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Design Report/Implementation Plan

Dewey Loeffel Landfill Superfund Site
Nassau, New York

February 13, 2013

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Superfund Site
Nassau, New York

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1. Introduction

This Design Report/Implementation Plan (DR/IP) has been prepared for the proposed treatment system at the Dewey Loeffel Landfill Superfund Site located in the Town of Nassau, Rensselaer County, New York (site). The work described herein is being completed pursuant to the Administrative Settlement Agreement and Order on Consent for a Removal Action (CERCLA Index No. 02-2012-2005) (Consent Order) executed by the United States Environmental Protection Agency (USEPA), General Electric Company (GE), and SI Group, Inc. (SI Group). (GE and SI Group are referred to herein as Respondents.)

This Design Report/Implementation Plan has been prepared to provide the following:

- Design criteria, detailed plans, drawings, and equipment specifications for treatment of extracted groundwater and landfill leachate;
- Procedures to be followed during construction of the treatment system;
- Plan for additional hydrogeologic investigation activities during installation of five new extraction wells;
- Plan for additional sampling and potential conversion of the five open deep bedrock boreholes previously installed by USEPA into monitoring wells;
- Plan for start-up and shakedown of the treatment system;
- Plan for performance monitoring of the treatment system influent, mid-process, and effluent;
- Plans for monitoring groundwater outside of the landfill, including residential wells without point of use (POU) treatment systems, residential wells with POU treatment systems, and the contaminant plume hydraulically downgradient of the landfill;
- An operation, maintenance and monitoring (OM&M) plan for the treatment system; and
- A schedule for the construction and start-up of the treatment system.

1.1 Location and Description

The landfill is located along the south side at 350 Mead Road between Nassau-Averill Park Road and Central Nassau Road. A map showing the location of the landfill and surrounding area is presented on Figure 1. Key features are presented on Figure 2.

The capped area of the landfill is roughly triangular in shape and situated in a low-lying area between two wooded hills. The landfill is bounded to the north by Mead Road, and to the south, west and east by undeveloped forested land. The rural area surrounding the landfill is sparsely populated and contains few residential properties and a bowhunter's club lodge.

Topography in the area generally slopes downward from east to west. Surface water at the landfill mostly drains to the west toward the Valatie Kill via Tributary T11A. The Valatie Kill flows in a southwesterly direction to Nassau Lake, located approximately three miles downstream. Surface water from a portion of the landfill flows to the south into a small unnamed tributary which discharges into Valley Stream and ultimately Nassau Lake.

The hydraulic gradient of groundwater in overburden soils in the vicinity of the landfill is generally to the west and/or southwest. The hydraulic gradient of groundwater in the bedrock is similar. However, based on the distribution of volatile organic compounds (VOCs) in a groundwater contaminant plume emanating from the landfill to the south, bedrock groundwater flows primarily to the south due to the influence of fractures within the bedrock.

1.2 History

As described in the Consent Order, from approximately 1952 to 1968, the landfill was owned and operated by several companies, including the Loeffel Waste Oil and Removal Service Company (Loeffel Companies) as a waste disposal facility. During this time, the landfill consisted of two waste lagoons located in the western and central portions of the landfill, a 6-foot deep oil pit in the east central portion of the landfill, four 30,000-gallon aboveground storage tanks, and a drum disposal area located in the southeastern portion of the landfill.

Landfill disposal operations reportedly ceased in 1968 by order of the State of New York. Between 1970 and 1975, remedial actions undertaken by the Loeffel Companies included covering and grading the drum disposal area, oil pit and lagoons and constructing a system of drainage ditches around the landfill. From 1974 to 1980, the Loeffel Companies reportedly also operated a waste oil transfer station utilizing the four 30,000-gallon aboveground storage tanks.

On September 23, 1980, GE entered into an agreement with the New York State Department of Environmental Conservation (NYSDEC) which required GE to perform field investigations, submit an engineering report which discussed the collected data, identify remedial alternatives, and recommend a remedial alternative. A remedy was subsequently selected by NYSDEC and involved the installation of soil-bentonite cutoff wall around the landfill, an overlying clay cap, and a landfill leachate collection system below the cap within the cutoff wall. The design of the remedy was performed by GE and approved by NYSDEC. The remedy was subsequently implemented by NYSDEC using funding provided by GE, Schenectady Chemicals, Inc. (now SI Group), and Bendix

Corporation (now Honeywell International, Inc.). Beginning in 1983, NYSDEC and/or GE performed a variety of response actions at the site, some of which were performed in accordance with Records of Decision (RODs) issued by NYSDEC in January 2001 and January 2002. The response actions included, but were not limited to, the following:

- Installation and operation of a bedrock groundwater recovery well system involving three extraction wells located to the south of the landfill;
- Transportation of landfill leachate and groundwater for off-site treatment;
- Installation, operation, maintenance and monitoring of point-of-use treatment systems for five residential wells (located on four properties) to remove VOCs;
- Routine VOC monitoring of other residential wells located near the landfill; and
- Routine monitoring of many groundwater monitoring wells located outside the landfill's perimeter fence.

The current groundwater extraction system was designed and constructed by NYSDEC is located along the approximate centerline of the VOC plume to the south of the landfill and includes three bedrock extraction wells (designated EW-1, EW-2 and EW-3, see Figure 2). Beginning in late March 2008 and through 2010, NYSDEC extracted groundwater from these three extraction wells on a seasonal basis, operating during the spring, summer, and fall months. Along with leachate from the landfill, extracted groundwater was transported for off-site treatment and disposal. NYSDEC transported landfill leachate for off-site treatment and disposal each year since 1991 with the exception of 1994. NYSDEC continued operation of the landfill leachate collection system through October 2011. Operation of the groundwater extraction system by NYSDEC did not resume after shutdown in the fall of 2010 until July 2011.

At the request of NYSDEC, USEPA proposed the site for inclusion on the National Priorities List (NPL) on March 4, 2010. The site was subsequently added to the NPL on March 10, 2011.

USEPA subsequently took over operation of the landfill leachate collection system and the groundwater extraction system to the south of the landfill on October 31, 2011. USEPA winterized the system, allowing groundwater extraction to continue during the winter months.

Pursuant to the Consent Order, GE and SI Group assumed responsibility from USEPA for continued operation and maintenance of the on-site leachate collection system and the off-site groundwater extraction system. The transition from USEPA to the Respondents occurred on August 1, 2012, and the first transportation of leachate and extracted groundwater by the Respondents occurred on

August 2, 2012. The leachate and extracted groundwater will continue to be transported for off-site treatment and disposal until such time as an off-site treatment system is designed, constructed and approved for operation. Pursuant to the Consent Order, GE and SI Group will design and construct the treatment system to treat landfill leachate and extracted groundwater. Upon USEPA approval that the treatment system discharge meets the substantive requirements established pursuant to the Consent Order, routine transportation of leachate and extracted groundwater for off-site treatment will cease.

1.3 Plan Organization

This plan is organized into the sections described below.

Section	Description
Section 1 – Introduction	Provides the objectives of this Design Report/Implementation Plan, location, description and history of the landfill, and the plan organization.
Section 2 – Design Criteria	Provides the basis of design for the proposed treatment system including flow rate, influent design concentrations, effluent concentrations, and air dispersion modeling results.
Section 3 –Treatment System Overview	Provides the treatment system overview, including process description, anticipated performance of unit treatment processes, media usage, and utility requirements.
Section 4 – Implementation Plan	Provides plans for the construction and monitoring of the proposed treatment system.
Section 5 – Schedule	Provides a schedule for the construction and start-up of the treatment system.

This DR/IP references the following supporting documents:

- Appendix A – Basis of Design
- Appendix B – Effluent Limitations and Monitoring Requirements
- Appendix C – Contract Drawings
- Appendix D – Material and Performance Specifications
- Appendix E – Construction Plan
- Appendix F – New Extraction Wells Installation Plan
- Appendix G – Monitoring Plan for Existing Open Deep Bedrock Boreholes
- Appendix H – Start-Up Plan
- Appendix I – OM&M Plan
- Appendix J – Performance Monitoring Plan
- Appendix K - Schedule

2. Design Criteria

This section presents the basis of design for the proposed treatment system including flow rate, influent design concentrations, effluent limitations, air dispersion modeling results, anticipated performance of unit treatment process, anticipated media usage, and utility requirements. The influent design concentrations and effluent limitations are provided in Table 1 of the Basis of Design Memorandum found in Appendix A. Mass balances at flow rates of 5, 10, 15, 20 and 25 gallons per minute (gpm) are provided in Table 2 of the Basis of Design Memorandum.

2.1 Extraction Well Flow and Location

The assumed total groundwater extraction and landfill leachate collection rate is expected to be between approximately 8 and 15 gpm. This anticipated total groundwater extraction and landfill leachate collection rate is based on an anticipated groundwater extraction rate of approximately 1 to 2 gpm per well from the three existing extraction wells and the five additional wells (total of eight extraction wells) and 0.75 gpm from the landfill leachate collection system. However, the design of the treatment system is based on an average flow rate of 15 gpm and a maximum flow rate of 25 gpm. Comparatively, the three existing wells operated by NYSDEC, USEPA and now the Respondents have extracted groundwater at an average combined flow rate of about 3 to 4 gpm for seven months in 2009 and 2010, six months in 2011, and twelve months in 2012.

In 2009, 2010, and 2011, based on data provided by NYSDEC and USEPA regarding the volume of landfill leachate and extracted groundwater transported off-site, NYSDEC, USEPA and the Respondents extracted 846,836 gallons, 1,075,381 gallons, 759,197 gallons, and 1,829,113 gallons of groundwater, respectively, from the three existing extraction wells during the periods of operation each year. Using these volumes, the effective annual groundwater extraction rates were 1.6 gpm in 2009, 2.1 gpm in 2010, 1.4 gpm in 2011, and 3.5 gpm in 2012. However, groundwater extraction only occurred for about seven months in 2009 and 2010, and six months in 2011. Therefore, during the periods of operation, the extraction rate was about 3 to 4 gpm for the three wells combined, which is comparable to the full year of operation in 2012. Extraction well EW-2 accounted for about 50 to 60 percent of the flow with the remainder about evenly split between EW-1 and EW-3. NYSDEC only extracted 206,511 gallon of groundwater in 2008, and over a shorter period than in the three subsequent years, so that flow data was not used during the design process.

The expected landfill leachate collection rate is approximately 0.75 gpm on a year-round basis, or 400,000 gallons per year. This is based on NYSDEC's collection rate that averaged about 368,000 gallons per year for the 15 years between 1997 and 2011 (with USEPA performing the landfill leachate collection in late 2011). In 2012, the leachate collection rate was about 0.5 gpm, or about 264,226 gallons per year, which may be related to dry weather conditions.

The locations of the five proposed new extraction wells, designated EW-4 through EW-8, were determined by utilizing laboratory analytical data from the three existing extraction wells and various existing monitoring wells that are located within the distribution of VOCs and semi-volatile organic compounds (SVOCs) to the south/southwest of the landfill. Based on the existing laboratory analytical data, extraction wells EW-4 through EW-8 were located south/southwest of the landfill in order to capture higher concentrations of VOCs closer to the landfill. More details were provided in the Additional Information Regarding Proposed Extraction Wells Memorandum which was provided in Appendix B of the Preliminary Design Plan (PDP) conditionally approved by USEPA.

A numerical groundwater flow model using a two-dimensional grid was developed utilizing regional and site-specific hydrogeologic information to evaluate the impact of using a seven-well extraction system versus the current three-well extraction system. Measured groundwater level data from April and November 2010 were used to compare simulated and observed flow fields under non-pumping and pumping conditions, respectively. The flow model was adjusted to reflect the observed hydrologic conditions at and near the landfill. During the adjustment process, hydraulic conductivity zones were added and parameter values were adjusted within a reasonable range as dictated by the available site-specific and regional hydrogeologic information. The flow model then was utilized to evaluate the groundwater capture zone of the three existing extraction wells and assess the potential enhanced capture zone that could be achieved by the expanded extraction system. Simulated capture zones for the existing and proposed extraction systems indicate that the seven-well extraction system would significantly increase the size of the groundwater capture zone in the bedrock. An overview of the groundwater flow modeling and hydraulic capture evaluation was presented in the Groundwater Capture Evaluation Memorandum in Appendix C of the PDP conditionally approved by USEPA. Although the seven-well extraction system proposed in the Groundwater Capture Evaluation Memorandum would significantly increase the size of the groundwater capture zone in the bedrock, an eight-well extraction system is now proposed, including the three existing extraction wells, three new extraction wells (EW-4, EW-6 and EW-7) that are 200 feet deep, and two new extraction wells (EW-5 and EW-8) that are 250 feet deep. Details on additional hydrogeologic investigation activities planned during installation of the five new extraction wells are provided in Appendix F.

2.2 Influent Design Concentrations

Groundwater sampling and analysis from the existing three extraction wells and landfill leachate have shown concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX), chlorinated VOCs, and some SVOCs in excess of the effluent limitations. A summary of the sampling and analysis performed prior to the Consent Order was provided in Appendix B of the PDP conditionally approved by USEPA. The influent design concentrations were developed using the analytical data gathered

prior to the Consent Order, the analytical data provided in the Preliminary Design Data Report (PDDR) submitted to USEPA, and additional extraction well sampling results from December 2012 submitted to USEPA in the December 2012 Monthly Progress Report. The influent design concentrations for groundwater and landfill leachate were calculated by first averaging the concentrations for each parameter at each of the three extraction wells and the leachate collection tank. A flow-weighted concentration for each parameter was then calculated. Because extraction well EW-2 has about twice the flow, EW-2 concentrations were weighted two times the concentrations of each of the other two extraction wells (EW-1 and EW-3) and the landfill leachate. The resultant influent design concentrations are provided in Table 1 of the Basis of Design Memorandum in Appendix A.

2.3 Effluent Limitations

The treatment system is being designed to remove constituents of concern from the extracted groundwater and landfill leachate before discharge to the Valatie Kill. Effluent limitations for individual constituents are included in Table 1 of the Basis of Design Memorandum in Appendix A. USEPA provided Respondents with revised discharge limitations and monitoring requirements from NYSDEC on February 6, 2013. In the substantive requirements, the discharge to the unnamed tributary to the Valatie Kill is referred to as Outfall 001 and the discharge to the Valatie Kill is referred to as Outfall 002. The effluent limitations on Table 1 of the Basis Design Memorandum in Appendix A are the limitations for discharge to the Valatie Kill. The effluent limitations and monitoring requirements associated with discharge to the Valatie Kill are presented in Appendix B.

2.4 Air Dispersion Modeling Results

Anticipated VOC and SVOC concentrations in the air stripper exhaust and all vented tanks were modeled to evaluate the need for vapor treatment based on current NYSDEC air quality regulations. Based on the influent design concentrations and design average flow rate (i.e., 15 gpm), vapor-phase treatment will be necessary and has been incorporated into the design. Vented air from the bioreactor and the air stripper exhaust will both be treated through three vapor-phase granular activated carbon (GAC) vessels installed in series on the air stripper blower outlet. These GAC vessels will address VOCs with the exception of methylene chloride and vinyl chloride. Two vapor-phase potassium permanganate impregnated zeolite (PPZ) vessels will be installed after and in series with the GAC vessels for methylene chloride and vinyl chloride destruction. Additional information regarding the dispersion modeling used to calculate air emissions was provided in the PDP conditionally approved by USEPA. As shown on Table 3 of the Basis of Design Memorandum, which is an updated version of the table provided in Appendix E of the PDP, the air emissions from the proposed treatment system are much lower than the applicable annual guideline concentrations (AGCs) and short-term guideline concentrations (SGCs).

3. Treatment System Overview

The Respondents have determined, and based on the Consent Order, USEPA concurs, that continued transportation of leachate and extracted groundwater for off-site treatment and disposal is not a long-term environmentally sustainable option. The purpose of the treatment system is to eliminate the need for the continued, year-round trucking of extracted groundwater and leachate from the site. The treatment system will also facilitate the extraction of additional groundwater (from eight extraction wells, including five new extraction wells in addition to three existing extraction wells). The treatment system is primarily designed to address VOCs and SVOCs in the extracted groundwater and landfill leachate prior to discharge to surface water (i.e., the Valatie Kill). The system is not specifically designed to treat metals, but some amount of metals treatment is expected to occur as dissolved metals are taken up by biomass and removed with the biological sludge, removed with solids in the bag filters, and adsorbed onto the liquid-phase GAC.

Extracted groundwater will be pumped from the extraction wells to an equalization tank located in the treatment building. Landfill leachate will be first pumped from the leachate collection tank at the landfill to a leachate tank in the treatment building, and will then be pumped into the main equalization tank. Groundwater and landfill leachate will then be pumped from the main equalization tank to an aerobic fixed-film bioreactor tank. The bioreactor will consist of a submerged fixed-film growth media within a reactor tank, incorporating aeration and biological treatment. The bioreactor system will be designed primarily to destroy BTEX, vinyl chloride, and acetone, and is also expected to address other chlorinated VOCs and SVOCs to some extent. Inside of the bioreactor, biomass will attach to the growth media, with aerators and chemical feed systems to provide sufficient oxygen and nutrients for sustaining adequate biomass within the reactor. In the course of the biological process, biomass will slough off the growth media and exit the reactor tank. Effluent from the reactor tank, which will include this biomass and other solids that carryover from the bioreactor, will flow to a clarifier. Settled solids collected at the bottom of the clarifier will be periodically withdrawn for dewatering and off-site transportation and disposal.

The clarifier settling tank will overflow to a pump station tank, which will be equipped with transfer pumps leading to subsequent treatment processes and a recycle pump. A recycle stream will be directed back to the main equalization tank in order to maintain a consistent flow rate through the bioreactor/clarifier as well as provide additional bio-treatment to enhance removal of contaminants. Water will then be pumped through a bag filtration system (two bag filter units installed in parallel) for removal of suspended solids prior to being directed to an induced draft low-profile air stripper to address remaining or residual strippable VOCs. Vapor exhaust from the air stripper and the vented air from the bioreactor will pass through three vapor-phase GAC units for adsorption of VOCs followed by two vessels containing PPZ for destruction of methylene chloride and vinyl chloride. Treated effluent from the air stripper will be either recycled back to the equalization tank

based on tank level to maintain a continuous flow rate across the bioreactor, clarifier and air stripper, or directed through two liquid-phase GAC units in series to address SVOCs, residual adsorbable VOCs, and, if present, low concentrations of polychlorinated biphenyls (PCBs). Treated effluent will then flow to a backwash water storage tank. In order to maintain an adequate supply of treated water for backwashing purposes, all effluent will be directed through this tank. Treated effluent will be pumped for discharge to the Valatie Kill. Contract Drawings and Material and Performance Specifications are included in Appendices C and D, respectively.

3.1 Anticipated Bioreactor Performance

As stated above, the aerobic fixed-film bioreactor is designed primarily to destroy BTEX, vinyl chloride and acetone, but it will also treat SVOCS and other chlorinated VOCs to some extent. The design was based on observed operational performance from existing ARCADIS-operated biological treatment systems, discussions with equipment suppliers, results of a two-phase bench-scale treatability test provided in the PPDR, and results from a third pilot-scale treatability test completed at the site in January 2013. The results of that third test are discussed in the Phase III Treatability Test Report provided as Attachment A of the Basis of Design Memorandum in Appendix A. Anticipated removal rates are provided in the Basis of Design Memorandum and, for the purpose of developing the mass balances in Table 2 of the Basis of Design Memorandum, the lower removal rates were used and the removal rates were not varied for flow rates between 5 and 25 gpm.

3.2 Anticipated Low-Profile Air Stripper Performance

The air stripper is being designed to address VOCs listed in Table 1 of the Basis of Design (see Appendix A) leaving the bioreactor, with the exception of acetone and other ketones, to below 1 microgram per liter (µg/L). Acetone and other ketones, in addition to SVOCs (except chlorinated benzenes), are not anticipated to be removed by the air stripper.

3.3 Anticipated Liquid-Phase Carbon Usage

Based on the influent design concentrations provided in Table 1 of the Basis of Design in Appendix A, an assumed average groundwater extraction and landfill leachate flow rate of 15 gpm, and the lower end of the anticipated constituent removal efficiency ranges by equipment upstream of the liquid-phase GAC units identified above, the annual liquid-phase carbon usage is estimated to be approximately 6,000 pounds per year (three change-outs of the lead GAC unit per year). Carbon usage rates have been estimated based on isotherms provided by Tigg.

3.4 Anticipated Vapor-Phase Media Usage

Based on the influent design concentrations provided in Table 1 of the Basis of Design in Appendix A, an assumed average groundwater extraction and landfill leachate flow rate of 15 gpm, and the lower end of the anticipated constituent removal efficiency ranges by equipment upstream of the low-profile air stripper identified above, the annual vapor-phase carbon usage is estimated to be approximately 5,000 pounds per year (one or two change-outs of the lead GAC unit per year) to treat VOCs, except as noted below. Carbon usage rates are based on the assumption that methylene chloride and vinyl chloride will not be effectively removed by the GAC. The annual vapor-phase PPZ usage is estimated to be approximately 1,000 pounds per year (one change-out of the lead PPZ unit every three to four years) for the destruction of methylene chloride and vinyl chloride. While the liquid and vapor-phase GAC units were sized based on anticipated carbon usage, the vapor-phase PPZ units were also sized based on the required contact time needed for destruction of methylene chloride and vinyl chloride. Usage rates for both vapor-phase media have been estimated based on isotherms provided by Tigg.

3.5 Utility Requirements

Single-phase power is available from National Grid on Mead Road near the landfill. As identified on the Contract Drawings in Appendix C, a new 480 volt transformer is required to supply a 400 ampere service to the treatment building. In order to power the well pumps and treatment equipment located in the treatment building, step-down transformers will be installed to provide 240 volt single-phase service. National Grid has easements in place to install the necessary utility poles and transformer for this project, and this will be performed by National Grid prior to or during construction of the treatment system.

No natural gas, compressed air, or potable water is anticipated to be required. Sanitary facilities will consist of a portable restroom located outside the treatment system (but within the fencing that will surround the treatment system).

4. Implementation Plan

The plan for implementing the DR/IP is included in this section. This includes construction of the treatment system, installation of the five new extraction wells, treatment system start-up/shakedown, and treatment system OM&M and performance monitoring. Also included are plans monitoring groundwater outside of the landfill, including residential wells without POU treatment systems, residential wells with POU treatment systems, and the contaminant plume hydraulically downgradient of the landfill, and for additional testing and potential conversion of the five open deep bedrock boreholes previously installed by USEPA into monitoring wells.

4.1 Construction

The Construction Plan included in Appendix E describes the procedures to be followed during construction of the proposed treatment system. Specifically, the Construction Plan covers the following:

- Construction quality assurance/construction quality control (CQA/CQC) activities;
- Procedures for assessing and handling spoil materials during construction along with decontamination of construction equipment;
- Schedule for construction activities; and
- Construction notifications, inspections and reporting.

A Construction Quality Assurance Plan (CQAP), included as Attachment A to the Construction Plan, describes the following:

- CQA/CQC general procedures including site inspections/reviews and data management;
- CQA/CQC requirements for major components of the proposed treatment system (i.e., trenches, concrete, process equipment, and electrical equipment and controls) including installation, inspections and testing requirements;
- Documentation of construction activities; and
- Preparation of post-construction (aka as-built or record) drawings.

The construction schedule is discussed in Section 5 of this DR/IP.

Pursuant to Paragraph 63 of the Consent Order, within 30 days of the conclusion of the shakedown period discussed in the Start-Up Plan (see Appendix H), Respondents will submit to USEPA a Construction Completion Report. The report will include, but not be limited to, post-construction (aka record or as-built) drawings for the treatment system, data collected during the shakedown period, and a final OM&M Plan for the system.

4.2 New Extraction Well Installation

Additional hydrogeologic investigation activities are proposed to be performed during implementation of the DR/IP to expand the amount of data already available regarding the bedrock groundwater system at the site. More specifically, hydrogeologic investigation activities are proposed to be completed at each of the five new extraction wells that will be installed. At the location of each new extraction well, the hydrogeologic conditions in the bedrock will be characterized using a multidisciplinary approach. This multidisciplinary approach will include the use of rock coring, borehole geophysics (including vertical flow meter testing under ambient and pumping conditions), and packer testing (for both hydraulic and water quality data). In addition, bedrock samples will be collected at some of the locations for laboratory analysis of various physical parameters, and detailed hydraulic conductivity profiling will be performed at one or two locations. Following completion of the hydrogeologic investigation activities, each borehole will be converted into an extraction well per the Contract Drawings presented in Appendix C. A detailed description of the activities to be performed during drilling and installation of the new extraction wells is presented in Appendix F.

4.3 Monitoring of Existing Open Deep Bedrock Boreholes

Additional activities are proposed to be performed for the five open deep bedrock boreholes (designated EPA-1 through EPA-5) previously installed by USEPA in 2011 at the site. Specifically, groundwater samples will be collected from multiple intervals using passive diffusion bags (PDBs) set within each of the five boreholes to obtain groundwater quality information for comparison with the results of the packer testing performed by USEPA and also for intervals deeper than packer tested previously.

In addition, it is proposed that each of the five open deep bedrock boreholes be converted into permanent monitoring wells and incorporated into the routine groundwater monitoring program (see the Performance Monitoring Plan in Appendix J). Based on the results obtained by USEPA during its Initial Supplemental Site Investigation (ISSI), each open deep bedrock borehole will be completed as a screened well. Conceptually, each well will have a single well screen 20 to 30 feet in length which targets the depth interval with the highest concentration of VOCs and which has also been shown to yield a sufficient quantity of groundwater for routine sampling. Alternatively, the open bedrock boreholes may remain and be sampled in the routine groundwater monitoring program using PDBs

set at two or three depths. The decision on which approach to use (completion of the boreholes into screened wells, or use of two or three PBDs at different depths within the existing boreholes) for routine long-term monitoring will be based on the results of the stratified PDB sampling in conjunction with the findings from USEPA's ISSI. A detailed description of the activities to be performed as part of the PDB groundwater sampling program and the potential conversion of the open deep bedrock boreholes to screened monitoring wells is presented in Appendix G.

4.4 Preliminary Start-Up Activities and Clean Water Start-Up

At the conclusion of construction, preliminary start-up activities will be conducted in accordance with the Start-Up Plan (see Appendix H). The first step will be to prove the functionality of each component in the treatment system prior to clean water start-up. Testing will be completed to verify that all instrumentation and associated inputs/outputs (I/Os) at the extraction wells, leachate collection tank, and treatment system are functioning properly. Filtration media (e.g., pressure filters, vapor- and liquid-phase GAC, and vapor-phase PPZ) will also be checked to verify that the appropriate vessels and the units have been properly prepared to receive water or vapor. The mechanical commissioning portion of the preliminary start-up activities will serve to verify that all tanks, treatment units, pumps, piping, valves, and instrumentation are installed at the appropriate locations in the proposed treatment system. This process will also verify that all valves are in the proper operating position to allow water to flow through the system as intended.

Following successful completion of the preliminary start-up activities, a clean water system start-up will occur at the treatment system. The main objectives of the clean water system start-up are to verify that major equipment is operating in accordance with manufacturers' specifications and control systems are working properly.

Prior to filling any tanks with clean water, the treatment system piping downstream of discharge pumps will be temporarily rerouted to the influent tank using flexible hose to ensure clean water is not discharged from the treatment building. All tanks in the treatment building will be filled with clean water prior to performing the clean water start-up. Clean water trucked in from off-site will be used to fill the tanks so that water from on-site sources is not used at any time during the clean water start-up. It is not required that all tanks be filled at the same time so some of the water used to fill one tank may subsequently be used to fill another.

The clean water system start-up will consist of operating all equipment and systems in the treatment building. The clean water system start-up will be completed when proper operation of all pumps, control valves, instrumentation, and interlocks has been verified.

4.5 Treatment System Start-Up and Shakedown

During the construction of the treatment system, a vault with piping and valves, located just southwest of the southern tip of the landfill as shown on Figure 2, will be installed to allow pump and truck operations to continue in parallel with the construction activities. As much mechanical and electrical work as possible will be completed in order to minimize any other interruptions to the ongoing pump and truck operations. However, a shutdown of up to two weeks will be required to install and connect new pumps, piping, electrical service, and controls at the three existing extraction wells and the leachate collection tank. This transition work will be done after the clean water start-up is complete to ensure that the treatment system is ready to receive leachate and groundwater. Once the transition is complete, pump and truck operations using the existing frac tanks in the pole barn and leachate transfer station will be discontinued. Any further need for trucking will be performed from the treatment system area.

Initial treatment system start-up will occur using groundwater from existing extraction wells EW-1, EW-2, and EW-3 and leachate from the existing leachate storage tank at the landfill. Prior to start-up and while the transition steps discussed above are being completed, media and activated sludge from a local publically owned treatment works (POTW) and/or another source will be added to the bioreactor. Additionally, the discharge line from the treatment system will be rerouted to either of two frac tanks located outside the treatment building but inside a fenced area. Based on the current rates of leachate and groundwater removal, at least two frac tanks will be used and are sufficient to store approximately six days of leachate and groundwater removal.

The treatment system start-up will be initiated by placing controls in “Auto” mode at the operator interface in the control room of the new treatment building. Once in “Auto” mode, water should begin flowing from the equalization tank through the treatment system. The landfill leachate extraction system will be brought online first. The existing extraction wells will then be brought online one at a time, starting with EW-1 followed by EW-3 and then EW-2. At each step, proper operation of communication, instrumentation and interlocks systems will be verified prior to proceeding to the next extraction well.

Sampling of the treatment system will be conducted to demonstrate that the discharge meets the substantive requirements established pursuant to the Consent Order (see Appendix B). As specified in Paragraph 54 of the Consent Order, treated water discharged from the system will be containerized on-site in at least two frac tanks near the treatment building during this shakedown period. Treated water in the tanks will be sampled and analyzed for the parameters in the substantive requirements by methods described in the revised Quality Assurance Project Plan (QAPP) that will be submitted to USEPA after this plan, and may, with USEPA prior approval, be discharged to surface water in batches if the sampling data for a tank show that the substantive requirements have been met.

Alternatively, treated water may be transported for off-site disposal or recycled back into the treatment system until USEPA provides notice to Respondents of interim approval to discharge treated water directly to surface water. Additional process monitoring samples may also be collected during this shakedown period. Sampling locations, methods and frequencies for process monitoring samples are provided in the Performance Monitoring Plan (see Appendix J). Following this shakedown period, Respondents will present data to USEPA in the Construction Completion Report pursuant to Paragraph 63 of the Consent Order.

As discussed in Appendix F, additional hydrogeologic investigation activities are planned during installation of the five new extraction wells (EW-4 through EW-8). Thus, the new extraction wells will not be operational and connected to the treatment system until after initial start-up. Each new extraction will be started, one at a time on different days, and allowed to operate for 4 to 8 hours to collect additional information. During this period, proper operation of communication, instrumentation and interlocks systems will be verified. Additionally, the specific capacity of each new extraction well will be estimated. Prior to shutting down each well, a water sample will be collected for analysis of VOCs, SVOCs, and PCBs by methods described in the revised QAPP that will be submitted to USEPA after this plan.

Based on the analytical results and specific capacity estimates, a start-up sequence will be established for the five new extraction wells. This process will be designed to avoid any upset to the treatment system operations. After a new extraction well is placed into operation, a minimum of one set of analytical results from the treatment system will be obtained before the next extraction well is placed into operation. After all of the new extraction wells are placed into operation, pump set points will be adjusted incrementally and sequentially based on treatment system data, extraction well data (flow rates and groundwater quality), and groundwater monitoring data (water level elevations and groundwater quality), the latter collected under the Groundwater Monitoring Plan (see Attachment B of Appendix J).

4.6 OM&M

An OM&M Plan has been prepared for the treatment system and is provided in Appendix I. This plan includes the following information:

- Procedures for regular OM&M of the groundwater extraction, landfill leachate collection and treatment systems, including, but not limited to, inspection and maintenance checklists and schedules for inspection and maintenance activities;

- Plans for general maintenance of gravel drives, the fence surrounding the landfill, extraction wells and treatment building area, structures including the treatment building and any other

enclosures which house parts of the groundwater extraction and landfill leachate collection systems, and snow removal and grass cutting as necessary to access all components of the groundwater extraction and landfill leachate collection systems;

- A plan for providing security measures to be taken to keep unauthorized personnel from entering restricted work areas;

- A schedule for operation of the groundwater extraction, landfill leachate collection and treatment systems; and

- Plans and a schedule for monitoring of the treatment system in accordance with the revised QAPP, which will be submitted to USEPA after the DR/IP, as well as a schedule for submission of the results to USEPA.

Pursuant to Paragraph 63 of the Consent Order, within 30 days of the conclusion of the shakedown period discussed in the Start-Up Plan (see Appendix H), Respondents will submit to USEPA a Construction Completion Report. This report will include a final OM&M Plan for the system.

4.7 Performance Monitoring

A Performance Monitoring Plan (Appendix J) has been prepared to describe the following:

- Treatment system sampling and analysis, including tracking of contaminant mass removal; and

- Monitoring groundwater outside of the landfill, including residential wells without POU treatment systems, residential wells with POU systems, and the contaminant plume hydraulically downgradient of the landfill.

Additional information on sampling and associated procedures for the monitoring described in the Performance Monitoring Plan in Appendix J is included in the revised QAPP that will be submitted to USEPA after the DR/IP. The QAPP will also cover analytical parameters and methods along with quality assurance/quality control (QA/QC) requirements.

4.7.1 Treatment System Monitoring

The treatment system is designed to meet the substantive requirements established pursuant to the Consent Order (see Appendix B). Effluent monitoring will be conducted to confirm that the discharge from the treatment system to surface water (i.e., Valatie Kill) meets the substantive requirements.

Treatment system effluent samples will be collected from the treatment system discharge pump. The sampling frequency and analytical parameters specified in the substantive requirements are presented in Table 1 of the Performance Monitoring Plan in Appendix J. These include select field parameters (dissolved oxygen [DO] and pH), VOCs, select SVOCs, PCBs, select pesticides, select metals, and select water quality parameters. Additionally, the substantive requirements include quarterly whole effluent toxicity (WET) testing along with mercury and PCB minimization programs. Following the conclusion of the shakedown period and USEPA approval to discharge from the treatment system to surface water, the routine discharge to the Valatie Kill will be monitored as described in the Performance Monitoring Plan in Appendix J.

Treatment system influent samples will initially be collected for the same analytical parameter as the effluent but at a reduced sampling frequency (see Table 1 of the Performance Monitoring Plan in Appendix J). Additional process monitoring samples will be collected from the extraction wells, leachate collection tank, and specific locations between key process components within the treatment system. These samples will initially be analyzed for select field parameters (DO and pH), VOCs, and select SVOCs at the frequency given in Table 1 of the Performance Monitoring Plan in Appendix J. Additionally, extraction well and leachate collection tank samples will also be analyzed for PCBs. Water samples within the treatment system are anticipated to be collected from the sample taps at the locations described in the Performance Monitoring Plan in Appendix J.

Change outs of liquid-phase GAC will be scheduled based on sampling results in addition to evaluation of loading based on these data in conjunction with isotherm estimates in order to minimize the generation of hazardous waste while still meeting substantive requirements.

Extraction well samples will be collected from sample taps located in the vaults near each well. Similarly, samples of leachate will be collected from the vault near the leachate collection tank at the landfill. The locations, analytical parameters, and frequencies of the treatment system influent and process monitoring samples may be adjusted in the future based on operational experience.

As described above, the vapor-phase treatment will include three GAC units in series followed by two PPZ units. To monitor operating efficiency, air samples will be collected from between the middle and the lag vapor-phase GAC units and at the discharge of the lead vapor-phase PPZ. Air samples will be collected using either a tedlar bag or summa canister and analyzed for VOCs. As presented in Table 1 of the Performance Monitoring Plan in Appendix J, air samples will be collected on a monthly basis for the first year of operation. Thereafter, based on operational experience, the sampling schedule may be reduced. Change outs of vapor-phase GAC and PPZ will be scheduled based on sampling results in addition to evaluation of loading based on these data in conjunction with isotherm estimates in order to minimize the generation of hazardous waste while still meeting substantive requirements.

4.7.2 Residential Well Monitoring

The Residential Well Monitoring and Point of Use Treatment System Operation, Maintenance and Monitoring Plan are included as Attachment A of this Performance Monitoring Plan in Appendix J. In summary, a total of 21 residential wells without treatment systems and five residential wells with POU treatment systems are included in the monitoring program.

The residential wells without treatment systems included in the monitoring program consist of the 20 residential wells that are included in the current monitoring program approved by NYSDEC plus an additional residential well that was installed at a new residence in 2012. Eight residential wells without treatment systems are sampled semi-annually. At one of these residential well locations, a mobile home residence, has been gutted since 2006 and power is shut off so sampling will not occur until power is restored and the residence is re-occupied. One of these eight residential well locations also includes a new well that was installed in 2012 at a new residence. Based on historical data, six residential wells without treatment systems are sampled annually while the remaining seven residential wells without treatment systems are sampled biennially. All of these residential well samples are analyzed for VOCs.

All of the five residential wells with POU treatment systems will be sampled on a quarterly basis. One residential well with a POU treatment system is not currently operating; however, for sampling purposes, this well will be operated for a short time during each quarterly sampling event to collect samples. At each operating POU treatment system, samples are collected from the inlet (before particulate filter), between GAC units, and discharge (after UV unit). All samples will be analyzed for VOCs and the discharge samples will also be analyzed for total coliform.

4.7.3 Groundwater Monitoring

The Groundwater Monitoring Plan (GWMP) is provided in Attachment B of the Performance Monitoring Plan in Appendix J. In summary, the monitoring program includes groundwater elevation measurements along with groundwater quality sampling and analysis. The basis of the GWMP is the existing off-site groundwater monitoring program which was previously approved by NYSDEC; however, the GWMP also includes the five open deep bedrock boreholes (designated as EPA-1 through EPA-5) previously installed by USEPA in 2011 that may be converted to monitoring wells (see Appendix G).

Based on the currently available information, groundwater elevations will initially be measured on a semi-annual basis at 24 monitoring wells located outside the landfill perimeter fence and the five open deep bedrock boreholes installed by USEPA. Groundwater samples will be collected at the majority of the monitoring wells using PDBs placed at specified depths within the monitoring wells. At some

wells that are too small (i.e., one-inch-diameter) to use PDBs or for analyses other than VOCs, low-flow sampling procedures will be used for sample collection.

Consistent with the current program, eight monitoring wells will be sampled twice per year (spring and fall), 10 will be sampled annually in the fall, and six will be sampled biennially in the fall. All samples will be analyzed for VOCs. Select monitoring wells will also be analyzed for select phenolic compounds on a biannual basis. Field parameters (DO, pH, oxidation-reduction potential (ORP), specific conductance, and temperature) will be monitored when low-flow sampling procedures are used. The sampling technique at the five open deep bedrock boreholes will be determined based on the results of the additional investigation activities (see Appendix G).

5. Schedule

A preliminary schedule is provided in Appendix K. With the goal of eliminating the ongoing trucking operations by October 31, 2013, in parallel with USEPA approval of the DR/IP, Respondents intend to conduct procurement activities associated with the long-lead equipment (i.e., treatment system building structure, fixed-film bioreactor, and air stripper) and key contractor(s)/subcontractor(s) in parallel with USEPA's review of the DR/IP. These procurement activities will include bid preparation, bid solicitation, bid review, and selection. Once key contractor(s)/subcontractor(s) are selected, Respondents will submit information on these firms to USEPA for approval in accordance with the Consent Order. Insurance certificates will also be submitted to USEPA for approval.

Additionally, Respondents will submit revised supporting documents to USEPA for use during implementation of the DR/IP. These include the Health and Safety Plan (HASP), Transportation and Disposal (T&D) Plan, and QAPP. Respondents plan to submit the revised supporting documents to USEPA on or before April 17, 2013.

Respondents are proposing that USEPA review and approve the DR/IP in two phases, the first phase focusing on construction-related portions of the DR/IP and the second phase focusing on the remainder of the DR/IP and the revised supporting documents. For the purpose of this schedule, USEPA approval or conditional approval of the construction-related portions of the DR/IP is assumed to be April 15, 2013. All subsequent tasks are based on this assumed approval date. Respondents will begin construction within seven days of this approval, provided the necessary procurement activities have been completed and USEPA has also approved the key contractor(s)/subcontractor(s).

5.1 Treatment System Construction

As shown on the preliminary schedule in Appendix K, construction is expected to last approximately five months from the beginning of construction through the initiation of start-up. Construction activities will begin with installation of the treatment building foundation and conveyance piping. Then, the building structure will be erected and mechanical installation for the three existing extraction wells EW-1, EW-2, and EW-3 will be completed as much as possible without interrupting their operation.

However, a vault with piping and valves, located just southwest of the southern tip of the landfill as shown on Figure 2, will need to be installed to allow pump and truck operations to continue in parallel with the remaining construction activities. This installation will require a relatively brief shutdown (e.g., less than five days) of the three existing extraction wells. Leachate removal from the leachate collection tank will not be impacted by the installation of this vault and associated appurtenances.

Once the treatment building structure is in place, equipment delivery and installation will begin. Construction will be complete following installation of mechanical, electrical, and control systems in the treatment building and at the extraction wells.

Single-phase power is available from National Grid on Mead Road near the landfill. A new 480 volt transformer is required to supply a 400 ampere service to the treatment building. In order to power the well pumps and treatment equipment located in the treatment building, step-down transformers will be installed to provide 240 volt single-phase service. National Grid has two easements in place to install the three necessary utility poles and transformer for this project, and this will be performed by National Grid prior to or during construction of the treatment system.

5.2 Treatment System Start-Up

At the conclusion of construction, preliminary start-up activities will be conducted in accordance with the Start-Up Plan (Appendix H). The first step will be to prove the functionality of each component in the treatment system prior to the clean water start-up. Testing will be completed to verify that all instrumentation and associated I/Os at the extraction wells, leachate collection tank, and treatment system are functioning properly. Filtration media (e.g., pressure filters, vapor- and liquid-phase GAC, and vapor-phase PPZ) will also be checked to verify that the appropriate vessels and the units have been properly prepared to receive water or vapor. The mechanical commissioning portion of the preliminary start-up activities will serve to verify that all tanks, treatment units, pumps, piping, valves, and instrumentation are installed at the appropriate locations in the proposed treatment system. This process will also verify that all valves are in the proper operating position to allow water to flow through the system as intended.

Following successful completion of the preliminary start-up activities, a clean water system start-up will occur at the treatment system. The main objectives of the clean water system start-up are to verify that major equipment is operating in accordance with manufacturers' specifications and control systems are working properly.

Prior to filling any tanks with clean water, the treatment system piping downstream of discharge pumps will be temporarily rerouted to the influent tank using flexible hose to ensure clean water is not discharged from the treatment building. All tanks in the treatment building will be filled with clean water prior to performing the clean water start-up. Clean water trucked in from off-site will be used to fill the tanks so that water from on-site sources is not used at any time during the clean water start-up. It is not required that all tanks be filled at the same time so some of the water used to fill one tank may subsequently be used to fill another.

The clean water system start-up will consist of operating all equipment and systems in the treatment building. The clean water system start-up will be completed when proper operation of all pumps, control valves, instrumentation, and interlocks has been verified.

As much mechanical and electrical work as possible will be completed in order to minimize any other interruptions to the ongoing pump and truck operations. However, a shutdown of up to two weeks will be required to install and connect new pumps, piping, electrical service, and controls at the three existing extraction wells and the leachate collection tank. This transition work will be done after the clean water start-up is complete to ensure that the treatment system is ready to receive leachate and groundwater. Once the transition is complete, pump and truck operations using the existing frac tanks in the pole barn and leachate transfer station will be discontinued. Any further need for trucking will be performed from the treatment system area.

Initial treatment system start-up will occur using groundwater from existing extraction wells EW-1, EW-2, and EW-3 and leachate from the existing leachate storage tank at the landfill. The discharge line from the treatment system will be rerouted to either of two frac tanks located outside the treatment building but inside a fenced area. Based on the current rates of leachate and groundwater removal, at least two frac tanks will be used and are sufficient to store approximately six days of leachate and groundwater removal.

The landfill leachate extraction system will be brought online first. The existing extraction wells will then be brought online one at a time, starting with EW-1 followed by EW-3 and then EW-2. At each step, proper operation of communication, instrumentation and interlocks systems will be verified prior to proceeding to the next extraction well.

Sampling of the treatment system will be conducted to demonstrate that the discharge meets the substantive requirements established pursuant to the Consent Order (see Appendix B). As specified in Paragraph 54 of the Consent Order, treated water discharged from the system will be containerized on-site in at least two frac tanks near the treatment building during this shakedown period. Treated water in the tanks will be sampled and analyzed for the parameters in the substantive requirements by methods described in the revised QAPP that will be submitted to USEPA after this plan, and may, with USEPA prior approval, be discharged to surface water in batches if the sampling data for a tank show that the substantive requirements have been met. Alternatively, treated water may be transported for off-site disposal or recycled back into the treatment system until USEPA provides notice to Respondents of interim approval to discharge treated water directly to surface water. Additional process monitoring samples may also be collected during this shakedown period.

Following this shakedown period, Respondents will present data to USEPA in the Construction Completion Report pursuant to Paragraph 63 of the Consent Order. This report will include, but not

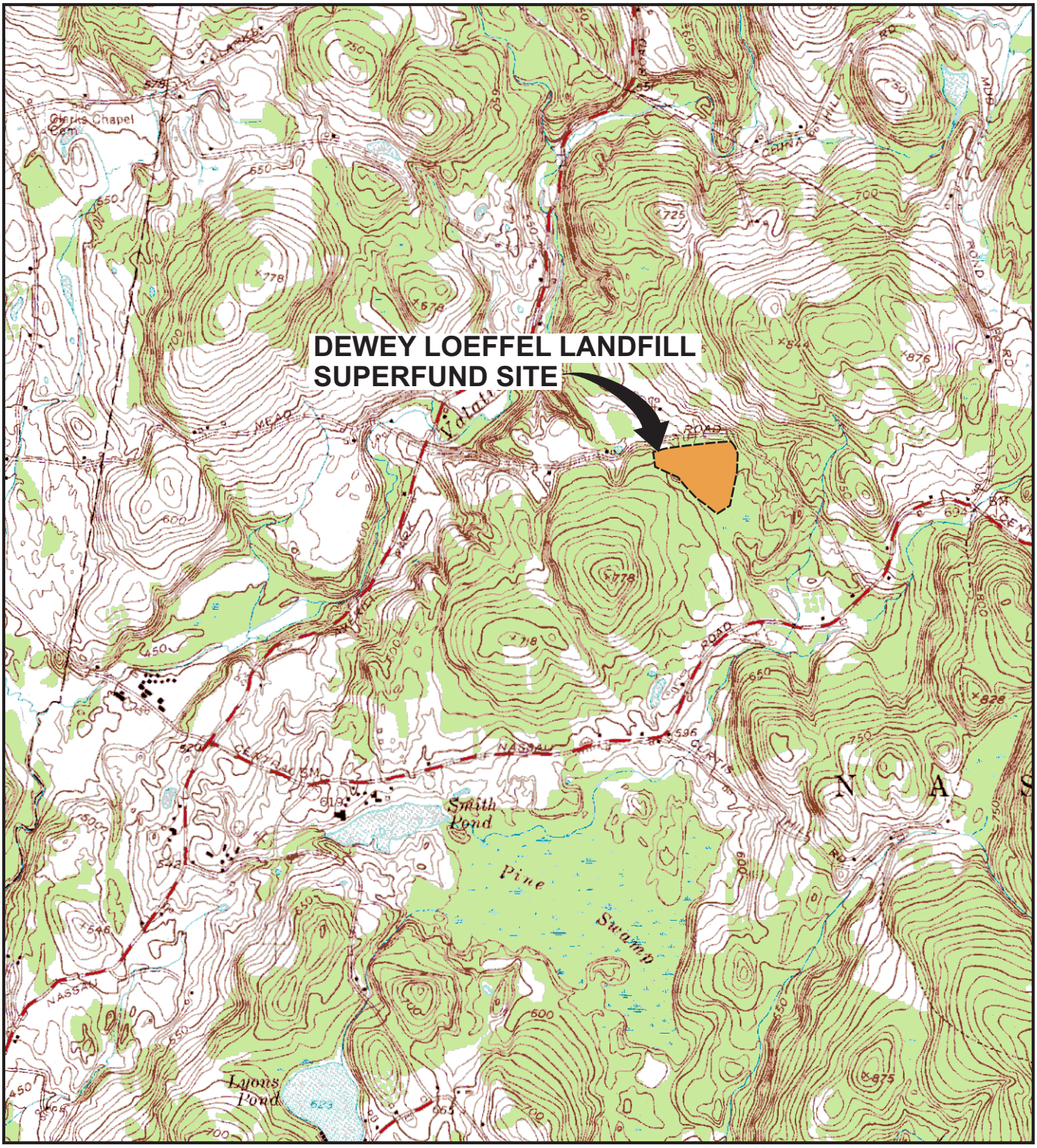
be limited to, post-construction (aka record or as-built) drawings for the treatment system, data collected during the shakedown period, and a final OM&M Plan for the system.

5.3 New Extraction Well Installation

Additional hydrogeologic investigation activities are planned during installation of the five new extraction wells (EW-4 through EW-8), as discussed in Appendix F of the DR/IP. Thus, the new extraction wells will not be operational and connected to the treatment system until after initial start-up.

ARCADIS

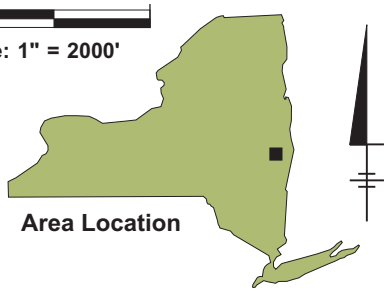
Figures



REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., NASSAU, NY, 1953, PHOTOREVISED 1978.

2000' 0 2000'

Approximate Scale: 1" = 2000'



DEWEY LOEFFEL LANDFILL SUPERFUND SITE
NASSAU, NEW YORK

SITE LOCATION MAP

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FIGURE
1

04/116/2012 SYRACUSE, NY-ENV/CAD-141, DJHOWES
B0031174/0000/00001/CDR/31174N01.CDR

EXISTING UNDERGROUND GROUNDWATER TRANSFER PIPELINE AND CONTROL LINES (TO BE TAKEN OUT OF SERVICE AFTER TREATMENT SYSTEM START-UP)

EXISTING DOUBLE-WALLED FRAC TANKS WITHIN POLE BARN

NEW UNDERGROUND ELECTRICAL AND INSTRUMENTATION LINES

EXISTING ELECTRICAL SERVICE COMPOUND (TO BE TAKEN OUT OF SERVICE)

NEW VALVE VAULT – TIE IN NEW 2"ø SDR 11 X 4"ø SDR 17 DUAL-CONTAINED HDPE FORCEMAINS INTO EXISTING 2" SDR 11 X 4" SDR 17 DUAL-CONTAINED FORCEMAIN

EXISTING SLURRY WALL

EXISTING LEACHATE UNDERGROUND STORAGE TANK

NEW 2"ø SDR 11 X 4"ø SDR 17 DUAL-CONTAINED FORCEMAIN AND LATERALS FOR NEW EXTRACTION WELLS EW-4 THROUGH EW-8

NEW 2"ø SDR 11 X 4"ø SDR 17 DUAL-CONTAINED HDPE FORCEMAINS

NEW ELECTRICAL SERVICE POLE, UTILITY TRANSFORMER, AND METER (TO BE INSTALLED BY NATIONAL GRID)

NEW TREATMENT BUILDING

NEW GRAVEL PAD AND DRIVE

NEW 3"ø SDR 11 HDPE DISCHARGE LINE

TO VALATIE KILL

ALLAN M. SMITH (REPUTED OWNER) L. 1267 P. 1025 TM 191-5-20

THE COUNTY OF RENSSELAER (REPUTED OWNER) L. 1372 P. 557 TM 191-5-16.1

TRI-VILLAGE BOWHUNTERS L. 1696 P. 85 TM 191-5-16.2

ISIDORO MARRA AND GAIL A. MARRA (REPUTED OWNERS) L. 1259 P. 753 TM 191-5-21

MEAD ROAD

WOODED AREA

BRUSH

TRAIL

100' 0 100' 200'
1"=100'

LEGEND

- PROPOSED UNDERGROUND PIPE
- PROPOSED UNDERGROUND ELECTRIC SERVICE
- PROPOSED CHAIN LINK FENCE
- PROPERTY LINES
- EXISTING ROADWAY
- EXISTING EXTRACTION WELL
- PROPOSED EXTRACTION WELL
- EXISTING MONITORING WELL

DEWEY LOEFFEL LANDFILL SUPERFUND SITE
NASSAU, NEW YORK

SITE PLAN

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FIGURE 2

CITY:SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.STEINBERGER LD:G.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYR:ON=*;OFF=*REF*
G:\GE\ENVCAD\SYRACUSE\ACTIVE\B0031174\0003000002\DWG\REPORT\31174G02.dwg LAYOUT: 2 SAVED: 2/6/2013 5:52 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 2/6/2013 5:52 PM BY: DECLERCQ, BRIAN