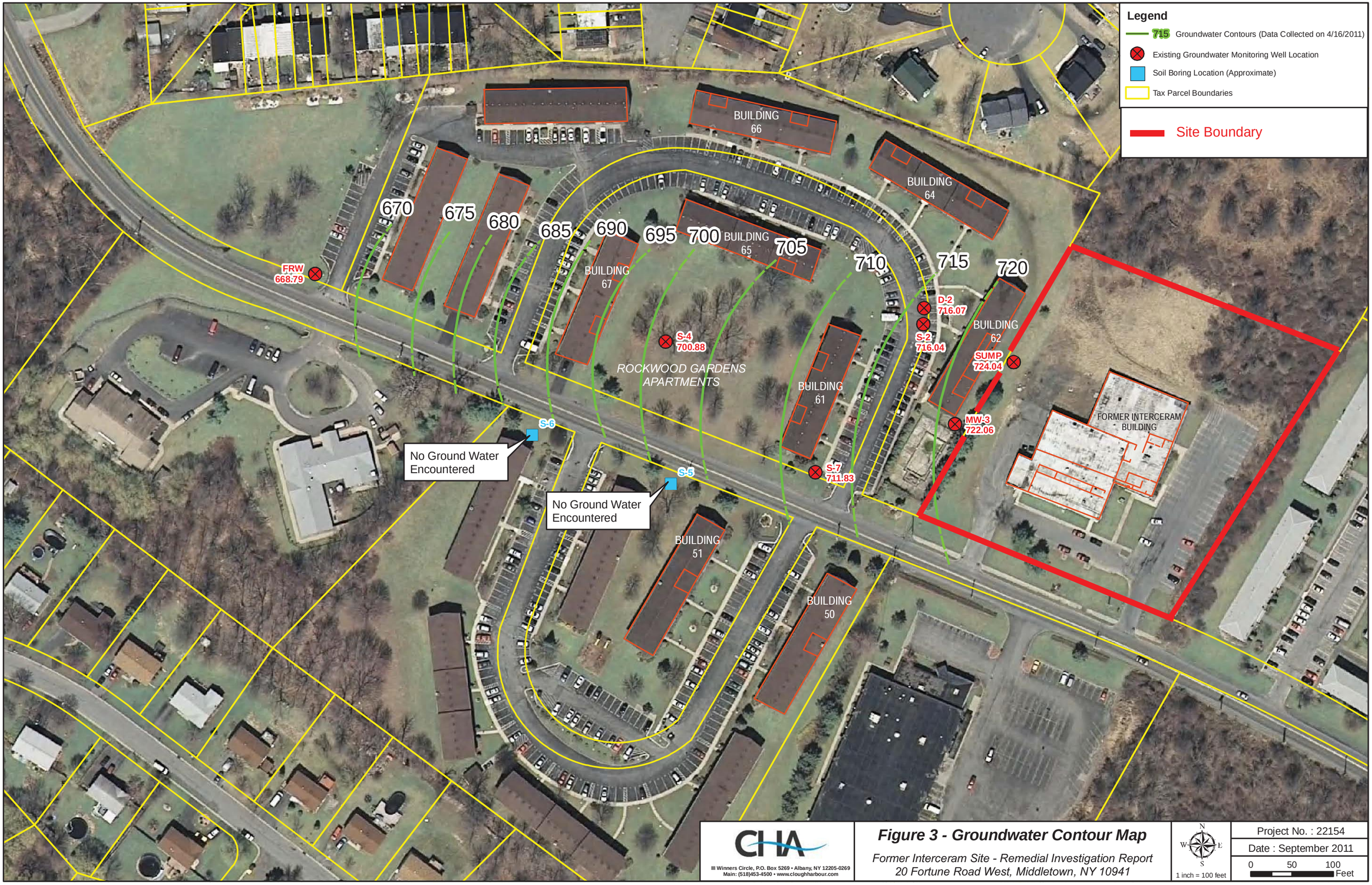


CHA
III Winners Circle, P.O. Box 5269 • Albany, NY 12205-0269
Main: (518)453-4500 • www.cloughharbour.com

Figure 2 - Site Plan
Injection Locations
Former Interceram Site - Remedial Work Plan
20 Fortune Road West, Middletown, NY 10941

N W E S
1 inch = 50 feet

Project No. : 22154
Date : February 2013
0 25 50 Feet



CHA

III Winners Circle, P.O. Box 5269 • Albany, NY 12205-0269
Main: (518)453-4500 • www.cloughharbour.com

Figure 3 - Groundwater Contour Map

Former Interceram Site - Remedial Investigation Report
20 Fortune Road West, Middletown, NY 10941

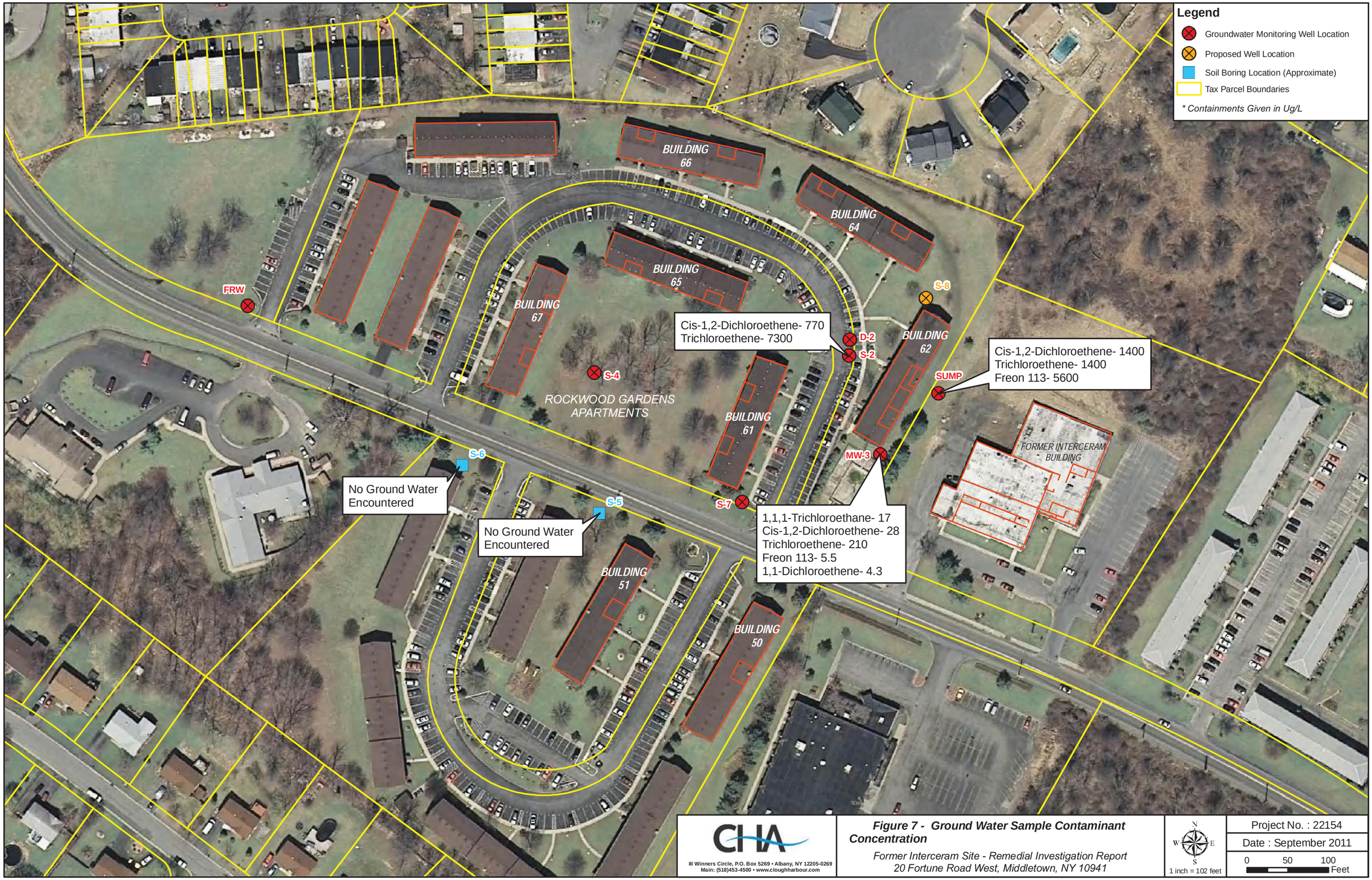
N W E S

1 inch = 100 feet

Project No. : 22154

Date : September 2011

0 50 100 Feet



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III Winners Circle, P.O. Box 5269 • Albany, NY 12205-0269
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Figure 7 - Ground Water Sample Contaminant Concentration

Former Interceram Site - Remedial Investigation Report
20 Fortune Road West, Middletown, NY 10941

N W E S
1 inch = 102 feet

Project No. : 22154
Date : September 2011
0 50 100 Feet

APPENDIX J

Environmental Easement

RONALD S. KOSSAR
ATTORNEY AT LAW

402 EAST MAIN STREET
POST OFFICE BOX 548
MIDDLETOWN, NEW YORK 10940

TELEPHONE (845) 343-5111
TELECOPIER (845) 343-5222
E-MAIL rsklaw@frontiernet.net

January 30, 2017

Andrew Guglielmi, Esq.
Section Chief A
Bureau of Remediation
Office of General Counsel
New York State Department
of Environmental Conservation
625 Broadway. 14th Floor
Albany, New York 12233-1500

Re: Ingo Priebke LLC, as Grantor, with New York State Department of Environmental Conservation, as Grantee
Premises located at 20 Fortune Road West, Town of Wallkill, Orange County, New York
Section 41, Block 1, Lot 26.5
Environmental Easement
Interceram Site No.: 336045

Dear Mr. Guglielmi:

Enclosed herein please find a copy of the Environmental Easement filed in the Orange County Clerk's Office on January 26, 2017 for your files.

If you have any questions or wish to discuss this matter further, please do not hesitate to contact my office.

Very truly yours,

RONALD S. KOSSAR

RSK/sb
Enclosure
cc: Ingo Priebke, LLC (w/encl.)

ORANGE COUNTY CLERK

ANN G. RABBITT

Receipt

Receipt Date: 01/26/2017 03:45:19 PM
RECEIPT # 2262483

Recording Clerk: CH
Cash Drawer: CASH29
Rec'd Frm: RONALD S KOSSAR

Instr#: 20170005926 Bk/Pg: 14173/23
DOC: RIGHT OF WAY (R)
DEED STAMP: 5585
OR Party: INGO PRIEBKE LLC
EE Party: PEOPLE OF THE STATE OF NY

Recording Fees	$100.00
Transfer Tax	$0.00
DOCUMENT TOTAL: ---->	$100.00

Receipt Summary

TOTAL RECEIPT: ---->	$100.00
TOTAL RECEIVED: ---->	$100.00
CASH BACK: ---->	$0.00

PAYMENTS

Check # 26582 ->	$100.00

RONALD S KOSSAR

255 Main St., Goshen, NY 10924 Phone (845) 291-2690 Fax (845) 291-2691

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36

OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 18TH day of JANUARY, 2017 between Owner(s) Ingo Priebke, LLC, having an office at 11 Somerset Lane, Warwick, New York 10990, County of Orange, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 20 Fortune Road West in the Town of Wallkill, County of Orange and State of New York, known and designated on the tax map of the County Clerk of Orange as tax map parcel numbers: Section 41 Block 1 Lot 26.5, being the same as that property conveyed to Grantor by deed dated December 3, 2004 and recorded in the Orange County Clerk's Office in Liber and Page 11708/0917. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 3.00 +/- acres, and is hereinafter more fully described in the Land Title Survey dated December 20, 1999 prepared by John Lanc, L.S. of Lanc & Tully Engineering and Surveying, P.C., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is

extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: W3-0781-96-06, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property. The current Responsible Party to remediate the Controlled Property and implement the SMP is Ceramtec North America Corporation f/k/a Interceram.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Orange County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining

contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation

pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: 336045
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and

communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Ingo Priebke, LLC:

By: _____

Print Name: Christian Priebke

Title: Manager Date: 1-11-17

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ORANGE)

On the 11th day of January, in the year 20 17, before me, the undersigned, personally appeared Christian Priebke, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York

SUSAN BUSBY
Notary Public, State of New York
No. 244824186
Qualified in Orange County
Commission Expires January 31, 20 19

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 18th day of January, in the year 2017 before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by/his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of Wallkill, County of Orange, State of New York, and being more accurately bounded and described as follows:

BEGINNING at a point on the northerly side of a Fortune Road West, said point of beginning being located 393.82 feet, as measured along the northerly line of Fortune Road West, from its intersection with the northwesterly line of Industrial Drive; thence from said point of beginning and along the northerly line of Fortune Road West, on a curve to the left, having a radius of 2,772.01 feet, an arc distance of 78.08 feet, as described by the chord North 54°35' 05" West 78.06 feet, to a point of tangency; thence on a tangent, North 55°23' 30" West 258.24 feet to a point, said point being located North 42°18' 31" East 50.45 feet from the northerly corner of the 3.11 acre parcel now occupied by the B.O.C.E.S. School; thence leaving Fortune Road West and through lands of Mills Heights, Inc. on a line which is the prolongation of the northerly line of the existing B.O.C.E.S. School parcel, North 42°18' 31" East 394.55 feet to a point, thence still continuing through lands of Mills Heights, Inc., South 56°21' 12" East 327.43 feet to a point; thence still through lands of Mills Heights, Inc. South 40°54' 45" West 400.00 feet to the point of beginning.

Containing approximately 3.00 acres more or less.

Environmental Easement

Title No. _____

INGO PRIEBKE, LLC

Section 41
Block 1
Lot 26.5
County or Town Town of Wallkill
Orange County
Street Address 20 Fortune Road West
Middletown, NY 10941

To

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL
CONSERVATION

Return By Mail To:

Ronald S. Kossar, Esq.
P.O. Box 548
402 East Main Street
Middletown, NY 10940

Reserve This Space For Use Of Recording Office