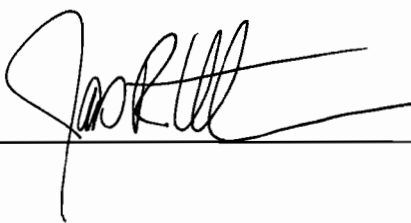


REPORT

National Heatset Printing Company
Farmingdale, New York
NYSDEC Site #1-52-140

Permanganate Injection System
Remedial Action Report

*New York State
Department of Environmental Conservation
Albany, New York*



James R. Heckathorne, P.E.
Vice President

July 2007

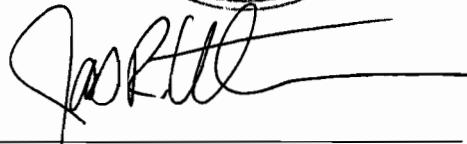


O'BRIEN & GERE
ENGINEERS, INC.

Certification

The Remedial Action was implemented and construction activities were completed in general compliance with the Remedial Design documents approved by New York State Department of Environmental Conservation, as amended as documented herein.





James R. Heckathorne, P.E.
Vice President

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1. Introduction

On behalf of the New York State Department of Environmental Conservation (NYSDEC), O'Brien & Gere provided construction inspection and contract administration services for the Permanganate Injection System project (Project) to remediate the impacted ground water associated with the National Heatset Printing Company site (Site) located in Farmingdale, New York (**Figure 1-1**). Permanganate injection was chosen as the technology for Remedial Design (RD) and Remedial Action (RA) for the Site. The Site is identified as Site #1-52-140 on the New York State Registry of Inactive Hazardous Waste Disposal Sites.

In 2004, Shaw Environmental & Infrastructure Engineering of New York, P.C. (Shaw) completed the RD and construction documents for the Project. In late 2004, O'Brien & Gere assumed responsibility for the RA implementation, which included construction inspection and contract administration. The following RA Report describes field and construction activities completed at the Site and summarizes the analytical results. This RA Report was completed in accordance with O'Brien & Gere's Project Management Work Plan, dated December 3, 2004, for Work Assignment (WA) #D004090-17, and NYSDEC Division of Environmental Remediation's *Draft DER-10 Technical Guidance for Site Investigation and Remediation*, dated December 25, 2002.

1.1. Site Location and Background

The Site, located at 1 Adams Boulevard in the Hamlet of East Farmingdale, Town of Babylon, Suffolk County, contains one multi-tenant industrial building and is approximately 4.5 acres in size. The Site is located in an industrial area and is bordered by railroad tracks to the north, Adams Boulevard to the southeast, and other industrial properties to the east, west, and south.

A former tenant, National Heatset Printing Company (National Heatset) occupied a portion of the on-site building from July 1983 to April 1989. National Heatset's operations consisted of lithographic tri-color printing of newspaper and periodical advertisements and the manufacture of lithographic printing plates. National Heatset had been using organic solvents at the Site since 1983. Inspections by the Suffolk County Department of Health Services (SCDHS) in 1983 and 1986 revealed improper storage and discharge of waste materials.

National Heatset filed for bankruptcy in 1987. The SCDHS discovered that after filing for bankruptcy, National Heatset disposed of its chemical inventory by dumping the materials onto the ground and into a leaching pool located behind the building on the northeast side of the property. Some of the chemicals that were disposed at the Site included volatile organic compounds (VOCs). These chemicals migrated into the ground water at the Site and into surrounding areas, including the residential area located south-southeast of the Site.

1.2. Previous Investigations and Activities

Investigations conducted by the SCDHS and the property owner's consultant identified the presence of VOCs in the on-site subsurface soil and on-site and downgradient ground water at levels above the soil and ground water standards. The soil contained tetrachloroethylene (PCE) at 14 parts per million (ppm), trichloroethylene (TCE) at 62 ppm, 1,1,1-trichloroethane (1,1,1-TCA) at 1.6 ppm, and 1,2-dichloroethylene (1,2-DCE) at 4.1 ppm. The ground water contained TCE at 100 parts per billion (ppb), PCE at 2,700 ppb, 1,1,1-TCA at 26 ppb, and 1,2-DCE at 180 ppb. VOCs were present in nine private wells downgradient of the Site. The Site was listed in the Registry as a Class 2 Site in 1993.



A Class 2 site is a site that has been determined to be a significant threat to human health and/or the environment.

A Remedial Investigation (RI) was performed from August 1997 to January 1999. Potential remedial alternatives for the Site were identified, screened and evaluated in a Feasibility Study (FS). Based on the RI and FS, NYSDEC issued a Record of Decision (ROD) document dated June 17, 1999, which identified the selected remedy for the site. As documented in the ROD, the initial remedy selected was “*In Situ* Density Driven Convection (DDC) Type In-well Stripping” at the source area and the southern area of the Site. This remedy involves the removal of the VOCs from the contaminated ground water through air stripping in a ground water well, and subsequent treatment of the VOC-laden air mixture through granulated activated carbon prior to releasing the treated air to the atmosphere or back into the well. However, the ROD allowed for an alternate technology at the source area based on pilot test data.

During the RD, the technology was further refined and additional investigations performed concluded that *in situ* chemical oxidation through injection of sodium and potassium permanganate would be the remedy of choice for the source area.

The RD work plan was approved in October 2000 and a chemical oxidation pilot test was conducted at the source area in 2001 along with a pump test at the downgradient edge of the site. Following the pilot test, Shaw developed the design and construction documents for the permanganate injection system. The RD for permanganate injection was completed in August 2004 and bids for the permanganate injection system were received in December 2004. EnviroTrac Limited (EnviroTrac) from Ronkonkoma, New York was selected to perform the RA.

Sampling during the RD in 2001 also revealed the presence of contaminated soil beneath the on-site building slab. As this VOC contamination was affecting the indoor air, the NYSDEC installed a soil vapor extraction (SVE) system to remediate the contaminated soil beneath the building slab. The SVE system has been running since September 2002.

A timeline of the Site’s history and previous remedial activities is summarized in **Table 1-1**.

1.3. Project Execution and Construction Budget

O’Brien & Gere was assigned to oversee the implementation of the permanganate injection system as specified by the Contract Documents, Contract Number D005272 (Contract), August 25, 2004. The main phases of the Project included well construction, baseline sampling, permanganate injection, and post-injection monitoring and sampling.

EnviroTrac’s bid to conduct the work presented in the Contract Documents for the permanganate project was \$1,094,310. Refer to **Appendix A**. During the course of the Project, the bid amount was modified with the removal of the cost for operation of the portable injection pumps (unit price item #3) since it was not required. Refer to **Appendix B**. As a result, the revised Project budget was \$1,054,310. A project budget breakdown is included in **Appendix C**.

2. Pre-Construction Activities

2.1. Pre-Construction Meeting and Documentation

A pre-construction meeting between NYSDEC, O'Brien & Gere, and EnviroTrac was held on May 20, 2005 at NYSDEC's office in Albany, New York. Meeting topics and discussions included the general overview of the Project, roles and responsibilities of O'Brien & Gere and EnviroTrac, project schedules, required document submittals, and utilization of Minority and Women Owned Businesses (MWBEs). O'Brien & Gere summarized and provided the meeting minutes to NYSDEC on May 27, 2007. A copy of the submitted meeting minutes is included in **Appendix D**.

As a part of the pre-construction activities, O'Brien & Gere reviewed and commented on the following plans provided by EnviroTrac for the Project:

- Work Plan
- Sampling Plan
- Quality Assurance and Quality Control Plan
- Health and Safety Plan

O'Brien & Gere also reviewed and commented on the Spill Prevention, Control and Containment, Erosion and Sediment Control, and Dust Control Plans, which were included as portions of the plans presented above. O'Brien & Gere provided NYSDEC with two letters summarizing the review of EnviroTrac's plans on May 16 and June 7, 2005. A copy of the review letters and EnviroTrac's work plans are included in **Appendix E**.

2.2. Subcontractors

For the Project site activities, EnviroTrac retained the following subcontractors:

- Associated Environmental Services, LLC – drilling services
- Carus Chemical Company (WBE) – permanganate injection system
- Chemtech (MBE) – analytical services
- Holbrook Plastic Pipe Supply, Inc. – material supplier
- YEC Inc. (MBE) – surveyor

O'Brien & Gere retained Mitkem Corporation (MBE) for laboratory analyses of split samples collected during EnviroTrac's ground water sampling events.

3. Field and Construction Activities

Marc Dent, P.E. of O'Brien & Gere was the project manager for this project and his responsibilities included monitoring the budget and schedule and coordinating with EnviroTrac and NYSDEC representatives. Ed Rahn and Wayne Hoagland, P.E. of O'Brien & Gere provided construction oversight and contract administration services, respectively.

EnviroTrac performed the following tasks:

- Injection well installation
- Baseline sampling of injection and monitoring wells
- Site preparation for permanganate injection equipment
- Sodium and potassium permanganate injection
- Field parameter sampling during injection
- Post-injection sampling

The proposed monitoring schedule for the well sampling prior to, during, and after the permanganate injection was provided in Table 02590-2 in the Contract Documents. Refer to **Appendix F**. However, during construction NYSDEC approved changes to the table based on changing field conditions. The changes included the following:

- Under the column labeled "Baseline" the "NM" designation was changed to "Field parameters"
- Under the column "Weekly during weeks 1-4" and "Bi-weekly weeks 6 and 8" the "Field Parameters" designation was changed to "NM" for the injection wells only

These changes are documented in meeting minutes from Progress Meetings #1 and #2 and an email dated July 28, 2005 that are included in **Appendix F**. Refer to **Table 3-3** for a summary of the field parameters collected.

3.1. Field Supervision

A full-time O'Brien & Gere representative, Mr. Rahn, remained on the Site for the duration of the fieldwork. Mr. Rahn's responsibilities included observation of the construction activities to verify compliance with the approved plans and specifications. In addition, Mr. Rahn prepared daily field reports to document the field personnel present, equipment use, and field activities. Copies of the daily reports are included as **Appendix G**.

3.2. Well Installation

Well installation activities began on July 13, 2005. EnviroTrac's driller, Associated Environmental Services, provided the drilling services. Drilling was done using a hollow stem auger drill rig. A total of 24 wells were installed at locations presented in **Figures 3-1** and **3-2**. The existing monitoring wells, MW-A, MW-B, MW-6, MW-7, MW-C, MW-E, MW-F, MW-G, MW-H, MW-2A, MW-3A, MW-9, and MW-10 are also identified in **Figure 3-1**.

The scope of the Project was to advance the borings to the following approximate depths at each well location: 80 feet (ft) for deep wells, 55 ft for intermediate wells, and 35 ft for shallow wells. For each of the 4 existing monitoring well locations MW-A, MW-B, MW-6, and MW-7, two additional wells were installed in the vicinity of each well at depths other than the existing well's depth.

Each well was constructed of 10-ft sections of 2-inch Schedule 40 PVC pipe and has a 10-ft screen interval near the bottom of the well. The backfill material used around the screen interval was Filpro® well gravel sand from US Silica Company. Above the screen interval, a 12-inch seal was installed using ¼-inch coated bentonite tablets from Cetco® Drilling Products. Above the bentonite seal, drill cuttings were used, followed by 6 inches of Pure Gold® medium bentonite chips from Cetco® Drilling Products. Only soil cuttings with non-detect photo ionization detector (PID) screening values were used as backfill in the wells. Refer to **Figure 3-3** for the well details and **Appendix H** for the backfill materials' product data sheets. The estimated well depths and screen intervals are summarized in **Table 3-1**. Copies of the boring logs are presented in **Appendix I**.

At each well, 5-ft long cores were retrieved from the borings and screened via a headspace method using a PID. Refer to daily logs in **Appendix G** and boring logs in **Appendix I**. The PID readings were generally non-detects with the exception of the borings at IW-B, IW-5, MW-6, and MW-7. The soil cores and cutting materials with non-detect VOC readings were reused as part of the backfill material for the wells, while the cores and cutting materials with detected VOC readings were contained in 55-gal drums. The drums were transported by Fenley & Nicol Environmental, Inc. in Deer Park, New York to Triumvirate Environmental in Astoria, New York for disposal. Refer to the soil waste disposal forms in **Appendix J**.

3.3. Baseline Ground Water Sampling

After installation, each well was developed by pumping water from the well into 55-gal drums. Refer to **Table 3-2**. The water from well development was later pumped into the batch mix tank and mixed with the permanganate solution following approval from NYSDEC. After the wells were developed, the riser at each installed well was cut to approximately 2 ft above ground surface.

EnviroTrac conducted the well sampling according to the sampling plan in **Appendix E**. On August 2, 2005, baseline sampling began by purging the water from the well and slowly pumping it through a water quality monitor to measure pH, temperature, turbidity, specific conductance (SC), dissolved oxygen (DO), and oxidation reduction potential (ORP). Refer to well sampling logs in **Appendix K**. The purged water was contained in 55-gal drums and was later pumped into the batch mix tank and mixed with the permanganate solution following approval from NYSDEC. A summary of the pre-injection baseline sampling and field parameters is provided in **Table 3-3**.

After the field parameter values stabilized, EnviroTrac collected ground water samples from existing downgradient monitoring wells MW-C, MW-E, MW-F, MW-G, MW-H, MW-2A, MW-3A, MW-9, and MW-10, and injection wells MW-A, IW-A-S, IW-A-I, MW-B, IW-B-S, IW-B-I, MW-6, IW-6-I, IW-6-D, MW-7, IW-7-S, and IW-7-I. The ground water samples along with matrix spike/matrix spike duplicate (MS/MSD) samples, equipment blank samples, and trip blanks were sent via overnight delivery to Chemtech in Mountainside, New Jersey for VOC analysis via EPA Method 8260. O'Brien & Gere collected 5 split samples from the samples collected by EnviroTrac and the split samples were sent to Mitkem Corporation via overnight delivery for VOC analysis using EPA Method 8260. Sampling and analysis were conducted in accordance with the plans submitted by EnviroTrac. The VOC analytical results from the baseline sampling are discussed in Section 4.

3.4. Site Preparation

The field trailer was delivered to the Site when well drilling activities began on July 13, 2005. EnviroTrac installed 8-ft high temporary fence on the east end of the work area and on the northern

edge of the Site where the railway track enters the property to provide site security. Refer to **Figure 3-2**.

Following the well installation, development, and baseline sampling, EnviroTrac prepared the area where the proposed permanganate injection equipment and piping were to be located. The area for permanganate injection equipment was located on the northwest side of the building and was bordered by the existing chain link fence that encloses the property to provide a secure work area. Refer to **Figures 3-1** and **3-2**.

The area along the chain link fence was cleared and prepared for placement of the permanganate injection equipment and piping. The preparation included constructing berms on the ground where the equipment and piping were to be placed and laying a heavy-duty plastic liner within and on the berms. See the berm detail in **Figure 3-2**. In the bermed areas where the permanganate mixing equipment and pumping equipment were located, single sheets of ½-inch thick plywood were laid on the plastic liners. Refer to Photo #1 in **Appendix L**.

When the berm construction was completed, EnviroTrac began assembling and installing the permanganate injection piping to deliver the permanganate solution from the permanganate batch mix tank to the injection wells.

EnviroTrac contacted Long Island Power Authority (LIPA) and a separate metered power supply was provided for the injection equipment and the field trailer. EnviroTrac installed underground electrical conduits to the system equipment area. Refer to Photo #1 in **Appendix L**. EnviroTrac also identified and marked out other known underground utilities as a precaution prior to commencing any excavation and drilling activities.

A potable water source was required for mixing the permanganate products. A meter pit that provided public water to the on-site building was located on the southeast side of the property near the cul-de-sac. EnviroTrac contacted the municipal water authority and the property owner and obtained permission to use the water. A 3-inch flexible hose was connected to the public water line in the meter pit and run aboveground to the permanganate equipment area. Refer to **Figures 3-1** and **3-2**. The water usage was metered at the permanganate equipment area and EnviroTrac reimbursed the property owner for the water used.

3.5. Permanganate Injection System

The permanganate injection equipment from Carus Chemical Company began arriving on September 1, 2005. The injection system consists of a KMnO_4 feeder mix unit, a 17,000-gal permanganate batch mix tank, 3 injection pumps, and a series of pipes with valves and indicators to deliver the mixed permanganate solution to the injection wells. Refer to **Figure 3-4**.

Instead of a 50-gal mix tank with a flash mixer and 2 parallel slurry feed pumps as originally specified in the design, Carus provided a feeder mix unit for the KMnO_4 injection. The feeder mix unit consisted of a screw feeder, hopper, eductor, and a booster pump. The booster pump delivered the water to the eductor, and provided sufficient turbulence for mixing in the eductor and pressure to transfer the slurry from the eductor to the batch mix tank. In addition, instead of 2 injection pumps in parallel as originally specified in the design, 3 injection pumps were used in the Project.

Liquid sodium permanganate (NaMnO_4) was delivered to the Site via tanker trucks. Refer to Photo #4 in **Appendix L**. Approximately 9,878 gals of bulk 40% NaMnO_4 was delivered to the Site

between September 21 and 29, 2005. The bulk NaMnO_4 liquid was unloaded into the batch mix tank from the tanker trucks and mixed with approximately 9,878 gals of water to make up 19,756 gals of NaMnO_4 solution at a concentration of approximately 23% by weight. Refer to **Tables 3-4** and **3-6**.

The bulk KMnO_4 product was delivered to the Site in totes. Each tote was set on the feeder mix unit to dispense the KMnO_4 by gravity into a screw feeder, which loosened up the bulk crystalline solids. The KMnO_4 was then transferred to the hopper and then to an in-line eductor where it was mixed with water to make up a KMnO_4 slurry. The slurry was further diluted with water en-route to and in the batch mix tank to make up a KMnO_4 solution concentration of approximately 2%, as specified by the design. More than 26,400 pounds (lbs) of bulk KMnO_4 were mixed with more than 161,000 gals of water during the Project. Refer to **Tables 3-5** and **3-6**.

From September 26 through October 4, 2005, NaMnO_4 solution was injected into the wells. The equipment, header pipe, and associated piping were flushed with water following the completion of the NaMnO_4 injection. The KMnO_4 injection began on October 6, 2005 and was completed on November 22, 2005.

Injection commenced by pumping the permanganate solution from the batch mix tank at a rate of approximately 10 gals per minute (gpm), as specified by the design. The solution was pumped through the header pipe and distributed to each of ten manifold legs that lead to each well location. Refer to **Figure 3-4** and permanganate injection system photos in **Appendix L**.

On October 31, 2005, during the KMnO_4 injection, KMnO_4 slurry overflowed into the containment area. Refer to the field daily log in **Appendix G**. The booster pump on the feeder mix unit was not turned on, which caused water to rise into the hopper and screw feeder of the unit. The KMnO_4 slurry flowed out of the overflow port into the containment area. EnviroTrac promptly contained the overflow, neutralized the KMnO_4 with water, vinegar, and hydrogen peroxide, and cleaned up the containment area. Approximately 42 lbs of bulk KMnO_4 was cleaned up.

As the KMnO_4 injection phase neared completion on November 22, 2005, EnviroTrac began diluting the KMnO_4 solution remaining in the mix tank and injecting the diluted solution into the wells. When all the KMnO_4 solution was pumped, the tank and piping were flushed with water. The water from the mix tank cleaning and pipe flushing was also injected into the wells. On December 2, 2005, the permanganate injection equipment and associated piping were disconnected and demobilized, and the containment area was cleaned up and removed from the Site.

3.6. Post-Injection Monitoring and Sampling

NaMnO_4 and KMnO_4 are stable, non-selective oxidizing agents, which oxidize organic compounds including chlorinated solvents like PCE and TCE. Typically, the products of oxidation are carbon dioxide (CO_2), manganese dioxide (MnO_2), ions or salts of chloride (Cl^-), sodium (Na^+) and potassium (K^+). Since the rate of oxidation depends on the soil and ground water conditions of the Site, the extent of oxidation will vary from well to well.

Aqueous NaMnO_4 or KMnO_4 appears as a purple solution prior to reaction. As the permanganate oxidizes the organic compounds in the soil and ground water, the permanganate is reduced to MnO_2 under typical pH conditions of between 3.5 and 12. MnO_2 in water appears as a brown solution.

Post-injection well monitoring and sampling were conducted in accordance with the proposed monitoring schedule in **Appendix F**. A total of 4 quarterly monitoring and sampling events were



conducted after the majority of the purple color disappeared in the wells. Similar to the baseline sampling, the water from the well purging was contained in 55-gal drums. However, since the permanganate injection equipment was no longer on site, the drums of well purging water had to be transported to an approved facility for disposal. The purge water (fourteen 55-gal drums) from the 1st and 2nd quarterly sampling events was transported to EQ Detroit, Inc. in Detroit, Michigan by American Hazardous Materials Management, Inc. in Middle Island, New York on September 6, 2006. EnviroTrac did not provide the signed well purging water disposal forms in a timely manner for inclusion in this report. Refer to **Appendix J** for the preliminary disposal forms. The purge water from the 3rd and 4th quarterly sampling events is scheduled for off-site disposal in late July 2007.

During each sampling event, the color of the ground water was observed for the presence of unreacted permanganate. Since permanganate is heavier than water and tends to settle near the bottom of the well, ground water from the top and bottom of the well were observed. These observations are also summarized in **Table 3-3**. Samples were collected when the ground water did not appear purple. The post-injection, quarterly ground water sampling events took place on the following dates:

- 1st quarter: April 18 to 20, 2006;
- 2nd quarter: July 18 to 21, 2006;
- 3rd quarter: October 9 to 11, 2006; and
- 4th quarter: January 9 to 11, 2007.

Similar to the baseline sampling, EnviroTrac collected the ground water samples, which were sent to Chemtech for VOC analysis via EPA Method 8260. O'Brien & Gere also collected split samples, which were sent to Mitkem for VOC analysis via EPA Method 8260. Sampling and analysis were conducted in accordance to the plans submitted by EnviroTrac. The VOC analytical results from the post-injection sampling events are discussed in Section 4.

4. Analytical Results and Conclusions

The ground water samples from the baseline and post-injection sampling events were analyzed for VOCs using EPA Method 8260. The analytical data were not validated for this project. Hardcopies of the analytical data packages from Chemtech and Mitkem are separately bound and the electronic copies are included in the CD in **Appendix M**.

The VOCs that were detected in the ground water samples are summarized in **Table 4-1**. As shown, the ground water analytical results were compared to the applicable allowable concentrations provided in NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*, June 1998, and its addendum, April, 2000. VOC concentration trends are also presented.

4.1. Analytical Results

When reviewing the analytical results, it should be noted that although the monitoring wells outside the permanganate injection treatment area (MW-H, MW-2A, MW-3A, MW-9, and MW-10) were sampled, the permanganate injection system was designed to remediate the source area behind and under the on-site building (treatment area). The discussions below include results for the monitoring wells inside and outside the treatment area.

As shown in **Table 4-1**, the most frequently detected VOCs were PCE, TCE, 2-butanone, and cis-1,2-dichloroethene (cis-1,2-DCE). These VOCs had concentrations ranging from non-detect to the 5400 micrograms per liter ($\mu\text{g/L}$) of PCE at MW-2A, 2700 $\mu\text{g/L}$ of TCE at MW-2A, 2900 $\mu\text{g/L}$ of 2-butanone at IW-7-S, and 3300 $\mu\text{g/L}$ of cis-1,2-dichloroethene at MW-2A. These concentrations were from the samples that were diluted when the compound in the initial sample exceeded the instrument calibration range.

The two main VOCs of concern, PCE and TCE, were detected in all sampled wells except for IW-A-S, IW-A-I, IW-B-I, IW-7-S, and IW-7-I. 2-Butanone was detected in all sampled wells except for MW-C, MW-H, MW-2A, MW-3A, and MW-9, and cis-1,2-dichloroethene was detected in all sampled wells except for IW-A-S, IW-A-I, IW-B-S, IW-B-I, IW-7-S, IW-7-I, and MW-H.

As shown on **Table 4-1**, the VOC concentration trends are presented as increase, decrease or inconclusive. We identified a trend as inconclusive when the baseline concentration and the quarterly concentrations were generally the same (within an order of magnitude) with only a slight variance between sampling events. The analytical data and concentration trends for TCE and PCE are also shown in **Figure 4-1**.

In general, most of the parameters that were present in the baseline sampling event decreased over the four quarterly sampling events. The only major increase was for PCE at MW-2A. However, after completion of the permanganate injection project and the one-year of monitoring, six wells still have VOC concentrations greater than the TOGS values. Of the six wells listed in the table below, three monitoring wells (MW-E, MW-F, and MW-G) are located under the building. The remaining three monitoring wells (MW-2A, MW-3A, and MW-9) are located outside the treatment area. The following table is a summary of the final round of analytical data collected from January 9 to 11, 2007.



Well	VOCs (µg/L)			
	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE
TOGS Value	5	5	5	5
MW-E	9.6	--	--	--
MW-F	7.8	--	10	--
MW-G	12	--	--	--
MW-2A	5400	2700	3300	58
MW-3A	18	--	--	--
MW-9	15	--	--	--

4.2. Conclusions

As previously mentioned, the permanganate injection system was designed to remediate the source area behind and under the building (treatment area). Therefore, the detected concentrations from the monitoring wells outside the treatment area (MW-H, MW-2A, MW-3A, MW-9, and MW-10) are not representative of the effectiveness of the permanganate injection.

The injection of permanganate in the source area significantly reduced the VOC concentrations in the ground water at the site as shown in Table 4-1 and Figure 4-1. Specifically, significant reductions were observed in the treatment area behind the on-site building. However, six wells sampled in January 2007 still exhibited VOC concentrations greater than the TOGS values. Three of the wells were located inside and three outside of the treatment area. Five of the six wells showed less than 18 µg/L total VOCs while one well, MW-2A, which is located outside the treatment area, exhibited significant concentrations of PCE, TCE, cis-1,2-DCE and trans-1,2-DCE.

In addition, the remedy selected for the southern portion of the site (near MW-2A, 3A, and 9) is *in situ* DDC type in-well stripping. The pilot program that includes one DDC well located between MW-3 and 9, has been completed and the full-scale installation of three more DDC wells in the area around MW-2A is scheduled for mid 2007. Following installation and start-up of the four full-scale on-site DDC wells, one year of ground water monitoring will be conducted. The results of the ground water monitoring will determine if additional remedial activities are required at the Site.

In the event that additional remedial activities are required in the source area, it is recommended that the existing injection wells be left in-place at this time for future sampling. Based on the results of the ground water sampling of the full-scale DDC wells, additional sampling of the wells in the source area may be conducted, as requested by NYSDEC.

TABLE 1-1

**National Heatset Printing Company
Farmingdale, New York
Site #1-52-140**

Timeline of Site History and Remedial Activities Prior to Permanganate Injection System Project

Timeframe	Activity
July 1983 - April 1989	----- National Heatset Printing Company (National Heatset) operates in building located on the Site.
1983	----- Suffolk County Department of Health Services (SCDHS) inspection found discharge of photo plate making waste to the on-site sanitary system.
March 1986	----- SCDHS inspection found strong evidence of staining inks and oils dumping on the ground and improper storage of waste drums.
1987	----- National Heatset filed for bankruptcy. SCDHS discovered that National Heatset disposed of its chemical inventory by dumping the materials onto the soils and into the leaching pool located in the northeast side of the property.
October 1987	----- Elevated levels of tetrachloroethylene (PCE) were detected in samples collected by SCDHS from nearby private wells on Miller Avenue.
February 1988	----- SCDHS sampling of the leaching pool revealed elevated levels of volatile organic compounds (VOCs). The leaching pool was pumped, washed, dredged, backfilled with clean sand.
November 1988	----- Soil sampling taken at ~15 ft below ground surface (bgs) indicated that the remaining leaching pool sediment still contained elevated levels of VOCs.
1989 - 1990	----- SCDHS conducted off-site ground water sampling investigation (Miller Avenue Study), downgradient of the Site. A total of 30 deep vertical profile wells were installed.
May 1989	----- Property owner's consultant conducted a site investigation. The consultant installed 4 shallow wells (1 upgradient and 3 downgradient) and performed 2 soil borings in suspected source area.
1990	----- Adams Boulevard Corporation, Inc. installed a treatment system in the area of the contaminated leaching pool to remove VOCs from the soils located above the water table.
Mid 1991 - September 1998	----- Adams Boulevard Corporation, Inc. indicated that the treatment system was operated continuously except for the March through May 1994 period. NYSDEC observed that the treatment system was out-of-service in September 1998. No operational data was ever submitted to NYSDEC to confirm the effectiveness of the system.

TABLE 1-1

**National Heatset Printing Company
Farmingdale, New York
Site #1-52-140**

Timeline of Site History and Remedial Activities Prior to Permanganate Injection System Project

Timeframe	Activity
April 1993	----- The Site was listed as a Class 2 site in the New York State Registry of Inactive Hazardous Waste Disposal sites.
May 1993	----- Adams Boulevard Corporation, Inc. collected additional ground water samples, which revealed elevated levels of PCE and TCE in the downgradient wells.
July 1995	----- Adams Boulevard Corporation, Inc. conducted additional soil borings in the source contamination area, which revealed that the area of VOC contamination was larger than previously thought, possibly extending onto the adjoining property to the north.
August 1997 - January 1999	----- NYSDEC conducted a Remedial Investigation/Feasibility Study (RI/FS) at the Site.
June 17, 1999	----- NYSDEC issued Record of Decision (ROD). The remedy selected for the Site was In-Situ Density Driven Convection Type In-Well Stripping.
October 2000 - August 2004	----- Remedial Design (RD) work plan was approved. Additional investigations during the RD concluded that chemical oxidation using permanganate injection would be the remedy. Sampling during the RD also revealed the presence of contaminated soil beneath the on-site building slab.
2001	----- A chemical oxidation pilot test was conducted at the source area.
September 2002	----- NYSDEC installed a soil vapor extraction (SVE) system to remediate the contaminated soil beneath the building slab.
December 2004	----- Bids were received for implementation and construction of the Permanganate Injection System Project. EnviroTrac Limited was selected.
May 2005	----- Conducted Project pre-construction meeting.
July 2005 - December 2006	----- On-site activities for the Permanganate Injection System Project were conducted.



O'BRIEN & GERE

TABLE 3-1

**National Heatset Printing Company
Farmingdale, New York
Site #1-52-140**

Summary of Well Depths and Screen Intervals

Well ID	Status	Approximate Well Depth (ft below grade)	Screen Interval (ft below grade)
IW-A-S	New	35	25 - 35
IW-A-I	New	55	45 - 55
MW-A	Existing	83	73-83 ⁽¹⁾
IW-B-S	New	35	25 - 35
IW-B-I	New	55	45 - 55
MW-B	Existing	81	71-81 ⁽¹⁾
IW-1-I	New	55	45 - 55
IW-1-D	New	80	70 - 80
IW-2-S	New	35	25 - 35
IW-2-I	New	55	45 - 55
IW-2-D	New	80	70 - 80
IW-3-S	New	35	25 - 35
IW-3-I	New	55	45 - 55
IW-3-D	New	80	70 - 80
IW-4-S	New	35	25 - 35
IW-4-I	New	55	45 - 55
IW-4-D	New	80	70 - 80
IW-5-S	New	35	25 - 35
IW-5-I	New	55	45 - 55
IW-5-D	New	80	70 - 80
MW-6	Existing	28	13 - 28
IW-6-I	New	55	45 - 55
IW-6-D	New	80	70 - 80
IW-7-S	New	35	25 - 35
IW-7-I	New	55	45 - 55
MW-7	Existing	80	70 - 80
IW-8-I	New	55	45 - 55
IW-8-D	New	80	70 - 80
MW-C	Existing	82	51 - 81
MW-E	Existing	80	50 - 80 ⁽¹⁾
MW-F	Existing	29	19 - 29 ⁽¹⁾
MW-G	Existing	80	50 - 80
MW-H	Existing	83	53 - 83 ⁽¹⁾
MW-2A	Existing	25	15 - 25 ⁽¹⁾
MW-3A	Existing	27	17 - 27 ⁽¹⁾
MW-9	Existing	82	67 - 82
MW-10	Existing	83	67 - 82

Notes

IW = Injection Well

MW = Monitoring Well

S = Shallow

I = Intermediate

D = Deep

(1) Assumed screen interval.

**O'BRIEN & GERE**

TABLE 3-2

**National Heatset Printing Company
Farmingdale, New York
Site #1-52-140**

Summary of Injection Well Development Data

Well ID	Depth to Groundwater (ft)⁽¹⁾	Duration (mins)	Purged Volume (gals)	Observation
IW-A-S	17.65	20	10	Sand/Silt Free
IW-A-I	18.12	30	15	Sand/Silt Free
IW-B-S	17.60	25	7	Sand/Silt Free
IW-B-I	18.90	30	10	Sand/Silt Free
IW-1-I	18.65	25	5	Sand/Silt Free
IW-1-D	20.20	20	15	Sand/Silt Free
IW-2-S	17.70	40	20	Sand/Silt Free
IW-2-I	18.30	20	10	Sand/Silt Free
IW-2-D	19.28	35	20	Sand/Silt Free
IW-3-S	18.12	30	12	Sand/Silt Free
IW-3-I	18.30	30	10	Sand/Silt Free
IW-3-D	19.30	35	20	Sand/Silt Free
IW-4-S	17.35	20	7	Sand/Silt Free
IW-4-I	16.89	25	15	Sand/Silt Free
IW-4-D	18.31	85	30	Sand/Silt Free
IW-5-S	17.60	20	7	Sand/Silt Free
IW-5-I	16.90	20	5	Sand/Silt Free
IW-5-D	18.04	40	15	Sand/Silt Free
IW-6-I	18.10	25	10	Sand/Silt Free
IW-6-D	19.20	40	15	Sand/Silt Free
IW-7-S	17.37	20	10	Sand/Silt Free
IW-7-I	17.50	25	15	Sand/Silt Free
IW-8-I	17.15	25	10	Sand/Silt Free
IW-8-D	17.92	35	17	Sand/Silt Free
TOTAL			310	

Notes

IW = Injection Well

MW = Monitoring Well

S = Shallow

I = Intermediate

D = Deep

(1) Measured from top of well casing.

(2) Well development conducted from July 26 to 28, 2005.

**O'BRIEN & GERE**

TABLE 3-3

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
IW-A-S	Injection	8/2/05	Baseline	Yes	6.02	17.61	165	0.094	4.65	113	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		4/18/06	Post-Injection	Yes	3.76	15.6	-10	0.005	7.49	461	NM
		7/18/06	Post-Injection	Yes	6.07	17.46	522	0.287	13.63	328	Dark Brown
		10/11/06	Post-Injection	Yes	6.36	17.23	325	0.000	8.4	373	Clear
		1/9/07	Post-Injection	Yes	5.94	16.46	123	0.113	7.28	316	Slightly Cloudy
IW-A-I	Injection	8/2/05	Baseline	Yes	5.94	18.73	44.2	0.064	9.4	264	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		4/18/06	Post-Injection	Yes	7.86	14.7	-10	0.603	6.11	121	NM
		7/18/06	Post-Injection	Yes	5.12	15.09	342	0.060	10.9	264	Dark Brown
		10/11/06	Post-Injection	Yes	6.31	16.66	331	0.000	8.23	376	Light Brown
		1/9/07	Post-Injection	Yes	5.59	15.47	90.8	0.061	8.25	336	Clear
MW-A	Injection	8/2/05	Baseline	Yes	5.74	17.99	53.6	0.121	9.01	121	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		4/18/06	Post-Injection	Yes	8.85	16	155	0.005	4.97	359	NM
		7/18/06	Post-Injection	Yes	6.89	16.68	568	0.196	15.71	240	Dark Brown
		10/11/06	Post-Injection	Yes	6.3	16.12	327	0.000	8.6	378	Dark Brown
		1/9/07	Post-Injection	Yes	6.41	15.15	143	0.120	1.21	295	Light Brown
IW-B-S	Injection	8/2/05	Baseline	Yes	6.18	17.43	51.7	0.041	6.96	244	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		4/19/06	Post-Injection	Yes	5.67	14.4	89	0.182	6.03	696	NM
		7/19/06	Post-Injection	Yes	7.1	14.74	88.9	0.191	19.21	260	Brown
		10/10/06	Post-Injection	Yes	6.27	18.77	198	0.143	5.76	651	Clear
		1/9/07	Post-Injection	Yes	7.81	15.41	700.01	0.683	5.01	199	Brown

TABLE 3-3

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
IW-B-I	Injection	8/2/05	Baseline	Yes	6.02	18.59	340	0.054	6.99	262	Clear
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		4/19/06	Post-Injection	Yes	5.79	14.8	150	0.233	6.21	741	NM
		7/19/06	Post-Injection	Yes	5.4	15.07	91.3	0.055	14.72	384	Dark Brown
MW-B	Injection	10/10/06	Post-Injection	Yes	5.67	16.76	77.2	0.070	4.16	430	Light Brown
		1/9/07	Post-Injection	Yes	5.44	15.19	-5	0.243	7.59	297	Light Brown
		8/2/05	Baseline	Yes	6.38	17.1	379	0.063	6.39	262	Clear
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
		4/19/06	Post-Injection	Yes	6.33	14.8	413	0.302	2.8	658	NM
IW-1-I	Injection	7/19/06	Post-Injection	Yes	6.79	14.98	92.1	0.123	12.17	338	Brown
		10/10/06	Post-Injection	Yes	6.4	17.02	426	0.108	0.83	441	Brown
		1/9/07	Post-Injection	Yes	5.98	15.26	130	0.141	2.49	232	Brown
		8/4/05	Baseline	No	6.84	17.71	46.3	0.037	10.35	130	Clear
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
IW-1-D	Injection	8/4/05	Baseline	No	7.08	16.76	81.5	0.094	10.39	148	Clear
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple

TABLE 3-3

**National Heatset Printing Company
Farmingdale, New York
Site #1-52-140**

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
IW-2-S	Injection	8/4/05	Baseline	No	7.79	15.85	27.9	0.089	3.7	116	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
IW-2-I	Injection	8/4/05	Baseline	No	7.6	15.85	32.5	0.044	4.79	127	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
IW-2-D	Injection	8/4/05	Baseline	No	7.55	15.89	21.8	0.083	4.29	120	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
IW-3-S	Injection	8/4/05	Baseline	No	7.48	15.51	28.4	0.087	6.79	122	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
IW-3-I	Injection	8/4/05	Baseline	No	7.52	15.98	25.8	0.070	5.49	120	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple

TABLE 3-3

**National Heatset Printing Company
Farmingdale, New York
Site #1-52-140**

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
IW-3-D	Injection	8/4/05	Baseline	No	7.73	16.18	20.8	0.052	6.29	121	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
IW-4-S	Injection	8/4/05	Baseline	No	6.29	17.52	54.1	0.048	5.12	271	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
IW-4-I	Injection	8/4/05	Baseline	No	7.24	17.59	39.4	0.096	9.41	127	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
IW-4-D	Injection	8/4/05	Baseline	No	6.07	17.19	54	0.127	8.69	189	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
IW-5-S	Injection	8/4/05	Baseline	No	5.92	16.16	23.7	0.038	10.39	157	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple

TABLE 3-3

**National Heatset Printing Company
Farmingdale, New York
Site #1-52-140**

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
IW-5-I	Injection	8/4/05	Baseline	No	7.09	16.26	22.5	0.049	7.39	132	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
IW-5-D	Injection	8/4/05	Baseline	No	6.05	15.94	38.4	0.078	9.99	142	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
MW-6	Injection	8/3/05	Baseline	Yes	6.01	16.37	59.2	0.118	4.22	122	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		4/18/06	Post-Injection	Yes	6.78	14.8	999	0.689	3.11	661	NM
		7/18/06	Post-Injection	Yes	6.64	15.89	7999	0.449	11.67	175	NM
		10/10/06	Post-Injection	Yes	6.38	20.02	-5	0.329	0	340	Light Brown
		1/9/07	Post-Injection	Yes	6.28	15.94	77.3	0.525	0.59	278	Clear
IW-6-I	Injection	8/2/05	Baseline	Yes	5.42	17.74	26.1	0.040	7.22	269	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
		4/19/06	Post-Injection	Yes	6.33	14.8	138	0.216	4.99	641	NM
		7/18/06	Post-Injection	Yes	6.29	15.25	463	0.076	17.51	251	Dark Brown
		10/10/06	Post-Injection	Yes	6.53	18.2	-5	0.088	3.27	339	Dark Brown
		1/9/07	Post-Injection	Yes	6.11	15.42	32.7	0.076	6.07	279	Clear

TABLE 3-3

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
IW-6-D	Injection	8/3/05	Baseline	Yes	6.11	17.27	270	0.095	3.61	169	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		4/19/06	Post-Injection	Yes	6.43	14.7	230	0.464	0.86	694	NM
		7/18/06	Post-Injection	Yes	6.36	16.87	489	0.217	12.82	191	NM
		10/10/06	Post-Injection	Yes	6.43	20.43	487	0.159	0	487	Brown
		1/9/07	Post-Injection	Yes	6.24	14.84	308.1	68.7	0.14	269	Clear
IW-7-S	Injection	8/2/05	Baseline	Yes	6.39	18.2	143	0.063	9.09	223	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
		4/18/06	Post-Injection	Yes	6.58	15.1	737	0.221	6.46	507	NM
		7/18/06	Post-Injection	Yes	5.82	15.17	266	0.182	15.79	293	Brown
		10/11/06	Post-Injection	Yes	6.35	18.7	340	0.000	8.36	367	Clear
		1/9/07	Post-Injection	Yes	5.83	16.23	141	0.173	6.43	304	Clear
IW-7-I	Injection	8/2/05	Baseline	Yes	5.82	19.9	65.2	0.043	7.47	302	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		4/18/06	Post-Injection	Yes	3.92	15.4	779	0.005	6.69	324	NM
		7/18/06	Post-Injection	Yes	5.59	17.07	83.7	0.050	16.01	341	Brown
		10/11/06	Post-Injection	Yes	6.31	17.65	326	0.000	8.35	377	Clear
		1/9/07	Post-Injection	Yes	5.81	15.35	131	0.061	7.77	321	Light Brown
MW-7	Injection	8/2/05	Baseline	Yes	6.36	21	60.1	0.091	3.29	75	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
		4/18/06	Post-Injection	Yes	4.51	15.6	999	0.004	5.96	268	NM
		7/18/06	Post-Injection	Yes	6.58	17.8	56.5	0.211	11.79	213	Brown
		10/11/06	Post-Injection	Yes	6.28	18.97	333	0.000	7.9	380	Clear
		1/9/07	Post-Injection	Yes	6.22	15.07	129	68.3	0	286	Cloudy

TABLE 3-3

**National Heatset Printing Company
Farmingdale, New York
Site #1-52-140**

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
IW-8-I	Injection	8/4/05	Baseline	No	4.81	15.67	28.2	0.046	9.77	134	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
IW-8-D	Injection	8/4/05	Baseline	No	7.1	15.41	27.3	0.078	6.23	118	Clear
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Brown
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
MW-C	Monitoring	8/3/05	Baseline	Yes	6.15	17.28	470	0.064	7.49	196	Clear
		9/27/05	Injection	No	6.69	17.6	7	0.259	6.58	260	Clear
		9/28/05	Injection	No	7.58	17.2	11	0.117	6.44	204	Clear
		9/29/05	Injection	No	6.01	17.7	3	0.116	5.79	210	Clear
		10/3/05	Injection	No	6.57	17.1	2	0.186	5.88	215	Clear
		10/4/05	Injection	No	6.12	17.3	3	0.197	6.12	220	Clear
		10/14/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		10/20/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		10/27/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/3/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/9/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/16/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/23/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
Bottom		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
Top		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
Bottom		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		4/19/06	Post-Injection	Yes	5.84	14.8	95	0.236	4.35	687	NM
		7/19/06	Post-Injection	Yes	6.09	15.05	101	0.119	14.91	317	Light Brown
		10/9/06	Post-Injection	Yes	5.98	16.65	-5	0.093	2.6	161	Orange
		1/11/07	Post-Injection	Yes	5.78	15.4	35.5	0.088	6.15	287	Clear

TABLE 3-3

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
MW-E	Monitoring	8/4/05	Baseline	Yes	6.56	18.11	65.9	0.077	2.74	-27	Clear
		9/27/05	Injection	No	5.16	17.9	10	0.138	7.09	378	Clear
		9/28/05	Injection	No	5.27	17.9	2	0.175	5.93	337	Clear
		9/29/05	Injection	No	5.29	17.2	3	0.180	5.97	340	Clear
		10/3/05	Injection	No	5.69	17.9	2	0.187	6.1	330	Clear
		10/4/05	Injection	No	5.97	18.1	3	0.193	6.17	321	Clear
		10/14/05	Injection	No	7.29	17.7	10	0.183	5.07	345	Clear
		10/14/05	Injection	No	7.12	16.7	10	0.152	5.39	353	Clear
		10/14/05	Injection	No	6.96	16.1	47	0.166	5.59	341	Light Brown
		10/14/05	Injection	No	6.91	15.9	150	0.203	5.55	315	Brown
		10/20/05	Injection	No	7.18	16.3	143	0.157	5.1	272	Clear
		10/20/05	Injection	No	7.05	16.9	999	0.248	5.03	288	Brown
		10/27/05	Injection	No	7.24	17.1	20	0.215	4.32	332	Clear
		10/27/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/3/05	Injection	No	6.5	17.1	14	0.278	4.47	364	Clear
		11/3/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/9/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/16/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/23/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		4/20/06	Post-Injection	Yes	6.33	15.1	103	0.340	0	543	NM
		7/19/06	Post-Injection	Yes	6.05	15.62	80.9	0.138	9.21	170	Clear
		10/11/06	Post-Injection	Yes	6.27	15.88	183	0.093	0	234	Clear
		1/10/07	Post-Injection	Yes	6.07	15.56	29.1	0.080	0	197	Clear

TABLE 3-3

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
MW-F	Monitoring	8/3/05	Baseline	Yes	6.66	16.27	70.2	0.092	3.59	14	Clear
		9/27/05	Injection	No	3.55	17.1	286	0.211	6.62	346	Clear
		9/28/05	Injection	No	4.03	16.9	361	0.183	6.63	245	Clear
		9/29/05	Injection	No	4.6	17.4	18	0.172	5.91	248	Clear
		10/3/05	Injection	No	3.96	17	42	0.183	5.55	219	Clear
		10/4/05	Injection	No	4.07	17.1	28	0.187	6.07	218	Clear
		10/14/05	Injection	No	7.71	16	128	0.525	5.56	322	Brown
		10/20/05	Injection	No	7.7	17.4	14	0.147	4.85	272	Clear
		10/27/05	Injection	No	7.47	17.7	65	0.159	4.96	245	Light Brown
		11/3/05	Injection	No	7.79	17.2	2	0.18	4.62	238	Clear
		11/9/05	Injection	No	7.8	17.7	2	0.283	4.57	240	Clear
		11/16/05	Injection	No	7.88	17.9	3	0.510	4.14	249	Clear
		11/23/05	Injection	No	7.48	16.7	10	0.478	3.78	320	Clear
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		4/19/06	Post-Injection	Yes	5.88	15.4	-10	0.342	0	339	NM
		7/19/06	Post-Injection	Yes	6.08	14.99	74.3	0.274	12.61	145	Light Brown
		10/9/06	Post-Injection	Yes	5.66	14.99	165	0.188	0.13	55	Clear
		1/11/07	Post-Injection	Yes	6.43	16.4	20.1	0.136	1.99	152	Clear
MW-G	Monitoring	8/4/05	Baseline	Yes	6.57	18.19	74	0.089	2.09	-100	Clear
		9/27/05	Injection	No	4.74	18.1	0	0.117	7.03	365	Clear
		9/28/05	Injection	No	4.08	17.4	8	0.122	6.13	333	Clear
		9/29/05	Injection	No	3.92	17.3	17	0.134	5.71	329	Clear
		10/3/05	Injection	No	3.99	17	10	0.127	5.97	331	Clear
		10/4/05	Injection	No	4.13	17.1	18	0.130	5.7	317	Clear
		10/14/05	Injection	No	7.01	16.5	11	0.136	5.27	273	Clear
		10/14/05	Injection	No	6.87	16.3	142	0.204	5.35	256	Brown
		10/20/05	Injection	No	7.6	16.4	5	0.191	5.19	310	Clear
		10/20/05	Injection	No	7.07	15.9	240	0.229	5.37	290	Brown
		10/27/05	Injection	No	7.26	17.6	12	0.165	4.26	337	Clear
		10/27/05	Injection	No	7.36	15.7	18	0.182	4.75	330	Clear
		11/3/05	Injection	No	6.83	17	10	0.173	4.65	372	Clear
		11/3/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/9/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/16/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		11/23/05	Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Light Purple
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Purple
		4/20/06	Post-Injection	Yes	6.62	15	31.5	0.431	0	453	NM
		7/19/06	Post-Injection	Yes	6.59	15.25	92.6	0.170	7.83	66	NM
		10/11/06	Post-Injection	Yes	6.97	16.55	950	0.133	0.75	139	Light Brown
		1/10/07	Post-Injection	Yes	7.07	15.5	27.6	0.185	0	93	Clear

TABLE 3-3

**National Heatset Printing Company
Farmingdale, New York
Site #1-52-140**

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
MW-H	Monitoring	8/3/05	Baseline	Yes	5.99	20.21	759	0.067	7.41	190	Clear
		9/27/05	Injection	No	6.7	19.6	6	0.136	5.96	327	Clear
		9/28/05	Injection	No	6.17	19.2	18	0.220	5.95	278	Clear
		9/29/05	Injection	No	6.48	19.7	10	0.274	5.79	280	Clear
		10/3/05	Injection	No	6.47	19.3	9	0.289	6.12	275	Clear
		10/4/05	Injection	No	6.17	19.6	3	0.292	6.03	279	Clear
		10/13/05	Injection	No	7.16	19.4	11	0.131	4.57	371	Clear
		10/20/05	Injection	No	8.56	19.2	5	0.055	4.16	273	Clear
		10/27/05	Injection	No	7.24	18.6	18	0.075	4.56	280	Clear
		11/3/05	Injection	No	7.81	18.9	12	0.079	4.05	253	Clear
	Top	11/9/05	Injection	No	7.97	18.8	10	0.064	4.08	281	Clear
	Bottom	11/9/05	Injection	No	7.67	17.4	7	0.086	4.4	312	Clear
	Monitoring	11/16/05	Injection	No	7.32	18.3	8	0.117	3.93	288	Clear
		11/23/05	Injection	No	7.18	17.5	8	0.024	3.17	297	Clear
	Top	1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Monitoring	4/20/06	Post-Injection	Yes	5.96	16	55	0.432	2.75	765	NM
		7/20/06	Post-Injection	Yes	5.7	15.34	314	0.065	9.33	729	Slightly Purple
		10/11/06	Post-Injection	Yes	5.99	14.25	-5	0.092	4.8	475	Clear
		1/10/07	Post-Injection	Yes	6.96	15.05	175	0.583	6.72	403	Clear
MW-2A	Monitoring	8/3/05	Baseline	Yes	3.29	18.7	96.7	0.103	4.79	103	Clear
		9/27/05	Injection	No	4.01	19.6	187	0.145	6.2	322	Clear
		9/28/05	Injection	No	5.63	17.9	149	0.165	6.37	247	Clear
		9/29/05	Injection	No	3.44	19	8	0.160	5.38	269	Clear
		10/3/05	Injection	No	3.47	19.2	10	0.153	6.17	269	Clear
		10/4/05	Injection	No	3.09	19.3	8	0.170	6.09	263	Clear
		10/13/05	Injection	No	7.75	17.1	0	0.244	4.68	303	Clear
		10/20/05	Injection	No	7.55	18.3	46	0.171	4.33	300	Clear
		10/27/05	Injection	No	7.49	19.3	10	0.216	4.06	322	Clear
		11/3/05	Injection	No	7.09	18.4	4	0.209	4.04	322	Clear
		11/9/05	Injection	No	7.22	17.2	8	0.210	3.84	336	Clear
		11/16/05	Injection	No	7.6	18.2	12	0.216	3.94	322	Clear
		11/23/05	Injection	No	7.7	15.9	3	0.089	3.05	333	Clear
	Top	1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Monitoring	4/20/06	Post-Injection	Yes	6.16	14.1	149	0.519	1.59	615	NM
		7/20/06	Post-Injection	Yes	6.26	16.64	66	0.141	4.07	170	Clear
		10/10/06	Post-Injection	Yes	6.1	15.48	20.1	0.159	0.16	142	Clear
		1/10/07	Post-Injection	Yes	5.84	16.68	55.1	0.137	0	142	Cloudy

TABLE 3-3

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
MW-3A	Monitoring	8/4/05	Baseline	Yes	5.9	17.8	142	0.131	5.79	149	Clear
		9/27/05	Injection	No	5.93	19.4	10	0.268	5.57	335	Clear
		9/28/05	Injection	No	5.39	16.8	10	0.262	6.41	311	Clear
		9/29/05	Injection	No	5.77	17.3	1	0.268	6.13	329	Clear
		10/3/05	Injection	No	5.49	17	0	0.270	6.17	329	Clear
		10/4/05	Injection	No	5.79	16.9	8	0.296	6.2	317	Clear
		10/13/05	Injection	No	7.3	16.1	1	0.212	4.91	351	Clear
		10/20/05	Injection	No	7.46	16.4	5	0.210	4.74	273	Clear
		10/27/05	Injection	No	7.4	18.4	0	0.132	3.94	335	Clear
		11/3/05	Injection	No	7.79	17.8	3	0.217	3.9	327	Clear
		11/9/05	Injection	No	7.71	17.5	7	0.250	3.89	336	Clear
		11/16/05	Injection	No	7.8	17.7	4	0.228	3.98	344	Clear
		11/23/05	Injection	No	7.57	16.3	4	0.042	2.95	337	Clear
	Top	1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		4/20/06	Post-Injection	Yes	5.99	14.4	67.1	0.535	1.23	611	NM
		7/20/06	Post-Injection	Yes	6.06	16.03	65.1	0.252	3.61	261	Clear
		10/10/06	Post-Injection	Yes	5.95	20.68	31.1	0.191	1.37	629	Purple
		1/10/07	Post-Injection	Yes	5.99	16.62	48.4	0.249	1.32	236	Clear

TABLE 3-3

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
MW-9	Monitoring	8/4/05	Baseline	Yes	6.05	17.48	122	0.064	5.41	129	Clear
		9/27/05	Injection	No	6.86	20.2	18	0.080	6.47	350	Clear
		9/28/05	Injection	No	6.05	18.8	11	0.076	5.82	330	Clear
		9/29/05	Injection	No	6.09	19.4	12	0.080	5.25	327	Clear
		10/3/05	Injection	No	6.07	19	10	0.110	5.6	319	Clear
		10/4/05	Injection	No	6.1	19.3	8	0.109	6.11	312	Clear
		10/13/05	Injection	No	8.08	17.4	6	0.310	4.65	350	Clear
		10/20/05	Injection	No	8.5	19.7	4	0.024	4.18	277	Clear
		10/20/05	Injection	No	8.31	16.4	148	0.240	4.82	260	Brown
		10/27/05	Injection	No	6.82	18.8	10	0.049	3.83	355	Clear
		10/27/05	Injection	No	8.85	17	12	0.062	4.44	335	Clear
		11/3/05	Injection	No	6.47	18.8	5	0.208	3.96	328	Clear
		11/3/05	Injection	No	6.51	15.5	12	0.050	4.71	364	Clear
		11/9/05	Injection	No	8.01	18.1	4	0.051	3.81	330	Clear
		11/9/05	Injection	No	7.81	15.5	3	0.045	4.51	352	Clear
		11/16/05	Injection	No	8.02	17.9	10	0.061	3.86	362	Clear
		11/23/05	Injection	No	7.8	16.5	10	0.054	2.86	340	Clear
		11/23/05	Injection	No	7.67	15.4	7	0.067	2.99	343	Clear
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		4/19/06	Post-Injection	Yes	5.91	15.4	27.4	0.275	0.38	708	NM
		7/20/06	Post-Injection	Yes	6.14	15.12	139	0.113	10.35	620	Clear
		10/11/06	Post-Injection	Yes	6.83	15.43	143	0.110	3.85	491	Clear
		1/10/07	Post-Injection	Yes	7.49	13.72	21.2	0.082	3.42	397	Clear

TABLE 3-3

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Well Sampling and Water Quality Field Parameters

Well ID	Well Type	Activity Date	Activity Phase	Ground Water Samples Collected for VOC Analysis	Field Parameters						
					pH	Temp. (°C)	Turbidity (NTU)	Specific Conductance (SC, mS/cm)	Dissolved Oxygen (DO, g/L)	Oxidation Reduction Potential (ORP, mV)	Color
MW-10	Monitoring	8/3/05	Baseline	Yes	4.5	18.04	54	0.096	1.5	141	Clear
		9/27/05	Injection	No	4.92	19.4	0	0.127	5.57	335	Clear
		9/28/05	Injection	No	4.79	17.9	4	0.123	6.57	290	Clear
		9/29/05	Injection	No	4.6	17.9	8	0.130	6.29	290	Clear
		10/3/05	Injection	No	4.68	18.2	0	0.137	6.19	283	Clear
		10/4/05	Injection	No	4.1	18.7	0	0.129	6.12	297	Clear
		10/13/05	Injection	No	9.08	17.7	10	0.184	4.58	220	Clear
		10/20/05	Injection	No	7.9	17.6	292	0.126	4.59	261	Brown
		10/27/05	Injection	No	7.08	18.3	10	0.137	3.95	331	Clear
		11/3/05	Injection	No	7.29	18.4	10	0.135	4.07	322	Clear
		11/9/05	Injection	No	7.46	17.7	10	0.131	4.02	331	Clear
		11/16/05	Injection	No	7.92	17.4	3	0.143	4.04	314	Clear
		11/23/05	Injection	No	7.36	16.5	10	0.133	2.94	219	Clear
	Top	1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/17/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/24/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	1/31/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Top	2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
	Bottom	2/10/06	Post-Injection	No	NM	NM	NM	NM	NM	NM	Clear
		4/20/06	Post-Injection	Yes	5.86	14.4	142	0.664	0	784	NM
		7/20/06	Post-Injection	Yes	6.31	16.86	166	0.643	10.4	714	Purple
		10/10/06	Post-Injection	Yes	5.67	14.41	21.7	0.116	0	195	Clear
		1/10/07	Post-Injection	Yes	6.35	13.21	11.7	0.218	0	15	Clear

Note

NM = Not Monitored



TABLE 3-4

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Estimated Concentrations and Quantities of Sodium Permanganate Solution

Date	Target Conc ⁽¹⁾ (wt%)	Bulk NaMnO ₄ Added to Mix Tank		Water Added to Mix Tank		Mix Tank: Pre-Injection				Injection		Mix Tank: Post-Injection									
		(gals)		(lbs) ⁽²⁾		Mix Tank		(gals)		(lbs) ⁽²⁾		Solution Conc ⁽⁵⁾ (wt%)		Solution Injected (gals)		NaMnO ₄ ⁽⁶⁾ Injected (lbs)		Solution Quantity ⁽⁷⁾ (lbs)		NaMnO ₄ ⁽⁷⁾ Quantity (lbs)	
9/21/05	20	3,282	37,659	4,225	35,258	7,507	72,917	9.713	20.7	0	0	0	7,507	15,064	72,917	15,064					
9/26/05	20	3,314	38,026	2,371	19,786	13,192	130,729	9.910	23.2	319	3,157	731	12,873	29,543	127,571	29,543					
9/27/05	20	0	0	0	0	12,873	127,571	9.910	23.2	5,090	50,445	11,682	7,783	17,861	77,126	17,861					
9/28/05	20	0	0	0	0	7,783	77,126	9.910	23.2	4,452	44,113	10,216	3,331	7,645	33,013	7,645					
9/29/05	20	3,282	37,659	3,282	27,388	9,895	98,060	9.910	23.2	3,598	35,650	8,256	6,298	14,453	62,410	14,453					
10/3/05	20	0	0	0	0	6,298	62,410	9.910	23.2	4,480	44,393	10,281	1,818	4,172	18,017	4,172					
10/4/05	20	0	0	0	0	1,818	18,017	9.910	23.2	1,818	18,017	4,172	0	0	0	0					
TOTAL		9,878	113,344	9,878	82,432					19,756	195,776	45,338									

Notes

(1) Target mass concentrations obtained from Section XI Supplementary Specifications, Contract Documents, Contract Number D005272, Shaw Environmental & Infrastructure Engineering of New York, P.C., August 25, 2004.

(2) Lbs = Gallons x Density (lbs/gallon)
Where,

Density of bulk NaMnO₄ = 11.474 lbs/gallon

Density of water = 8.345 lbs/gallon

(3) Estimated solution quantity = Previous post-injection quantity + Bulk NaMnO₄ added + Water Added

Estimated NaMnO₄ quantity = Previous post-injection quantity + 0.4 lbs NaMnO₄/lb bulk NaMnO₄

(4) Estimated solution density (lbs/gallon) = Solution quantity (lbs) / Solution quantity (gallons)

(5) Estimated solution concentration (weight %) = NaMnO₄ quantity (lbs) / Solution quantity (lbs)

(6) Estimated NaMnO₄ injected (lbs) = Estimated solution conc (wt%)/100% x Solution injected (lbs)

(7) Estimated post-injection quantity = Pre-injection quantity - Injected quantity

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TABLE 3-5

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Estimated Concentrations and Quantities of Potassium Permanganate Solution

Date	Target Conc ⁽¹⁾ (wt%)	Bulk KMnO ₄ Added to Mix Tank		Water Added to Mix Tank		Mix Tank: Pre-Injection				Injection			Mix Tank: Post-Injection		
						Solution Quantity ⁽³⁾ (gals)	KMnO ₄ ⁽³⁾ Quantity (lbs)	Solution Density ⁽⁴⁾ (lbs/gal)	Solution Conc ⁽⁵⁾ (wt%)	Solution Injected (gals)	Solution Injected (lbs)	KMnO ₄ ⁽⁶⁾ Injected (lbs)	Solution Quantity ⁽⁷⁾ (gals)	Solution Quantity ⁽⁷⁾ (lbs)	KMnO ₄ ⁽⁷⁾ Quantity (lbs)
		(lbs)	(gals) ⁽²⁾	(gals)	(lbs) ⁽²⁾										
10/6/05	2	3,313	248	19,878	165,882	20,126	169,195	8.407	1.9	4,792	40,286	779	15,334	128,909	2,494
10/7/05	2	0	0	0	0	15,334	128,909	8.407	1.9	5,860	49,264	953	9,474	79,645	1,541
10/11/05	2	0	0	0	0	9,474	79,645	8.407	1.9	4,572	38,436	744	4,902	41,209	797
10/12/05	2	1,636	122	9,816	81,918	14,841	124,763	8.407	1.9	2,605	21,897	424	12,236	102,867	1,990
10/13/05	2	0	0	0	0	12,236	102,867	8.407	1.9	4,274	35,931	695	7,962	66,936	1,295
10/14/05	2	0	0	0	0	7,962	66,936	8.407	1.9	5,452	45,831	887	2,510	21,105	408
10/17/05	2	0	0	0	0	2,510	21,105	8.407	1.9	2,510	21,105	408	0	0	0
10/18/05	2	2,531	189	14,857	123,981	15,046	126,512	8.408	2.0	0	0	0	15,046	126,512	2,501
10/19/05	2	0	0	0	0	15,046	126,512	8.408	2.0	4,847	40,750	805	10,200	85,762	1,695
10/20/05	2	0	0	0	0	10,200	85,762	8.408	2.0	4,615	38,804	767	5,585	46,958	928
10/21/05	2	0	0	0	0	5,585	46,958	8.408	2.0	4,988	41,939	829	597	5,019	99
10/24/05	2	2,462	184	14,452	120,601	15,233	128,082	8.408	2.0	1,538	12,930	256	13,695	115,152	2,276
10/25/05	2	0	0	0	0	13,695	115,152	8.408	2.0	7,699	64,737	1,280	5,996	50,415	997
10/26/05	2	2,181	163	12,803	106,839	18,962	159,435	8.408	2.0	4,461	37,510	741	14,501	121,925	2,410
10/27/05	2	0	0	0	0	14,501	121,925	8.408	2.0	7,353	61,829	1,222	7,147	60,096	1,188

TABLE 3-5

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Estimated Concentrations and Quantities of Potassium Permanganate Solution

Date	Target Conc ⁽¹⁾ (wt%)	Bulk KMnO ₄ Added to Mix Tank		Water Added to Mix Tank		Mix Tank: Pre-Injection				Injection			Mix Tank: Post-Injection		
						Solution Quantity ⁽³⁾ (gals)	(lbs)	KMnO ₄ ⁽³⁾ Quantity (lbs)	Solution Density ⁽⁴⁾ (lbs/gal)	Solution Conc ⁽⁵⁾ (wt%)	Solution Injected		KMnO ₄ ⁽⁶⁾ Injected (lbs)	Solution Quantity ⁽⁷⁾	
											(gals)	(lbs)		(gals)	(lbs)
10/28/05	2	0	0	0	0	7,147	60,096	1,188	8.408	2.0	6,000	50,445	997	1,148	9,651
11/1/05	2	2,478	185	14,546	121,385	15,879	133,514	2,639	8.408	2.0	607	5,107	101	15,272	128,407
11/2/05	2	0	0	0	0	15,272	128,407	2,538	8.408	2.0	7,131	59,956	1,185	8,141	68,450
11/3/05	2	1,875	140	11,006	91,848	19,288	162,174	3,205	8.408	2.0	3,151	26,493	524	16,137	135,680
11/4/05	2	0	0	0	0	16,137	135,680	2,682	8.408	2.0	5,823	48,959	968	10,314	86,721
11/7/05	2	0	0	0	0	10,314	86,721	1,714	8.408	2.0	6,189	52,040	1,029	4,125	34,681
11/8/05	2	2,576	193	15,121	126,187	19,439	163,444	3,231	8.408	2.0	3,418	28,742	568	16,020	134,702
11/9/05	2	0	0	0	0	16,020	134,702	2,662	8.408	2.0	8,087	67,995	1,344	7,934	66,708
11/10/05	2	1,717	128	10,079	84,109	18,141	152,534	3,015	8.408	2.0	4,219	35,474	701	13,922	117,060
11/11/05	2	0	0	0	0	13,922	117,060	2,314	8.408	2.0	7,375	62,011	1,226	6,547	55,049
11/14/05	2	2,329	174	13,671	114,086	20,392	171,464	3,389	8.408	2.0	4,613	38,787	767	15,779	132,677
11/15/05	2	0	0	0	0	15,779	132,677	2,622	8.408	2.0	8,224	69,149	1,367	7,555	63,528
11/16/05 ⁽⁸⁾	2	2,448	183	14,370	119,915	22,108	185,891	3,674	8.408	2.0	4,982	41,890	828	17,126	144,001
11/17/05	2	0	0	0	0	17,126	144,001	2,846	8.408	2.0	6,802	57,193	1,130	10,324	86,809
11/18/05	2	861	64	5,087	42,455	15,476	130,125	2,567	8.408	2.0	2,879	24,207	477	12,597	105,918

TABLE 3-5

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Estimated Concentrations and Quantities of Potassium Permanganate Solution

Date	Target Conc ⁽¹⁾ (wt%)	Bulk KMnO ₄ Added to Mix Tank		Water Added to Mix Tank		Mix Tank: Pre-Injection			Injection			Mix Tank: Post-Injection		
						Solution Quantity ⁽³⁾ (gals)	KMnO ₄ ⁽³⁾ Quantity (lbs)	Solution Density ⁽⁴⁾ (lbs/gal)	Solution Conc ⁽⁵⁾ (wt%)	Solution Injected		KMnO ₄ ⁽⁶⁾ Injected (lbs)	Solution Quantity ⁽⁷⁾	
11/21/05	2	0	0	0	0	12,597	105,918	8.408	2.0	5,538	46,564	918	7,059	59,354
11/22/05	2	0	0	0	0	7,059	59,354	8.408	2.0	2,654	22,317	440	4,405	37,037
11/23/05 - 11/30/05 ⁽⁹⁾	2	0	0	5,475	45,692	9,880	82,730	8.373	0.9	2,654	22,224	196	7,226	60,506
TOTAL		26,407	1,975	161,162	1,344,900					155,911	1,310,801	25,556		

Notes

(1) Target mass concentrations obtained from Section XI Supplementary Specifications, Contract Documents, Contract Number D005272, Shaw Environmental & Infrastructure Engineering of New York, P.C., August 25, 2004.

(2) Bulk KMnO₄ added (gallons) = Bulk KMnO₄ (lbs) / Bulk KMnO₄ density (lb/ft³) x 7.48 gallons/ft³

Where,

Bulk KMnO₄ density = 100 lbs/ft³

Water added (lbs) = Gallons x Density (lbs/gallon)

Where,

Density of water = 8.345 lbs/gallon

(3) Estimated solution quantity = Previous post-injection quantity + Bulk KMnO₄ added + Water Added

Estimated KMnO₄ quantity = Previous post-injection quantity + 0.988 lbs KMnO₄/lb bulk KMnO₄

(4) Estimated solution density (lbs/gallon) = Solution quantity (lbs) / Solution quantity (gallons)

(5) Estimated solution concentration (weight %) = KMnO₄ quantity (lbs) / Solution quantity (lbs)

(6) Estimated KMnO₄ injected (lbs) = Estimated solution conc (wt%)/100% x Solution injected (lbs)

(7) Estimated post-injection quantity = Pre-injection quantity - Injected quantity

(8) Water added to the mix tank included 430 gallons of water from previous well sampling purges.

(9) From 11/23/05 to 11/30/05, the KMnO₄ injection was being completed. Only water added was to dilute and flush out the mix tank and the pipings before injecting into the wells.



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TABLE 3-6

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Estimated Volume of Permanganate Solution Injected to the Wells

Well ID	~20% NaMnO ₄ Solution		~2% KMnO ₄ Solution	
	Target Volume ¹ (gals)	Estimated Volume Injected (gals)	Target Volume ¹ (gals)	Estimated Volume Injected (gals)
IW-A-S	667	659	5,000	5,352
IW-A-I	667	659	5,000	4,631
MW-A	1,000	988	7,500	6,989
IW-B-S	667	659	5,000	5,336
IW-B-I	667	659	5,000	5,487
MW-B	1,000	988	7,500	8,050
IW-1-I	667	659	5,000	4,656
IW-1-D	667	659	5,000	4,659
IW-2-S	667	659	5,000	4,803
IW-2-I	667	659	5,000	4,798
IW-2-D	667	659	5,000	4,630
IW-3-S	667	659	5,000	5,437
IW-3-I	667	659	5,000	5,391
IW-3-D	667	659	5,000	5,351
IW-4-S	667	659	5,000	5,353
IW-4-I	667	659	5,000	5,506
IW-4-D	667	659	5,000	5,557
IW-5-S	667	659	5,000	5,557
IW-5-I	667	659	5,000	5,583
IW-5-D	667	659	5,000	5,343
MW-6	667	659	5,000	5,448
IW-6-I	667	659	5,000	5,351
IW-6-D	1,000	988	7,500	8,235
IW-7-S	667	659	5,000	5,352
IW-7-I	667	659	5,000	5,353
MW-7	1,000	988	7,500	8,104
IW-8-I	667	659	5,000	4,712
IW-8-D	667	659	5,000	4,885
TOTAL	20,000	19,756	150,000	155,911

Note

1. Target injection volumes obtained from *Section XI Supplementary Specifications, Contract Documents, Contract Number D005272*, Shaw Environmental & Infrastructure Engineering of New York, P.C., August 25, 2004.

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TABLE 4-1

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Groundwater VOC Sampling Results and Concentration Trends

IW-A-8										
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID	8/2/05	4/18/06	7/18/06	10/11/06	1/9/07	Concentration Trend
				Sampling Date	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
				Sampling Type		Post-Inj	Post-Inj	Post-Inj	Post-Inj	
2-Butanone	78-93-3	50	µg/L		860 D	1.6 J	0.23 U	0.23 U	1.1 U	Decrease
4-Methyl-2-Pentanone	108-10-1	NA	µg/L		0.46 U	0.49 JB	0.46 U	0.46 U	1.6 U	Inconclusive
IW-A-1										
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID	8/2/05	4/18/06	7/18/06	10/11/06	1/9/07	Concentration Trend
				Sampling Date	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
				Sampling Type		Post-Inj	Post-Inj	Post-Inj	Post-Inj	
Acetone	67-64-1	50	µg/L		1.6 U	1.6 U	1.8 JB	1.6 U	2.3 U	Inconclusive
2-Butanone	78-93-3	50	µg/L		98	1.1 J	0.23 U	0.23 U	1.1 U	Decrease
MW-A										
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID	8/2/05	4/18/06	7/18/06	10/11/06	1/9/07	Concentration Trend
				Sampling Date	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
				Sampling Type		Post-Inj	Post-Inj	Post-Inj	Post-Inj	
Acetone	67-64-1	50	µg/L		1.6 U	5.2	1.6 U	14 JB	0.23 U	Inconclusive
2-Butanone	78-93-3	50	µg/L		280 D	2 J	0.23 U	0.23 U	1.1 U	Decrease
cis-1,2-Dichloroethene	156-59-2	5	µg/L		2.2	0.38 J	0.09 U	0.09 U	0.29 U	Decrease
Trichloroethene	79-01-6	5	µg/L		2.2	0.63 J	0.51 J	0.43 J	0.46 U	Decrease
2-Hexanone	591-78-6	50	µg/L		0.57 U	0.8 J	0.57 U	0.57 U	1.7 U	Inconclusive
Tetrachloroethene	127-18-4	5	µg/L		98 D	1.1	0.76 J	0.74 J	0.48 U	Decrease
IW-B-8										
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID	8/2/05	4/19/06	7/19/06	10/10/06	1/9/07	Concentration Trend
				Sampling Date	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
				Sampling Type		Post-Inj	Post-Inj	Post-Inj	Post-Inj	
2-Butanone	78-93-3	50	µg/L		250	0.94 J	0.23 U	0.23 U	1.1 U	Decrease
Tetrachloroethene	127-18-4	5	µg/L		32	0.12 U	0.12 U	0.12 U	0.48 U	Decrease
IW-B-1										
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID	8/2/05	4/19/06	7/19/06	10/10/06	1/9/07	Concentration Trend
				Sampling Date	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
				Sampling Type		Post-Inj	Post-Inj	Post-Inj	Post-Inj	
Acetone	67-64-1	50	µg/L		1.6 U	1.6 U	2.3 JB	1.6 U	2.3 U	Inconclusive
2-Butanone	78-93-3	50	µg/L		45	30	0.23 U	0.23 U	1.1 U	Decrease
4-Isopropyltoluene	99-87-6	5	µg/L		0.13 U	0.13 U	0.42 J	0.12 U	0.49 U	Inconclusive

TABLE 4-1

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Groundwater VOC Sampling Results and Concentration Trends

MW-2														
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID		8/2/05		4/19/06		7/19/06		10/10/06		Concentration Trend
				Sampling Date	Sampling Type	Baseline	Split	Post-Inj	Post-Inj	Post-Inj	Split	Post-Inj	Post-Inj	
2-Butanone	78-93-3	50	µg/L			180	98	1.3 J		0.23 U	5 U	0.23 U	1.1 U	Decrease
cis-1,2-Dichloroethene	156-59-2	5	µg/L			0.09 U	5 U	1.7		0.09 U	5 U	0.09 U	0.29 U	Inconclusive
Trichloroethene	79-01-6	5	µg/L			0.77 J	3 J	0.54 J		0.35 J	5 U	0.12 U	0.46 U	Inconclusive
Tetrachloroethene	127-18-4	5	µg/L			32	49	0.36 J		0.12 U	5 U	0.12 U	0.48 U	Decrease
MW-3														
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID		8/3/05		4/18/06		7/18/06		10/10/06		Concentration Trend
				Sampling Date	Sampling Type	Baseline		Post-Inj	Post-Inj	Post-Inj	Split	Post-Inj	Post-Inj	
Acetone	67-64-1	50	µg/L			1.6 U		33		6 B	5	1.6 U	2.3 U	Inconclusive
2-Butanone	78-93-3	50	µg/L			0.23 U		27		0.23 U	5 U	0.23 U	1.1 U	Inconclusive
cis-1,2-Dichloroethene	156-59-2	5	µg/L			0.89 J		0.09 U		7.8	6	4.2	2.7 J	Inconclusive
Trichloroethene	79-01-6	5	µg/L			0.12 U		0.12 U		0.97 J	5 U	0.64 J	0.46 U	Inconclusive
4-Methyl-2-Pentanone	108-10-1	NA	µg/L			0.46 U		2.1 J		0.46 U	5 U	0.46 U	1.6 U	Inconclusive
2-Hexanone	591-78-6	50	µg/L			0.57 U		2 J		0.57 U	5 U	0.57 U	1.7 U	Inconclusive
Tetrachloroethene	127-18-4	5	µg/L			1.1		1.1		3.3	5 U	2.4	2.8 J	Inconclusive
1,4-Dichlorobenzene	106-46-7	3	µg/L			0.12 U		2.4		2.9	5 U	1.6	1.7 J	Inconclusive
1,2,4-Trichlorobenzene	120-82-1	5	µg/L			0.08 U		0.08 U		0.31 J	5 U	0.08 U	0.46 U	Inconclusive
MW-3d														
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID		8/2/05		4/19/06		7/18/06		10/10/06		Concentration Trend
				Sampling Date	Sampling Type	Baseline	Split	Post-Inj	Post-Inj	Post-Inj	Split	Post-Inj	Post-Inj	
Acetone	67-64-1	50	µg/L			1.6 U	5 U	1.6 U		2.5 JB		16 JB	2.3 U	Inconclusive
2-Butanone	78-93-3	50	µg/L			63	38	5.3		0.23 U		0.23 U	1.1 U	Decrease
cis-1,2-Dichloroethene	156-59-2	5	µg/L			1.3	5 U	0.09 U		0.09 U		0.09 U	0.29 U	Decrease
Trichloroethene	79-01-6	5	µg/L			15	20	0.12 U		0.12 U		0.12 U	0.46 U	Decrease
Tetrachloroethene	127-18-4	5	µg/L			0.69 J	5 U	0.12 U		0.12 U		0.12 U	0.48 U	Inconclusive

TABLE 4-1

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Groundwater VOC Sampling Results and Concentration Trends

Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	IW-4-D						Concentration Trend
				Well ID	8/2/05	4/19/06	7/18/06	10/10/06	1/9/07	
				Sampling Date	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
				Sampling Type						
Acetone	67-64-1	50	µg/L		1.6 U	6.3	2.6 JB	1.6 U	2.3 U	Inconclusive
2-Butanone	78-93-3	50	µg/L		54	21	0.23 U	0.23 U	1.1 U	Decrease
cis-1,2-Dichloroethene	156-59-2	5	µg/L		3.2	0.8 J	0.93 J	0.09 U	0.29 U	Decrease
Trichloroethene	79-01-6	5	µg/L		6.1	1.3	1.4	1.1	0.46 U	Decrease
2-Hexanone	591-78-6	50	µg/L		0.57 U	0.84 J	0.57 U	0.57 U	1.7 U	Inconclusive
Tetrachloroethene	127-18-4	5	µg/L		250 D	0.12 U	0.12 U	0.12 U	0.48 U	Decrease
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	IW-7-S						Concentration Trend
				Well ID	8/2/05	4/18/06	7/18/06	10/11/06	1/9/07	
				Sampling Date	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
				Sampling Type						
Acetone	67-64-1	50	µg/L		65	13	5 U	18 JB	2.3 U	Decrease
2-Butanone	78-93-3	50	µg/L		2900 D	4.1 J	5 U	0.23 U	1.1 U	Decrease
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	IW-7-L						Concentration Trend
				Well ID	8/2/05	4/18/06	7/18/06	10/11/06	1/9/07	
				Sampling Date	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
				Sampling Type						
Acetone	67-64-1	50	µg/L		78	9.8	0.23 U	0.23 U	1.1 U	Decrease
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	MW-7						Concentration Trend
				Well ID	8/2/05	4/18/06	7/18/06	10/11/06	1/9/07	
				Sampling Date	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
				Sampling Type						
Acetone	67-64-1	50	µg/L		1.6 U	1.6 U	2.8 JB	1.6 U	2.3 U	Inconclusive
2-Butanone	78-93-3	50	µg/L		130	1.3 J	0.23 U	0.23 U	1.1 U	Decrease
cis-1,2-Dichloroethene	156-59-2	5	µg/L		4.5	0.69 J	0.52 J	0.09 U	0.29 U	Inconclusive
Trichloroethene	79-01-6	5	µg/L		3	1.2	0.95 J	0.8 J	0.46 U	Inconclusive
Tetrachloroethene	127-18-4	5	µg/L		0.62 J	0.12 U	0.12 U	0.12 U	0.48 U	Inconclusive
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	MW-9						Concentration Trend
				Well ID	8/3/05	4/19/06	7/19/06	10/9/06	1/11/07	
				Sampling Date	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
				Sampling Type						
cis-1,2-Dichloroethene	156-59-2	5	µg/L		0.93 J	5 U	0.09 U	5 U	0.29 U	Inconclusive
Trichloroethene	79-01-6	5	µg/L		1.1	1 J	0.58 J	5 U	0.46 U	Inconclusive
Tetrachloroethene	127-18-4	5	µg/L		45 D	100	1.3	2 J	0.48 U	Decrease

TABLE 4-1

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Groundwater VOC Sampling Results and Concentration Trends

Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	MW-E												Concentration Trend
				Well ID		8/4/05		4/20/06		7/19/06		10/11/06		1/10/07		
				Sampling Date	Sampling Type	Baseline	Split	Post-Inj	Split	Post-Inj	Split	Post-Inj	Split	Post-Inj	Split	
2-Butanone	78-93-3	50	µg/L			0.23 U	5 U	0.7 J		0.23 U	5 U	0.23 U	5 U	1.1 U	Inconclusive	
cis-1,2-Dichloroethene	156-59-2	5	µg/L			2.4	3 J	0.37 J		1	5 U	0.09 U	5 U	0.29 U	Decrease	
Trichloroethene	79-01-6	5	µg/L			4.8	7	0.6 J		1.4	5 U	0.48 J	5 U	0.46 U	Decrease	
Toluene	108-88-3	5	µg/L			0.11 U	5 U	0.4 J		0.11 U	5 U	0.11 U	5 U	0.36 U	Inconclusive	
Tetrachloroethene	127-18-4	5	µg/L			72 D	150	14		42 D	69	18	35	9.6	Decrease	
sec-Butylbenzene	135-98-8	5	µg/L			1	5 U	0.48 J		0.91 J	5 U	0.5 J	5 U	0.44 U	Decrease	
4-Isopropyltoluene	99-87-6	5	µg/L			0.13 U	5 U	0.46 J		0.64 J	5 U	1.1	5 U	0.49 U	Inconclusive	
n-Butylbenzene	104-51-8	5	µg/L			0.12 U	5 U	0.12 U		0.47 J	5 U	1.5	5 U	0.49 U	Inconclusive	
1,2,4-Trichlorobenzene	120-82-1	5	µg/L			0.08 U	5 U	0.08 U		0.08 U	5 U	1.3	5 U	0.46 U	Inconclusive	

Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	MW-F												Concentration Trend
				Well ID		8/3/05		4/19/06		7/19/06		10/9/06		1/11/07		
				Sampling Date	Sampling Type	Baseline	Split	Post-Inj	Split	Post-Inj	Split	Post-Inj	Split	Post-Inj	Split	
1,1-Dichloroethene	75-35-4	5	µg/L			0.19 U		0.36 J	5 U	0.19 U		0.19 U		0.38 U	Inconclusive	
2-Butanone	78-93-3	50	µg/L			0.23 U		0.43 J	5 U	0.23 U		0.23 U		1.1 U	Inconclusive	
cis-1,2-Dichloroethene	156-59-2	5	µg/L			26		94 D	100	13		13		10	Decrease	
Trichloroethene	79-01-6	5	µg/L			1.1		3.5	5 U	4.4		1.6		2.1 J	Inconclusive	
Tetrachloroethene	127-18-4	5	µg/L			4.4		13	13	22		7.3		7.8	Inconclusive	
1,2,4-Trichlorobenzene	120-82-1	5	µg/L			0.08 U		0.33 J	5 U	0.08 U		0.08 U		0.46 U	Inconclusive	

TABLE 4-1

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Groundwater VOC Sampling Results and Concentration Trends

Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	MW-9					Concentration Trend
				Well ID	8/4/05	4/20/06	7/19/06	10/11/06	
				Sampling Date Sampling Type	Baseline	Post-Inj	Post-Inj	Post-Inj	
1,1-Dichloroethene	75-35-4	5	µg/L		0.52 J	0.19 U	0.19 U	0.19 U	Inconclusive
Acetone	67-64-1	50	µg/L		1.6 U	1.6 U	9.4 B	1.6 U	Inconclusive
2-Butanone	78-93-3	50	µg/L		0.23 U	0.9 J	0.23 U	0.23 U	Inconclusive
cis-1,2-Dichloroethene	156-59-2	5	µg/L		12	1.1	0.44 J	0.98 J	Inconclusive
Trichloroethene	79-01-6	5	µg/L		16	2.5	1.3	2.5 U	Decrease
Toluene	108-88-3	5	µg/L		0.11 U	0.43 J	0.11 U	0.11 U	Decrease
Tetrachloroethene	127-18-4	5	µg/L		240 D	34	17	17	Inconclusive
n-Propylbenzene	103-65-1	5	µg/L		0.55 J	0.1 U	0.33 J	0.1 U	Decrease
sec-Butylbenzene	135-98-8	5	µg/L		3.1	0.95 J	1.7	0.61 J	Inconclusive
4-Isopropyltoluene	99-87-6	5	µg/L		1.4	0.74 J	0.72 J	0.89 U	Inconclusive
n-Butylbenzene	104-51-8	5	µg/L		0.61	0.37 J	0.78 J	0.12 U	Inconclusive
Naphthalene	91-20-3	10	µg/L		0.1 U	0.35 J	0.1 U	0.1 U	Inconclusive
1,2,4-Trichlorobenzene	120-82-1	5	µg/L		0.08 U	0.08 U	0.08 U	1.3	Inconclusive
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	MW-H					Concentration Trend
				Well ID	8/3/05	4/20/06	7/20/06	10/11/06	
				Sampling Date Sampling Type	Baseline	Post-Inj	Post-Inj	Post-Inj	
Acetone	67-64-1	50	µg/L		1.6 U	2.8 J	11 B	1.6 U	Inconclusive
Methylene Chloride	75-09-2	5	µg/L		0.42 U	0.45 J	0.42 U	0.42 U	Inconclusive
Chloroform	67-66-3	7	µg/L		0.16 U	3.4	1.6	0.16 U	Inconclusive
Tetrachloroethene	127-18-4	5	µg/L		1.5	470	0.9 J	0.12 U	Inconclusive
Bromoform	75-25-2	50	µg/L		0.09 U	1.6	0.78 J	0.09 U	Inconclusive
Hexachloroethane	67-72-1	5	µg/L		NA	11 J	1.7 J	NA	Inconclusive

TABLE 4-1

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Groundwater VOC Sampling Results and Concentration Trends

Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	MW-2A						Concentration Trend
				Well ID	8/3/05	4/20/06	7/20/06	10/10/06	1/10/07	
				Sampling Date Sampling Type	Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
Vinyl Chloride	75-01-4	2	µg/L		0.09 U	0.09 U	6.8	0.91 J	0.33 U	Inconclusive
Tert butyl alcohol	75-65-0	NA	µg/L		1.5 U	9	1.5 U	1.5 U	4.5 U	Inconclusive
1,1-Dichloroethene	75-35-4	5	µg/L		5.3	0.48 J	2.7	0.19 U	1.6 J	Inconclusive
Methyl tert-butyl Ether	1634-04-4	10	µg/L		13	4.5	0.81 J	0.22 U	0.28 U	Decrease
trans-1,2-Dichloroethene	156-60-5	5	µg/L		31	6.4	24	5.85	58	Inconclusive
cis-1,2-Dichloroethene	156-59-2	5	µg/L		3100 D	620 D	3000 D	380 D	3300 D	Inconclusive
Trichloroethene	79-01-6	5	µg/L		2300 D	820 D	1700 D	220 D	2500 D	Inconclusive
4-Methyl-2-Pentanone	108-10-1	NA	µg/L		0.46 U	14 J	0.46 U	0.46 U	1.6 U	Inconclusive
Tetrachloroethene	127-18-4	5	µg/L		2000 D	290 D	2000 D	120 D	3300 D	Increase
Isopropylbenzene	98-82-8	5	µg/L		0.54 J	0.12 U	0.39 J	0.12 U	0.44 U	Inconclusive
sec-Butylbenzene	135-98-8	5	µg/L		0.13 U	0.13 U	0.35 J	0.13 U	0.44 U	Inconclusive
4-Isopropyltoluene	99-87-6	5	µg/L		0.13 U	0.13 U	0.43 J	0.12 U	0.49 U	Inconclusive
Naphthalene	91-20-3	10	µg/L		0.10 U	0.10 U	0.10 U	1.4	0.34 U	Inconclusive
1,2,3-Trichlorobenzene	87-61-6	5	µg/L		0.10 U	0.10 U	0.10 U	0.10 U	0.45 U	Inconclusive
MW-3A										
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID	8/4/05	4/20/06	7/20/06	10/10/06	1/10/07	Concentration Trend
					Baseline	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
					Sampling Date Sampling Type	Post-Inj	Post-Inj	Post-Inj	Post-Inj	
Bromomethane	74-83-9	5	µg/L		0.18 U	0.18 U	0.18 U	0.52 JB	0.41 U	Inconclusive
Acetone	67-64-1	50	µg/L		1.6 U	1.6 U	1.6 U	64 B	2.3 U	Inconclusive
Carbon Tetrachloride	56-23-5	5	µg/L		1.6 U	1.6 U	1.6 U	0.42 J	1.1 U	Inconclusive
cis-1,2-Dichloroethene	156-59-2	5	µg/L		12	4.5	1.9	0.09 U	1.9 J	Decrease
Chloroform	67-66-3	7	µg/L		1.6 U	1.6 U	1.6 U	5.5	0.33 U	Inconclusive
Trichloroethene	79-01-6	5	µg/L		2.9	4.6	2.3	0.12 U	1.2 J	Inconclusive
Tetrachloroethene	127-18-4	5	µg/L		10	12	13	0.75 J	9.6	Inconclusive
Bromoform	75-25-2	50	µg/L		0.09 U	0.09 U	0.09 U	13	0.32 U	Inconclusive
1,3-Dichlorobenzene	541-73-1	3	µg/L		0.1 U	0.1 U	0.63 J	0.1 U	0.5 U	Inconclusive

TABLE 4-1

National Heatset Printing Company
Farmingdale, New York
Site #1-52-140

Summary of Groundwater VOC Sampling Results and Concentration Trends

MW-9														
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID	8/4/05	4/19/06		7/20/06		10/11/06		1/10/07		Concentration Trend
				Sampling Date	Baseline	Post-Inj	Split	Post-Inj	Split	Post-Inj	Split			
												Sampling Type		
1,1-Dichloroethane	75-34-3	5	µg/L		0.53 J	0.17 U	5 U	0.17 U	5 U	0.19 U	5 U	0.42 U	5 U	Inconclusive
Carbon Tetrachloride	56-23-5	5	µg/L		1.6 U	1.6 U	5 U	1.6 U	5 U	1.9	2 J	1.1 U	5 U	Inconclusive
cis-1,2-Dichloroethene	156-59-2	5	µg/L		0.82 J	0.43 J	5 U	0.09 U	5 U	0.09 U	5 U	0.29 U	5 U	Inconclusive
Chloroform	67-66-3	7	µg/L		0.16 U	0.16 U	5 U	0.54 J	5 U	3	3 J	0.33 U	5 U	Inconclusive
Trichloroethene	79-01-6	5	µg/L		3.6	1.5	5 U	0.61 J	5 U	0.12 U	5 U	0.46 U	5 U	Decrease
Tetrachloroethene	127-18-4	5	µg/L		390 D	13	10	0.41 J	10	1	1 J	8	15	Decrease

MW-10														
Compound	CAS #	TOGS 1.1.1 Allowable Conc ⁽¹⁾	Units	Well ID	8/3/05	4/20/06		7/20/06		10/10/06		1/10/07		Concentration Trend
				Sampling Date	Baseline	Post-Inj	Split	Post-Inj	Split	Post-Inj	Split			
												Sampling Type		
Acetone	67-64-1	50	µg/L		1.6 U	5 U	68	170 B	1.6 U	5 U	2.3 U	6	Inconclusive	
2-Butanone	78-93-3	50	µg/L		0.23 U	5 U	3.7 J	1.2 U	0.23 U	5 U	1.1 U	5 U	Inconclusive	
Carbon Tetrachloride	56-23-5	5	µg/L		0.9 J	5 U	0.78 U	0.78 U	0.16 U	5 U	1.1 U	5 U	Inconclusive	
cis-1,2-Dichloroethene	156-59-2	5	µg/L		30 D	54	0.46 U	0.46 U	0.09 U	5 U	0.29 U	5 U	Decrease	
Chloroform	67-66-3	7	µg/L		2	5 U	23	30	0.16 U	5 U	0.33 U	5 U	Inconclusive	
1,1,1-Trichloroethane	71-55-6	5	µg/L		1.7	5 U	0.81 U	0.81 U	0.16 U	5 U	0.32 U	5 U	Decrease	
Trichloroethene	79-01-6	5	µg/L		26 D	49	0.58 U	0.58 U	0.12 U	5 U	0.46 U	5 U	Decrease	
4-Methyl-2-Pentanone	108-10-1	NA	µg/L		0.46 U	5 U	8.2 J	2.3 U	0.46 U	5 U	1.6 U	5 U	Inconclusive	
Tetrachloroethene	127-18-4	5	µg/L		2000 D	4100 D	0.61 U	0.61 U	1.2	2 J	2.1 J	5	Decrease	
sec-Butylbenzene	135-98-8	5	µg/L		2.4	5 U	0.64 U	0.64 U	0.13 U	5 U	0.44 U	5 U	Decrease	
Naphthalene	91-20-3	10	µg/L		0.52 J	5 U	2.3 J	0.48 U	0.1 U	5 U	0.34 U	5	Inconclusive	

Notes

- (1) Table 1 of NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*, June 1998, and TOGS 1.1.1 Addendum, April, 2000.
- (2) Ground water samples collected by EnviroTrac and analyzed by ChemTech. Split samples collected by O'Brien & Gere and analyzed by Milkem.
- (3) Analytical data presented on this table have not been validated. Data in **bold** means the concentration exceeds TOGS 1.1.1 Allowable Concentration.
- (4) Laboratory data qualifiers:

U = The compound was not detected at the indicated concentration.

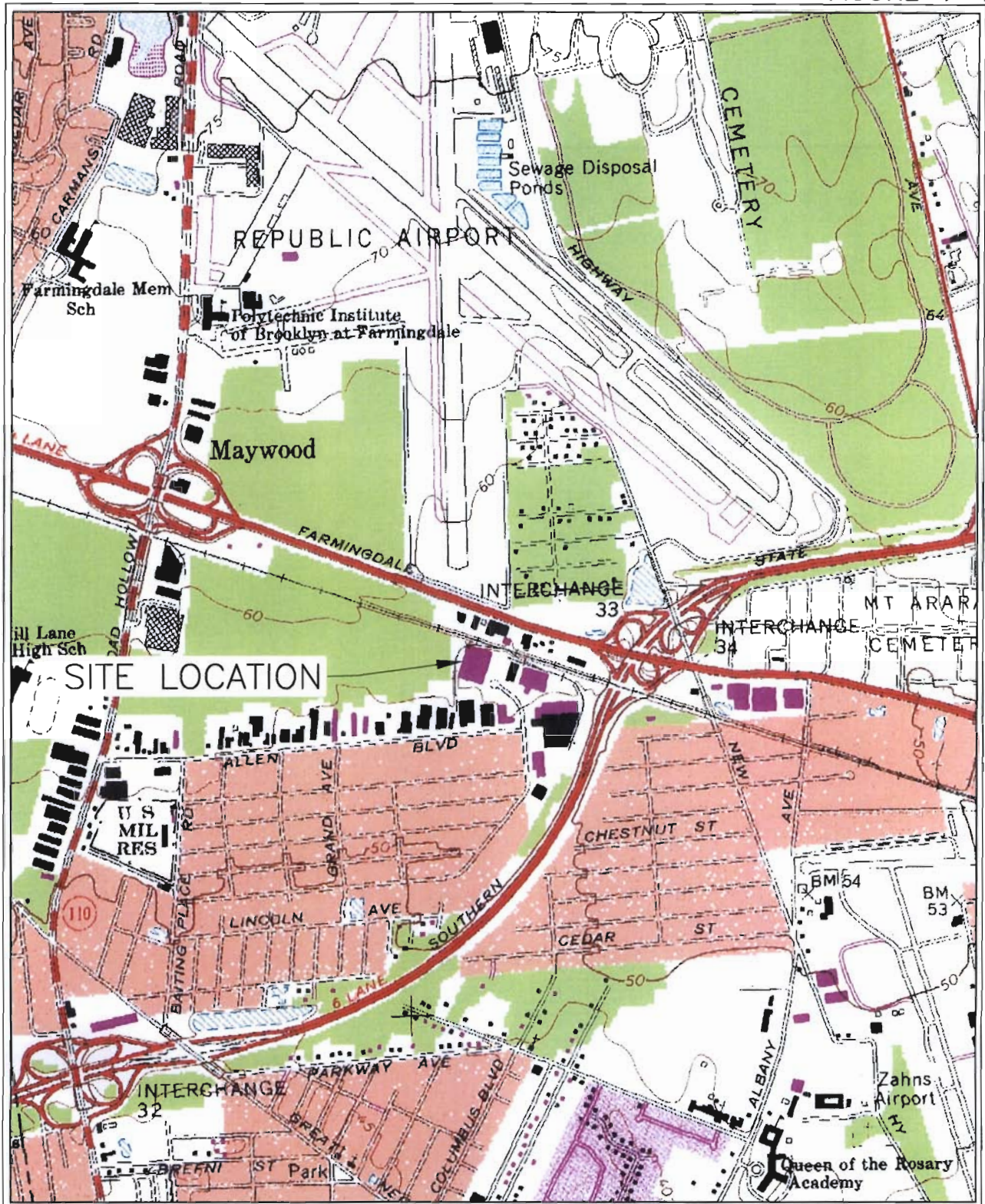
J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.

The concentration given is an approximate value.

D = Sample diluted prior to analysis.

B = The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.





SOURCE: U.S.G.S N.Y.S. QUADRANGLE MAP

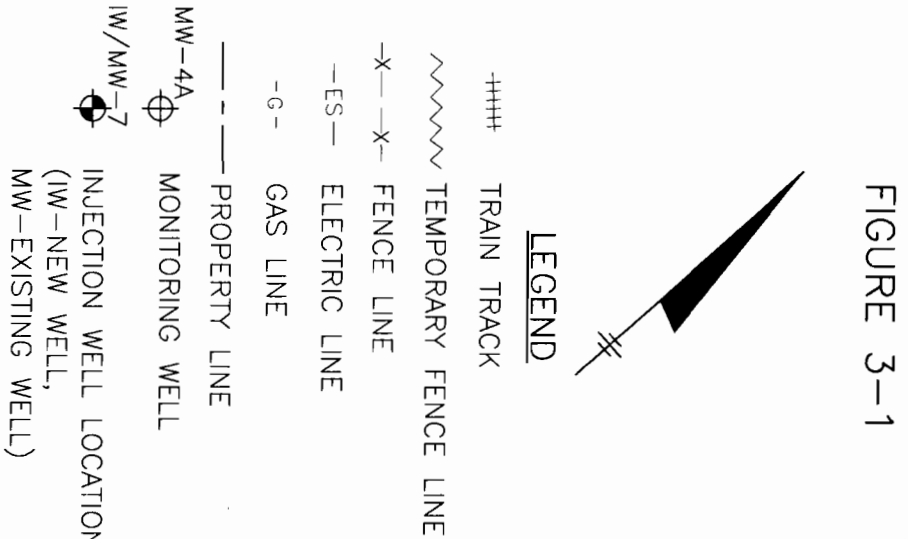
NATIONAL HEATSET PRINTING
FARMINGDALE, NEW YORK
SITE #1-52-140

SITE LOCATION MAP

10653.35518.010
JUNE 2007

NOT TO SCALE





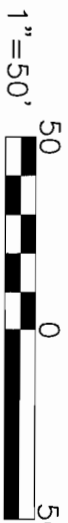
NOTES:

1. PERMANGANATE INJECTION EQUIPMENT LOCATIONS ARE ESTIMATED AS SHOWN.

2. FIGURE DEVELOPED BY SHAW ENVIRONMENTAL, INC. 8/8/02) AND REVISED BY O'BRIEN & GERRE ENG. INC.

NATIONAL HEATSET PRINTING
FARMINGDALE, NEW YORK
SITE #1-52-140

PERMANGANATE INJECTION EQUIPMENT AND WELL LOCATIONS



FILE NO. 10653.35518.006
JUNE 2007



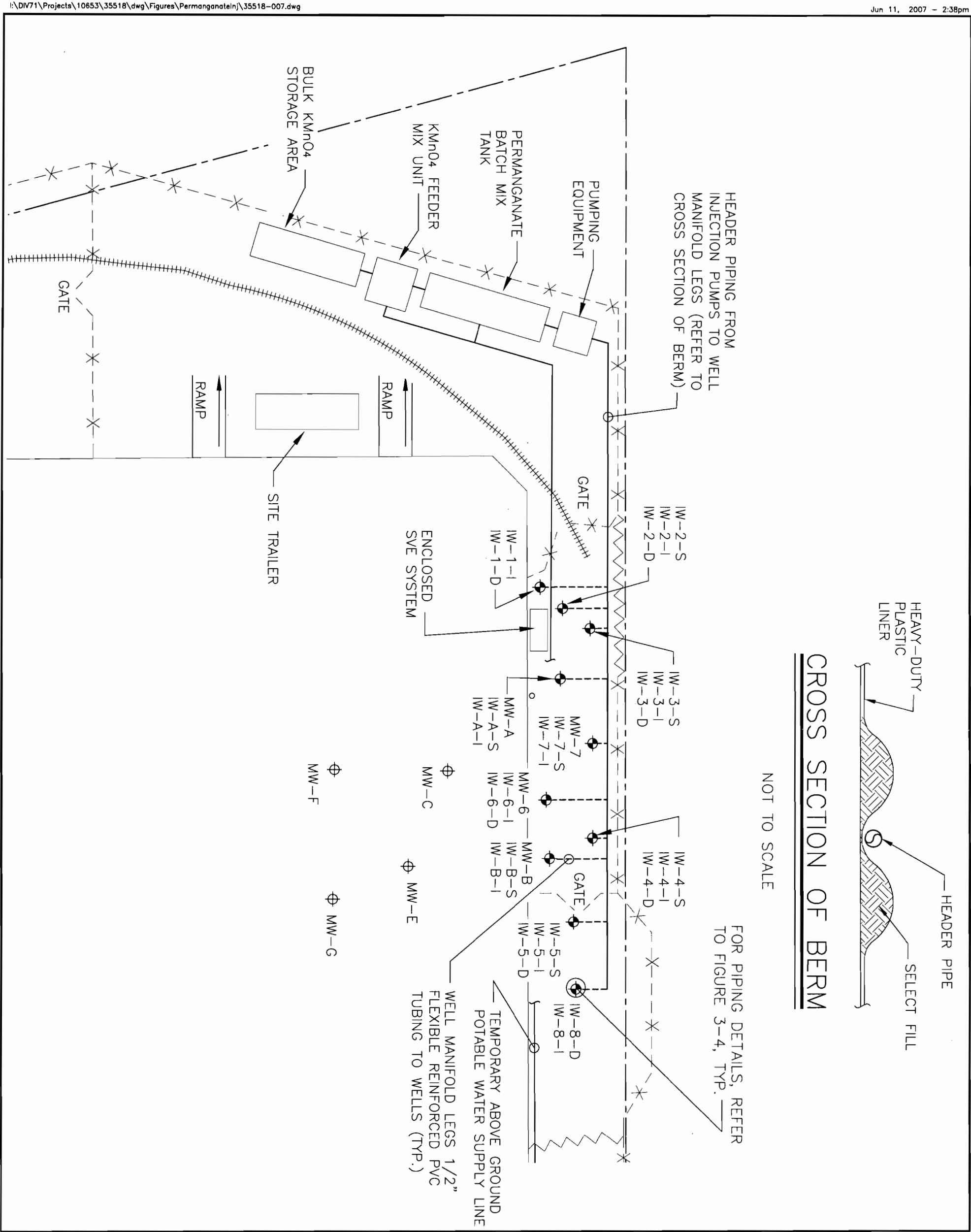
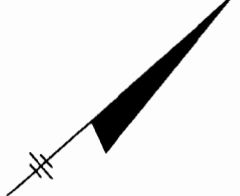


FIGURE 3-2



LEGEND

- ++++ TRAIN TRACK
- ~~~~~ TEMPORARY FENCE LINE
- X--X- FENCE LINE
- ES- ELECTRIC LINE
- G- GAS LINE
- PROPERTY LINE
- MW-4A MONITORING WELL
- INJECTION WELL LOCATION (IW-NEW WELL, MW-EXISTING WELL)

NOTES:

1. PERMANGANATE INJECTION EQUIPMENT LOCATIONS ARE ESTIMATED AS SHOWN.
2. FIGURE DEVELOPED BY SHAW ENVIRONMENTAL, INC. (8/8/02) AND REVISED BY O'BRIEN & GERE ENG. INC.

NATIONAL HEATSET PRINTING
FARMINGDALE, NEW YORK
SITE #1-52-140

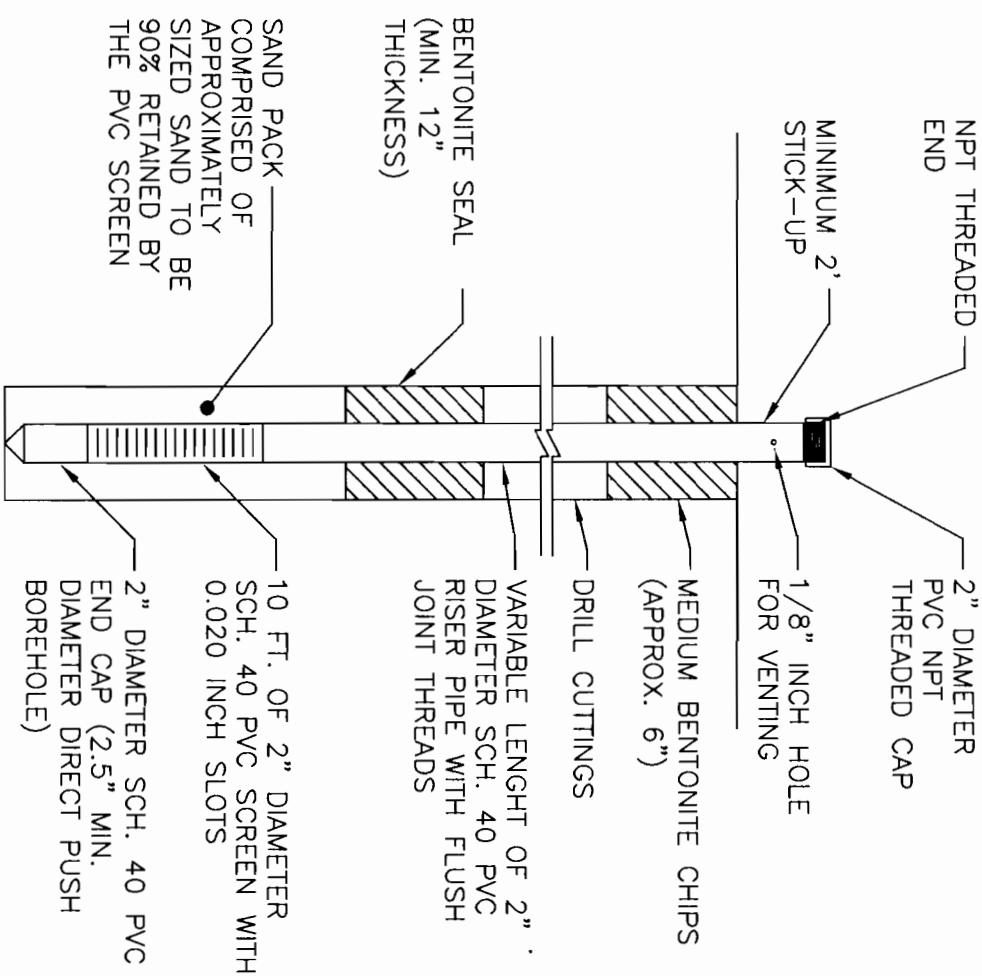
PERMANGANATE
INJECTION WELLS
PIPING PLAN



FILE NO. 10653.35518.007
JUNE 2007



FIGURE 3-3



TYPICAL
INJECTION WELL DETAILS
NOT TO SCALE

NOTE

FIGURE DEVELOPED BY SHAW ENVIRONMENTAL, INC. (2002) AND REVISED BY O'BRIEN & GERE ENG. INC.

NATIONAL HEATSET PRINTING
FARMINGDALE, NEW YORK
SITE #1-52-140

TYPICAL PERMANGANATE
INJECTION WELL
DETAILS

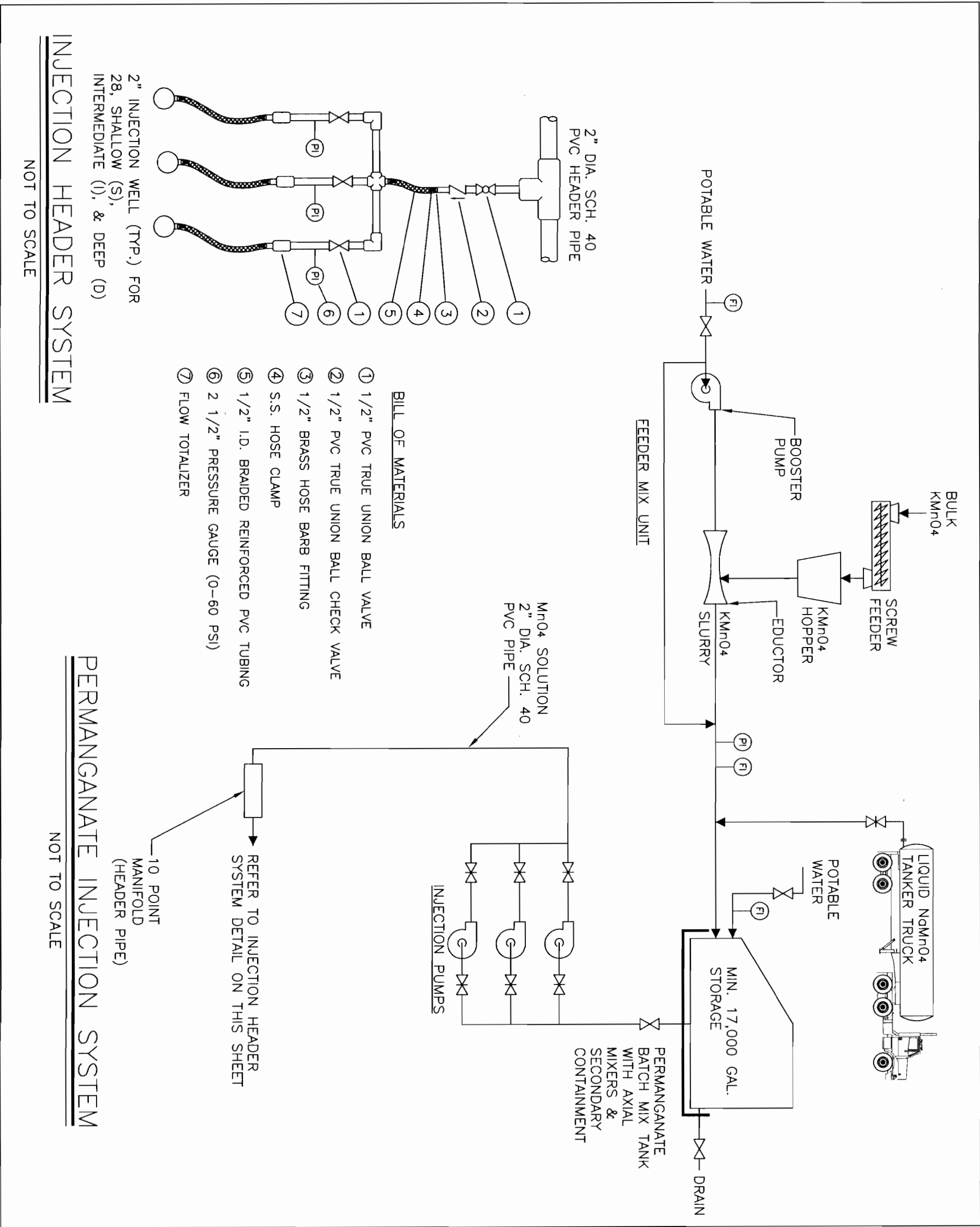


FIGURE 3-4

LEGEND

- (FI) FLOW INDICATOR
- (PI) PRESSURE INDICATOR

NOTE

FIGURE DEVELOPED BY SHAW ENVIRONMENTAL, INC. (2002) AND REVISED BY O'BRIEN & GERE ENG. INC.

NATIONAL HEATSET PRINTING
FARMINGDALE, NEW YORK
SITE #1-52-140

PERMANGANATE
INJECTION SYSTEM

FILE NO. 10653.35518.009
JUNE 2007



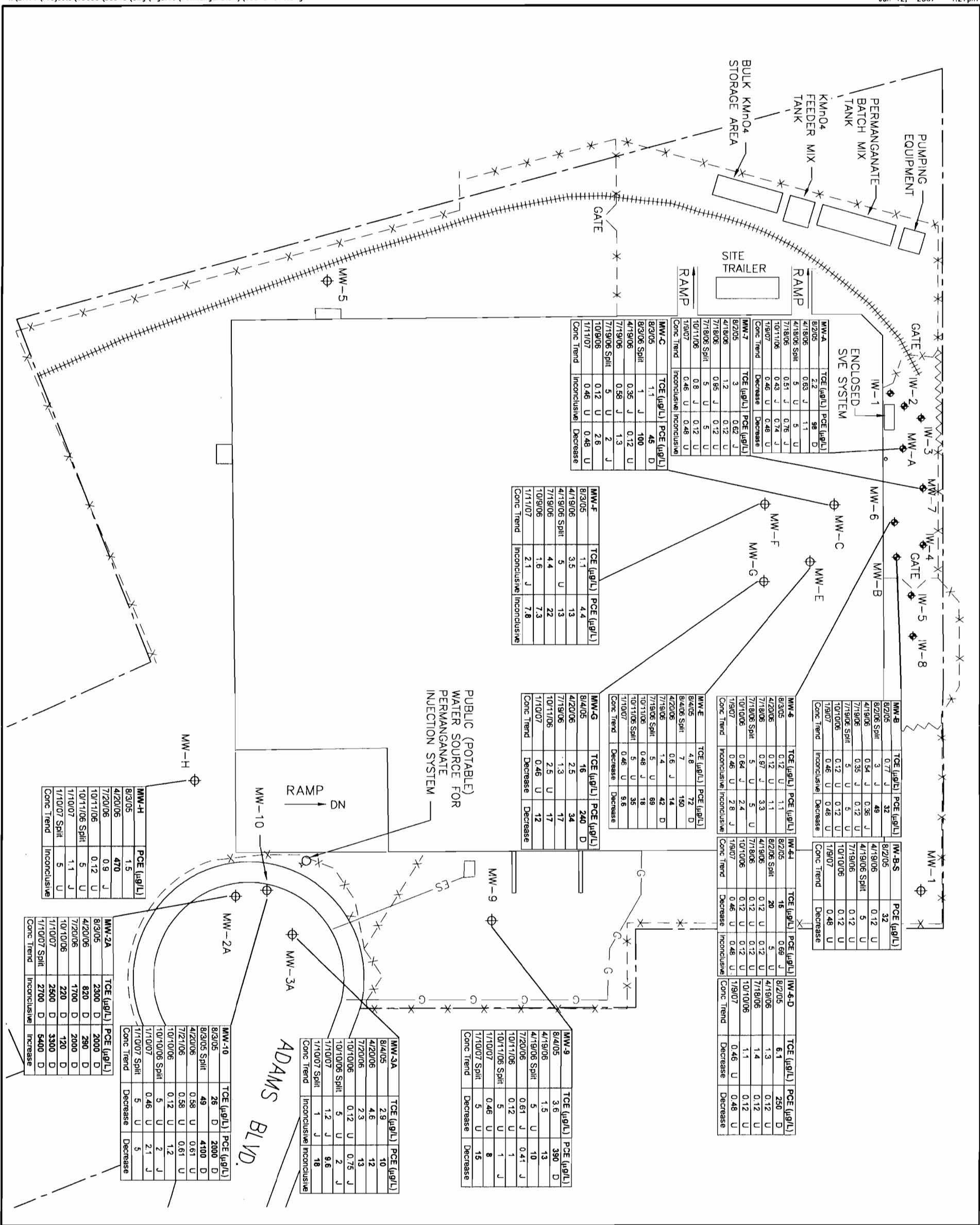
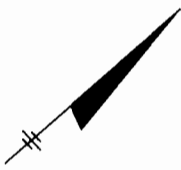


FIGURE 4-1



LEGEND

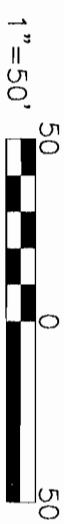
- +++++ TRAIN TRACK
- ~~~~~ TEMPORARY FENCE LINE
- X--X- FENCE LINE
- ES- ELECTRIC LINE
- G- GAS LINE
- PROPERTY LINE
- ⊕ MW-4A MONITORING WELL
- ⊙ INJECTION WELL LOCATION (IW-NEW WELL, MW-EXISTING WELL)

NOTES:

- PERMANGANATE INJECTION EQUIPMENT LOCATIONS ARE ESTIMATED AS SHOWN.
- FIGURE DEVELOPED BY SHAW ENVIRONMENTAL, INC. (8/8/02) AND REVISED BY O'BRIEN & GERE ENG. INC.
- DATA IN BOLD INDICATES CONCENTRATION EXCEEDS TOGS 1.1.1 VALUE.

NATIONAL HEATSET PRINTING
FARMINGDALE, NEW YORK
SITE #1-52-140

GROUNDWATER
ANALYTICAL RESULTS
FOR TRICHLOROETHENE
& TETRACHLOROETHENE



APPENDIX A

**Contract Bid Proposed Project
Budget**

b7d

New York State Department of Environmental Conservation
Contract Number D005272, NYS Site Number 1-52-140

LUMP SUM ITEMS

Payment Item Number	Description	Estimated Quantity	Unit or Lump Sum Price		Total Amount (\$)
			Words	Figures	
1	Plans, Permits and Mobilization	LS	Ninety-eight Thousand	\$ 98,000	\$ 98,000
2	Injection Well Installation	LS	Ninety-seven Thousand Five Hundred	\$ 97,400.	\$ 97,400
3	Mechanical Installation	LS	Eighty-four Thousand	\$ 84,000	\$ 84,000
4	Electrical Components and Installation	LS	Forty-nine Thousand Five Hundred	\$ 49,500	\$ 49,500
5	Supply and install permanganate injection system, not including items 3 through 6	LS	Eighty-seven Thousand Five Hundred	\$ 87,500	\$ 87,500
6	Operation and Maintenance of Injection System	LS	One Hundred Forty-two Thousand Three Hundred	\$ 142,300	\$ 142,300
7	Sampling and Analysis	LS	Forty-four Thousand Five Hundred	\$ 44,500	\$ 44,500
8	Decommission, Demobilization and Site Restoration	LS	Seventeen Thousand Six Hundred	\$ 17,600	\$ 17,600

New York State Department of Environmental Conservation

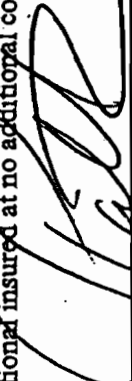
Contract Number D005272, NYS Site Number 1-52-140

UNIT PRICE ITEMS

Payment Item Number	Description	Estimated Quantity	Unit or Lump Sum Price		Total Amount (\$)
			Words	Figures	
1	Sodium Permanganate supplied in a 40% solution	114,700 LB (solution)	Three Dollars and Thirty cents	\$ 3.30	\$ 378,510
2	Potassium Permanganate supply	25,000 LB (dry wt)	Two Dollars and Twenty Cents	\$ 2.20	\$ 55,000
3	Operation of Portable Injection Pump	20 Days	Two Thousand	\$ 2000	\$ 40,000
Grand Total Bid: \$ <u>One Million Ninety Four Thousand Three Hundred Ten Dollars</u>					
(Price in Words)					
Grand Total Bid: \$ <u>1,094,310</u>					
(Price in figures)					

New York State Department of Environmental Conservation

Contract Number D005272, NYS Site Number 1-52-140

Item No.	Item Description	Unit	Estimated Quantity	Unit or Lump Sum Price		Total Amount (\$)
				Words	Figures	
	Pollution Liability Insurance	LS	1	Twenty Thousand	20,000	20,000
	This item is not to be calculated in the base Bid for the project. Contractor is referred to Article 4 of the General Conditions in the Contract Documents. The limits for Pollution Liability Insurance will be the same as defined in Article 4 of the General Conditions. After opening of bids, Department will determine if it is in Department's best interest to have Contractor obtain an additional \$4,000,000 Pollution Liability Insurance on a site specific basis, and if so, Contractor will be paid separately at the actual documented cost to obtain this additional insurance. The Bidder is required to fill in the above price if it can obtain site-specific Pollution Liability Insurance. This Bid amount will be the upper limit for payment of this item. The Department is to be listed on the Bidder's Company Policy as an additional insured at no additional cost to the Department.					
	 Contract Authorized Representative ENVIRONMENTAL Ltd. Contract Name					
	12/23/24 Date					

Contract Modification Letter



O'BRIEN & GERE

January 17, 2006

Mr. K. Murphy
EnviroTrac Ltd
80 B Air Park Drive
Ronkonkoma, NY 11779

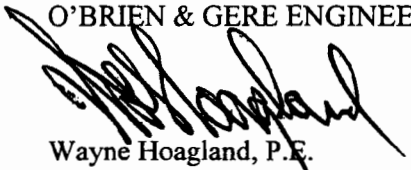
Re: National Heatset Printing –
Permanganate injection System
Modification No. 001
File: 10653/35518 #2

Dear Mr. Murphy:

It has been determined that certain revisions are required to the scope of work for Contract D005272 which eliminates the requirement for providing the cost of electrical power to the office trailer and operation of the portable injection pump. This change is described in the attached Modification No.001. This is to confirm our previous discussions that the value of this change is a \$(40,530.00) credit to the Contract. Based on this agreement on pricing, the work in this modification will be deleted and a change order will incorporate the work into the contract.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.


Wayne Hoagland, P.E.
Construction Engineering Manager

cc: J. Dyber PE- NYSDEC
M. Dent PE –O'Brien & Gere
E. Rahn - O'Brien & Gere

I:\DIV71\Projects\10653\35518\1_agree\Change Orders - Permanganate Proj\Letter to Envirotrac Mod 001.doc

CHANGE ORDER NO. 1
PAGE 1

JOB NO. 35518
January 17, 2006

PROJECT: NATIONAL HEATSET PRINTING – PERMANGANATE INJECTION
SYSTEM

OWNER: NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION

CONTRACTOR: ENVIROTRAC LTD.

ENGINEER: O'BRIEN & GERE ENGINEERS, INC.
5000 BRITTONFIELD PLAZA
PO BOX
SYRACUSE, NY 13221

Pursuant to the terms of Section VIII General Provisions of the above-referenced Contract, the Contractor is hereby authorized and directed to proceed with the extra work as described below. The Contractor agrees to furnish all labor, material and equipment needed to accomplish these changes in accordance with the applicable portions of the Contract Documents and/or as required in the Modifications.

Modification No. 1

Requirement:

In this modification payment for electrical service for the site office trailer and operation of the portable injection pump are removed from the project scope

Reason:

The electrical energy cost for the office trailer was paid for under another Contract and the portable injection pump will not be operated.

Cost _____ (DEDUCT) _____ \$(40,530.00)

TOTAL COST/CHANGE ORDER NO. (1) _____ (DEDUCT) _____ \$(40,530.00)

TIME EXTENSION _____ 0 CALENDAR DAYS

It is mutually agreed that the lump sum price or prices listed above will be accepted by the Contractor as the sole basis for payment for all work as indicated, including all associated overhead and profit for the work, or as credits to the contract amount if deletions of work are included.

This work must be performed in strict accordance with the terms of the Contract except as herein modified or hereinbefore modified by a previous change order. It is further understood and agreed that, unless otherwise expressly stated herein, the work herein authorized will not extend the time of completion of the work to be performed under the Contract and that the amount of this change order

includes full payment or credit, as the case may be, for the extra or deleted work covered hereby, and any damage or expense caused the Contractor by any delays to or interference with other work to be performed under the Contract resulting from or on account of said extra or deleted work.

ACCEPTED BY:

ENVIROTRAC LTD

By: _____ (SIGN),

(PRINT)

Title: _____

Date: _____

RECOMMENDED BY:

O'BRIEN & GERE ENGINEERS, INC.

By: _____ (SIGN),

Wayne G. Hoagland

Title: Construction Eng. Manager

Date: _____

AUTHORIZED BY:

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

By: _____ (SIGN),

(PRINT)

Title: _____

Date: _____

O'BRIEN & GERE ENGINEERS, INC.

MODIFICATION

OWNER: NYSDEC

PROJECT: NATIONAL HEATSET PRINTING: Permanganate Injection System

CONTRACT NO.: D005272

CONTRACTOR: EnviroTrac

O'BRIEN & GERE

PROJECT NO.: 10653/35518 #2

MODIFICATION NO.: 001-

GENERAL DESCRIPTION OF MODIFICATION:

In this modification payment for electrical service for the site office trailer and operation of the portable injection pump removed from the project scope

REASON FOR MODIFICATION:

Power for the trailer was paid for by another contract with NYSDEC and the portable injection pump will not be used.

DATE OF NOTIFICATION TO CONSTRUCTION
FOR PROPOSED MODIFICATION:

1/17/06

NOTIFIED BY:

OWNER

CONTRACTOR

CONSTRUCTION CEM

X ENGINEER

LEAD ENGINEER FOR COORDINATION
OF MODIFICATION:

Marc Dent

DATE OF NOTICE TO PROCEED RECEIVED
BY ENGINEERING FOR PREPARATION
OF MODIFICATION DOCUMENTS:

N/A

MODIFICATIONS TO CONTRACT DOCUMENTS: See attached

O'BRIEN & GERE ENGINEERS, INC.

MODIFICATION

ENGINEER'S CONSTRUCTION COST ESTIMATE:

FINAL APPROVAL OF MODIFICATION
DOCUMENTS:

Civil:	<u>Marc Dent</u> (Name)	<u></u> (Signature)	<u>1/17/06</u> (Date)
Architectural:	<u></u> (Name)	<u></u> (Signature)	<u></u> (Date)
Structural:	<u></u> (Name)	<u></u> (Signature)	<u></u> (Date)
Process/Mech:	<u></u> (Name)	<u></u> (Signature)	<u></u> (Date)
Elec/I&C:	<u></u> (Name)	<u></u> (Signature)	<u></u> (Date)
HVAC/Pb:	<u></u> (Name)	<u></u> (Signature)	<u></u> (Date)

TRANSMITTED TO CONSTRUCTION BY: Marc Dent

DATE TRANSMITTED: 1/17/2006

O'BRIEN & GERE ENGINEERS, INC.

MODIFICATION

PROJECT: NATIONAL HEATSET PRINTING: Permanganate Injection System

MODIFICATION NO: 001

DATE: 1/17/2006

MODIFICATIONS TO CONTRACT DOCUMENTS:

In the Contract Documents, Section V, Bid, V-3 UNIT PRICE ITEMS, **DELETE**, *Payment Item Number 3* OPERATION OF PORTABLE INJECTION PUMP.

In the Contract Documents, Section X, Standard Specifications, Section 1590 Temporary Facilities, 1.06 D **DELETE** "CONTRACTOR shall furnish and pay for all fuel and utilities" **AND SUBSTITUTE THEREFOR** the following: "CONTRACTOR shall furnish and pay for all fuel and utilities except electrical power to the office trailer."

In the Contract Specifications, Section XII Measurement for Payment, **DELETE** 3.03 UNIT PRICE BID ITEM 3 – OPERATION OF PORTABLE INJECTION PUMP.

Project Budget Breakdown

National Heatset
Site # 1-52-140
CONTRACT NO. D005272

Period Ending 12/25/05

SCHEDULE OF VALUES

TO BE COMPLETED BY CONTRACTOR AND APPROVED BY CM

DESCRIPTION (1)	ESTIMATED COST (2)	THIS PERIOD		TOTAL TO DATE	
		% COMPLETE (3)	VALUE (4)	% COMPLETE (5)	VALUE (6)
1 - MOBILIZATION					
INSURANCE AND BONDS	50000.00	0%	0.00	100%	50000.00
PRE-CONSTRUCTION SUBMITTALS	20000.00	0%	0.00	100%	20000.00
FIELD OFFICES/SUPPORT AREAS	11000.00	0%	0.00	100%	11000.00
MOBILIZATION EQUIPMENT/PERSONELL	15000.00	0%	0.00	100%	15000.00
EQUIPMENT/MECHANICAL SUBMITTALS	2000.00	0%	0.00	100%	2000.00
TOTAL FOR MOBILIZATION	\$ 98,000.00	0%	\$ -	100%	\$ 98,000.00
2 - INJECTION WELL INSTALLATION					
WELL INSTALLATION	82400.00	0%	0.00	100%	82400.00
WELL DEVELOPMENT	5000.00	0%	0.00	100%	5000.00
UPGRADE EXISTING WELLS	10000.00	0%	0.00	100%	10000.00
TOTAL FOR INJECTION WELL INSTALL	\$ 97,400.00	0%	\$ -	100%	\$ 97,400.00
3 - MECHANICAL INSTALLATION					
CONVEYANCE PIPING	40000.00	0%	0.00	100%	40000.00
INJECTION WELL CONNECTIONS	35000.00	0%	0.00	100%	35000.00
INSTALLATION OF WATER SUPPLY LINE	5000.00	0%	0.00	100%	5000.00
MANIFOLD CONNECTIONS	4000.00	0%	0.00	100%	4000.00
TOTAL FOR MECHANICAL INSTALLATION	\$ 84,000.00	0%	\$ -	100%	\$ 84,000.00
4 - ELECTRICAL COMPONENTS AND INSTALLATION					
ELECTRICAL SERVICE INSTALLATION	40000.00	0%	0.00	100%	40000.00
ELECTRICAL EQUIPMENT TESTING AND START	9500.00	0%	0.00	100%	9500.00
TOTAL FOR ELECTRICAL COMPONENTS/INSTALLATION	\$ 49,500.00	0%	\$ -	100%	\$ 49,500.00
5 - SUPPLY AND INSTALL PERMANGANATE SYSTEM					
SYSTEM DELIVERY	77500.00	0%	0.00	100%	77500.00
START-UP	10000.00	0%	0.00	100%	10000.00
TOTAL FOR SUPPLY AND INSTALL PERMANGANATE SYSTEM	\$ 87,500.00	0%	\$ -	100%	\$ 87,500.00
6 - SYSTEM OPERATION AND MAINTENANCE					
INJECTION #1	71150.00	0%	0.00	100%	71150.00
INJECTION #2	71150.00	0%	0.00	100%	71150.00
TOTAL FOR SYSTEM OPERATION AND MAINTENANCE	\$ 142,300.00	0%	\$ -	100%	\$ 142,300.00
6 - SAMPLING AND ANALYSIS					
BASELINE SAMPLING	20000.00	0%	0.00	100%	20000.00
INJECTION PROCESS MONITORING	9500.00	0%	0.00	100%	9500.00
1ST QUARTERLY SAMPLING	5000.00	0%	0.00	0%	0.00
2ND QUARTERLY SAMPLING	5000.00	0%	0.00	0%	0.00
3RD QUARTERLY SAMPLING	5000.00	0%	0.00	0%	0.00
TOTAL FOR SAMPLING AND ANALYSIS	\$ 44,500.00	0%	0.00	56%	\$ 29,500.00
7- DEMOBILIZATION	17600.00	100%	17600.00	100%	17600.00
TOTAL FOR DEMOBILIZATION	\$ 17,600.00	100%	\$ 17,600.00	100%	\$ 17,600.00
UNIT PRICES					
1-NaMnO4 (LBS)	378510.00	0%	0.00	100%	378510.00
2-KMnO4 (LBS)	55000.00	0%	0.00	100%	55000.00
3-PORTABLE INJECTION PUMP (20 DAYS)	40000.00	0%	0.00	0%	0.00
TOTAL FOR UNIT PRICES	\$ 473,510.00	0%	\$ -	92%	\$ 433,510.00
CONTRACT TOTALS	\$ 1,094,310.00	2%	\$ 17,600.00	98%	\$ 1,039,310.00

**Pre-Construction Meeting Minutes
& Agenda**

**National Heatset Printing Co.
Permanganate Injection Contract (D005272)
Pre-Construction Meeting Minutes
Albany, NY**

The pre-construction meeting began at 1 p.m. on May 20, 2005 at New York State Department of Environmental Conservation (NYSDEC) offices in Albany, N.Y.

Attendees: See attached sign in sheet
Handouts: See attached meeting agenda

Following the introductions, Mr. Dyber reviewed the topics as presented in the meeting agenda. Additional items that were discussed in the meeting include the following:

Section III – Requirements Prior to Commencing Physical Construction

- B. Kevin Murphy indicated that the revised Work Plan, Health and Safety Plan, Sampling Plan, and QA/QC Plan would be submitted to O'Brien & Gere by May 27, 2005.
- C. In addition to the submittals listed in the agenda, a schedule of submittals is required from EnviroTrac prior to commencing physical construction.

Section V – M/WBE Program

- Mr. Vicente Alfonso discussed the M/WBE requirements and submittals for this project.
- NYSDEC is waiting for the NYS Department of Economic Development to approve one of the subcontractors (CARUS) as a WBE.
- Within 30 days of the Notice to Proceed, Mr. Alfonso requires signed subcontractor agreements with the costs, scope of work, and signatures of the prime contractor and the subcontractor.
- During the project, Mr. Alfonso requires copies of the purchase orders and signed checks showing payments to the subcontractors.
- Starting three months after the start of the fiscal year (April 1) and every three months thereafter, quarterly progress reports must be provided to Mr. Alfonso regarding activities and payment amounts. These quarterly reports must be provided whether or not activities have been conducted.
- EnviroTrac was provided quarterly update forms and the requirements for "Good Faith Efforts" regarding M/WBEs at the end of the meeting.
- Mr. Alfonso must be notified if any problems occur with an M/WBE during the project. The M/WBEs must not be released/terminated until Mr. Alfonso has had a chance to resolve any issues.

Section VII – General Conditions – Article 5

- D. The weekly progress meetings will be held at the site on Thursdays (not Wednesdays) at 1 p.m.

Section X – Closeout

- A. This section of the agenda shall be revised as follows: At substantial completion, the Engineer will perform an inspection and create a punchlist. The Engineer will then assign values to the punchlist. The amount of retainage will be reduced to the twice the cost of the punchlist. If the retainage before substantial completion is less than twice the value of the punch list, substantial completion has not been reached.

General Discussions

- Mr. Dyber indicated that Attachment A in Section VI of the Contract Documents provides additional substantial completion times. If any of those substantial completion times are not met, liquidated damages may be assessed.
- Mr. Dyber stated that although the contract documents state that the contract time begins on the date of the Notice to Proceed, the Office of State Comptroller considers the contract start date to be the date when the State Comptroller approved the project, which was April 28, 2005. Therefore, it is important that the Contractor satisfy the NYSDEC's prerequisites for issuing a Notice to Proceed so that the project will be completed before the Comptroller's contract end date.
- EnviroTrac will send Mr. Dent a copy of the letter to Mr. Alfonso listing the M/WBE subcontractors and the approval letter from NYSDEC.
- Mr. Murphy indicated that he expects to start drilling the injection wells in mid June. Drilling activities should last approximately four weeks. The on-site project activities should be completed in 60 days.
- EnviroTrac's supplier, CARUS, will be providing the permanganate, mixing and storage containers and pumping equipment.
- EnviroTrac's office is only 15 minutes from the Site. If there's a chemical spill or emergency, EnviroTrac can respond or get a contractor to respond quickly.
- Mr. Murphy will be the main contract for the project and will be assigning site superintendants for the day-to-day activities.
- EnviroTrac is conducting another permanganate injection project for NYSDEC at a site near the National Heatset Site. They are already conducting drilling activities so our project should benefit from the experience that they obtain at this project.

Website: www.dec.state.ny.us

[illegible]



National Heatset Permanganate Injection Contract (D005539)
Preconstruction Meeting Agenda
May 20, 2005

I. Introductions and Sign-In Sheet

A. NYSDEC

1. Jeffrey Dyber, Project Manager: (518) 402-9621
2. Guy Bobersky, Section Chief: (518) 402-9621
3. Vicente Alfonso, M/WBE Program: (518) 402-9311

B. O'Brien & Gere

1. Marc Dent, Project Manager: (315) 437-6100
2. Garry Ellingworth, Construction Inspector: (315) 437-6100
3. Wayne Hoagland, Contract Administrator: (315) 437-6100

C. Envirotrac

1. Kevin Murphy, Project Manager: (631) 471-1500

II. Responsibilities and Lines of Communication

- A. O'Brien & Gere will be the "Engineer" and "State's Representative" at this site. These two terms are interchangeable and their duties are listed in the Contract Documents. They will provide day to day oversight of the project.
- B. *Contractor's site superintendent* - representative authorized to act on behalf of Contractor. Must be on-site or designate suitable alternate. (Article 5.2 of Section VIII)
- C. As O'Brien & Gere is representing the State in this project, Envirotrac shall communicate with the State through O'Brien & Gere. Envirotrac shall submit all field samples, written communication (including requests for interpretation) and submittals to O'Brien & Gere. Envirotrac shall copy NYSDEC project manager on all written communication.
- D. The NYSDEC expects that O'Brien & Gere and Envirotrac will make all

reasonable efforts to resolve differences. NYSDEC project manager will resolve conflicts between Engineer and Contractor.

- E. *Department's designated representative* - responsible for resolving disputes between Contractor and Department's project manager. The designated representative is Dr. Chittibabu Vasudevan, Director of Remedial Bureau A.

III. Requirements Prior to Commencing Physical Construction

- A. Do not begin construction before NYSDEC issues Notice to Proceed (NTP).
- B. NYSDEC must accept Work Plan, Health and Safety Plan, Sampling Plan, QA/QC Plan and schedule before NTP will be issued.
- C. Submittals
 - 1. Decontamination submittals listed in Section 01036, Paragraph 1.03.
 - 2. Environmental Protection submittals listed in Section 01110, Paragraph 1.04.
 - 3. Transportation Plan as per Section 02223, Paragraph 1.02.
 - 4. Waste Management Plan as per Section 02227, Paragraph 1.02.
 - 5. List of subcontractors and suppliers.

IV. Additional Submittals

- A. Survey as per Section 01051.
- B. Backfill submittals listed in Section 02110, Paragraph 2.2.1.
- C. Fence submittals listed in Section 02444, Paragraph 1.04.
- D. Injection well submittals listed in Section 02520, Paragraph 1.07.
- E. Permanganate injection system submittals listed in Section 02590, Paragraph 1.06.
- F. Sampling and analysis submittals listed in Section 02900, Paragraph 1.04.
- G. Permanganate injection system submittals listed in Section 11200, Paragraph 1.02.

- H. Permanganate mix tank submittals listed in Section 11220, Paragraph 1.02.
- I. Piping submittals listed in Section 15000, Paragraph 1.04.
- J. As-built drawings.
- V. M/WBE Program
- VI. Progress Schedules
 - A. First 1 month in detail, balance in summary form.
 - B. Contractor must:
 - 1. Accurately as possible estimate work two weeks into future.
 - 2. Provide reasonably accurate master schedule for the project to be updated as necessary.
 - 3. Provide reasonable explanation for changes in schedule and outline proposed efforts to make up time (if necessary).
 - C. Above requirements are needed for coordination of state and engineer's work force for coverage, along with public relations.
 - D. Major point of discussion at weekly project meetings.
- VII. General Conditions, Article 5
 - A. Contractor must designate off-hours emergency contact who is authorized to act without prior approval of Department.
 - B. Shop drawings must be certified in accordance with 5.25 of the Section VIII.
 - 1. Engineer review time - 14 days.
 - 2. Two reviews only at state's cost.
 - 3. Submit copies concurrently to engineer and Department.
 - C. Submit shop drawings, product data and samples to Engineer for review.
 - D. Weekly progress meetings to be held at site: ~~Wednesdays~~ ^{Thursday} at 1:00 p.m.

VIII. Changes in Work (Articles 9, 10 & 11 of the GCs)

- A. Field Orders - minor changes in work. No increase to contract price or time.
- B. The contract price or contract time cannot increase without an approved change order.
- C. The NYSDEC, OAG and OSC must approve the change order.
- D. Contractor submits proposed change orders to Engineer.
- E. If Engineer and NYSDEC approve, change order is routed through the other agencies. This process may take 90 days or more.

IX. Payments (Article 9, Agreement & Article 13, GCs)

- A. Department's on-site representative or project manager will make measurements for payment.
- B. Envirotrac shall submit all payment requests to O'Brien & Gere on NYSDEC's CAP form. O'Brien & Gere will forward approveable payment requests to the NYSDEC project manager.
- C. Change Orders cannot be shown on payment until approved by Office of State Comptroller.
- D. As-builts must be up to date (art. 5.19 of Section VIII).
- E. Progress schedule must be current (art. 5.6 of Section VIII).

X. Closeout

- A. Substantial completion inspection and punchlist. Contractor may invoice for up to twice the value of the work remaining at this time.
- B. Final inspection.
- C. Department will issue satisfactory completion letter. Contractor can then submit for final payment (retainage release must be on separate CAP). No other costs can be claimed against contract in after retainage release payment.
- D. Satisfy the requirements in Sections VI and 01700.

XI. Disputes

- A. Claims (Article 15) - certification language and time constraints contractor must be aware of.
- B. Contract (Appendix B) outlines steps taken to the CRC and to resolve disputes.

XII. Envirotrac Discusses Implementation of Work

- A. Construction of permanganate injection system.
- B. Spill control and containment.
- C. Other issues.

XIII. Contractor's Activities over Next 2 Weeks

XIV. Open Discussion

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**Pre-Construction Review of
Contractor Plans**





O'BRIEN & GERE

May 16, 2005

Mr. Jeffrey Dyber, PE
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Eastern Remedial Action
625 Broadway
Albany, New York 12233-7015

Re: NYSDEC National Heatset Site
Permanganate Injection Project
Review of Plan Submittals

File: 10653/35518 (#2)

Dear Mr. Dyber:

O'Brien & Gere has reviewed EnviroTrac's plans for the subject project. The plans include the Work Plan, Quality Assurance and Quality Control Plan, Health and Safety Plan and Sampling Plan. The Spill Prevention, Control and Containment, Erosion and Sediment Control and Dust Control Plans were not included. Comments on the plans are as follows:

Work Plan

In general, the plan needs to include more site specific and field work specific details of how the work will be carried out. Preparation of this information, including drawings, as appropriate, will be necessary for execution of the project in the field and should be included in the plan. This will assist in defining any issues prior to starting the work and identify areas that require additional attention. Specific items are outlined below.

- Section 2.0, Background - Sufficient information should be included to identify the proposed groundwater remediation, (i.e. the permanganate injection system and its components).
- Section 5.1, Site Preparation and Layout - A drawing should be included to identify, on a relative basis, the size and location of specific areas including the work area, decon area, access, traffic control, laydown, fence, gates and facilities
- Section 6.3, Site Signs - A layout of the signs proposed should be included
- Section 7.1, Injection Wells - Should include material and size information.
- Section 7.2.2, Injection - This section should identify how the permanganate injection facility will be constructed, tested and operated.
- Section 8.0, Schedule - This section should refer to Figure 2.
- Appendix for Key Personnel - There is no CIH included.





Mr. Jeffrey Dyber, PE
May 16, 2005
Page 2

The plan refers to direction by the Engineer in several places. It should be noted by that O'Brien & Gere, the engineer and representative of NYSDEC, will assist EnviroTrac, in the interest of the project. However, it is EnviroTrac's sole responsibility for layout, planning and means and methods for executing the work in accordance with the Contract Documents. The work plan should reflect that.

Health & Safety Plan

The HASP needs to be expanded to include site specific information related to potential hazards, monitoring, measures to handle emergencies, safety meetings, and work areas. Procedures for dealing with permanganate leak or spill during testing, operation, sampling or handling should be addressed. In Appendix 7, MSDS sheets should be included for all planned activities. A CIH has not been identified but is required for approval of the HASP and QA for safety on the project.

Quality Assurance/Quality Control Plan

The QA/QC Plan is acceptable as a general plan but needs to be expanded with specifics for this project. This should include:

- CQC manager who shall be on-site during the construction.
- Resume and qualifications (demonstrating necessary experience) of CQC manager
- Responsibilities and authorities of each person assigned a CQC function
- Please designate the CQC manager on the organization chart.
- Provide checklists for inspection activities including names and resumes of all personnel involved.
- Testing details, locations, requirements, timing and proposed independent testing laboratories.
- Proposed test-reporting forms.
- A proposed QC daily Report Form.

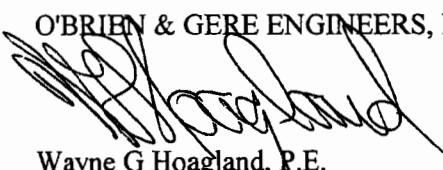
Sampling Plan

The plan needs to include the name, address, contact names and qualifications of the laboratory that you propose to use.

As a general comment, a thorough reading and editing of the plans is appropriate for the purpose of eliminating incorrect references. Should you have any questions concerning these comments please contact the undersigned.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC



Wayne G Hoagland, P.E.
Construction Engineering Manager

cc ~~Marc Dent, P.E. (O'Brien & Gere)~~
Ralph Whedon (O'Brien & Gere)
Kevin Murphy (EnviroTrac)





O'BRIEN & GERE

June 7, 2005

Mr. Jeffrey Dyber, PE
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Eastern Remedial Action
625 Broadway
Albany, NY 12233-7015

Re: NYSDEC National Heatset Printing Site
Permanganate Injection Project
Review of Plan Submittals
Site 1-52-140

File: 10653/35518 (#2)

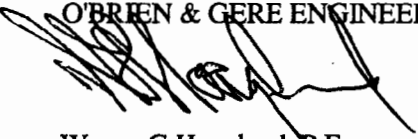
Dear Mr. Dyber:

O'Brien & Gere has reviewed EnviroTrac's plans for the subject project that have been revised based on the previous comments. The plans include the Work Plan, Sampling Plan, Quality Assurance and Quality Control Plan and Health and Safety Plan. The Spill Prevention, Control and Containment, Erosion and Sediment Control and Dust Control Plans were included as portions of the other plans. The plans meet the intent of the specifications except for two remaining issues. The first is that the HASP has not been signed by a CIH and secondly there is no plan for site preparation and layout in the Work Plan. The HASP should be reviewed and signed by a CIH prior to the start of work in accordance with the Contract Specifications. The layout plan could be accomplished on site, at the start of work, with the concurrence of the on site representative.

Should you have any questions please contact the undersigned.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC


Wayne G Hoagland, P.E.
Construction Engineering Manager

cc Marc Dent, P.E. (O'Brien & Gere)
Gary Ellingworth (O'Brien & Gere)
Ralph Whedon (O'Brien & Gere)

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O'BRIEN & GERE'S 60TH ANNIVERSARY



WORK PLAN

**Remediation of National Heatset Printers
1 Adams Boulevard,
Farmingdale, NY**

**Contract No. D005272
Site No. 1-52-140
Suffolk, New York**

Prepared for:

**New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 12233-7010**

Prepared by:

**EnviroTrac Ltd.
80 B Air Park Drive,
Ronkonkoma, NY 11779**

May 2005

Workplan May 2005

EnviroTrac
Environmental Services

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FIGURES

1. Project Organizational Chart
2. Project Schedule

APPENDICES

1. Key Project Personnel Qualifications

1.0 INTRODUCTION

This Preliminary Work Plan describes the work to be performed to mobilize/demobilize to the site, fabricate, supply, install and operate a permanganate injection system in accordance with the Contract Documents, Contract Number D005272, Site No. 1-52-140, Farmingdale, New York (Site).

2.0 BACKGROUND

Several historic environmental investigations for the completion of a Remedial Investigation/Feasibility Study (RI/FS) were performed for the Site. The results indicated tetrachloroethylene (PCE) as the predominant contaminant of concern. PCE was found in soil and in groundwater. It was later determined that in-situ injection of Potassium Permanganate (KMnO₄) and Sodium Permanganate (NaMnO₄) would be a viable method of remediation. A pilot test was performed to prove the feasibility of this technology.

3.0 SITE DESCRIPTION

The Site is located at 1 Adams Boulevard, in the Hamlet of East Farmingdale, Suffolk County, New York at an approximate surface elevation of 120 feet above sea level. The site contains one multi-tenant industrial building approximately 4.5 acres in size.

4.0 GEOLOGY AND HYDROGEOLOGY

Based on drilling performed at the Site, the soil consists primarily of fine to medium sands. The depth to ground water is approximately 18 feet b.g. (below grade)

5.0 SITE PREPARATION AND LAYOUT

5.1 Use of Site

The project work area will be confined to the areas indicated in the contract drawings. The work area within the site will be limited to the north east corner of the existing building and a gate will be constructed at the entrance of the project work area. All efforts will be made to minimize impacts and limit traffic in areas outside the anticipated work zones. Disturbed areas will be

returned to a condition as good as or better than the current site conditions upon completion of the project.

Temporary facilities will be located in an area that does not hinder traffic flow within the work site and will be determined by existing site conditions.

5.2 Markouts

EnviroTrac will take every precaution necessary to identify and avoid private underground utilities (buried electric, phone and water lines, etc.); however, cannot take responsibility if after due diligence to mark all underground utilities, including a callout and a meeting with the owner where all known utilities are drawn on a site map, an unknown buried line is encountered. Public underground utility markouts will be called in advance (minimum 4 days) and all available as built layout of utilities will be reviewed by EnviroTrac prior to any subsurface work.

6.0 SITE SECURITY

6.1 Fencing

As specified, an 8-foot tall chain link fence will be installed at locations shown on the contract documents, unless otherwise directed by the Engineer.

6.2 Demarcation Fencing

Temporary, orange construction fencing will be used to delineate the exclusion zone and will be made of sufficient material to deter entry by vehicles and personnel.

6.3 Site Signs

A project sign will be provided for display on-site in accordance with Section 01010, 1.11 in a location directed by the Engineer and/or the Department. Signs reading "Warning Hazardous Work Area", "No Unauthorized Entry", and "Do Not Enter" will be posted at a minimum of every 100' along the perimeter of the work area.

7.0 EXECUTION

7.1 Injection Wells

The proposed injection wells will be installed using a Geoprobe direct push sampling apparatus and a hollow stem auger drill rig. The wells will be installed in accordance with the Contract Drawings. All wells will be installed prior to installation of surface piping and will be constructed of 2" diameter PVC, 0.020 slot screen and 2" diameter PVC riser to the depths specified in the contract drawings. Well locations will be determined in coordination with the Engineer after a utility mark-out has been performed and site conditions has been evaluated.

7.1.1 Well Installation

Exact location of injection wells will be determined by the site drawings and verified in the field to the Engineers satisfaction. In the event a well location must be moved due to engineer's approval of the new location will be obtained before installation. Wells will be installed in accordance with Section 02520 Injection and Monitoring Wells and accordance with the contract drawings.

7.2 Trenching, Piping, Restoration

Approximately 190 feet of 2" schedule 40 PVC will be installed above grade as a header for the permanganate delivery system and approximately ~~95 feet~~ of 1/2" flexible reinforced PVC tubing will be installed to each injection well in accordance with contract drawings and documents. The above ground piping will then be covered with clean select fill. The system piping and clean fill will be underlain with polyethylene sheeting to control spills as a result of a piping break.

7.2.1 Electrical

Temporary electrical service will be provided to operate the treatment system. All electrical equipment and devices will be furnished and installed for successful operation of the treatment system as specified. Materials required for electrical installation will be submitted for approval by the Engineer.

7.2.2 Injection

Permanganate injection will be performed in accordance with Section 02600 of the contract specifications and in accordance with the injection schedule (Table 0259-1) attached. The Project Schedule contains anticipated dates to begin injection. The injection system will be constructed in accordance with Figure P-1 of the contract drawings. Complete shop drawings and process equipment will be submitted to the Engineer for review prior to performing any injections.

The process and injection equipment will be provided via mobile injection unit by Carus Chemical and will be delivered to the site just prior to the scheduled start-up and testing period. A representative from Carus will be on-site during start-up and testing period to insure proper testing in accordance with manufacturer's recommendations and anticipated use of the specified equipment. Immediately following the scheduled injection events, the equipment will be removed from the site.

8.0 PROJECT SCHEDULE

A Project Schedule is provided in Figure 2. Project Schedules will be updated as specified in the Contract Documents or as directed by the Engineer on behalf of the Department.

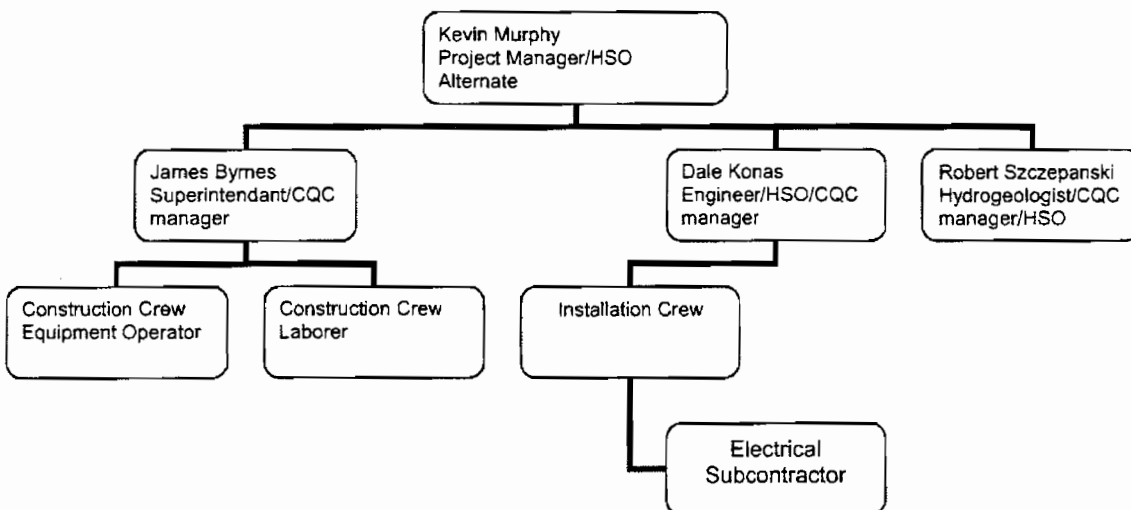
Immediately following approval of initial submittals and the preconstruction meeting EnviroTrac will mobilize to the site. Following mobilization all approved well locations and trench lines will be saw-cut and prepared for drilling and excavation. All wells will be drilled and approval obtained by the Engineer prior to trenching, pipe installation and well head connections. Piping will be leak tested prior to backfilling. All open trenches will then be restored to original condition. Piping will be terminated at the wall penetrations in the approved location of the system enclosures.

During construction the treatment system will be assembled off site and tested. Electrical service will be initiated and terminated at the system enclosure locations. Each system will then be delivered to the site, connected to the piping terminations and electric service then tested prior to startup.

8.1 Sampling and Analysis

The sampling and analysis for the specified wells is outlined in Section 1950 of the contract documents in addition to the Sampling Plan submitted under separate cover.

Figure 1. Project Organization



Appendix 1. Key Project Personnel Qualifications

Kevin Murphy
Project Manager/HSO Alternate

Expertise:

- Providing project management, health and safety, quality assurance/quality control and regulatory compliance services
- Providing client and regulatory interfacing to establish site assessment goals
- Management of remediation construction projects at petroleum bulk storage facilities
- Conducting soil and ground-water investigations.
- Selecting, designing and implementing appropriate soil and ground-water remediation systems
- Overall staff and subcontractor management
- Underground storage tank (UST) investigation and closure

Summary of Experience and Responsibilities:

Mr. Murphy has over 8 years experience as a Hydrogeologist in the environmental consulting and Remedial Construction fields and has been involved in managing hazardous waste and petroleum storage sites at varying levels of assessment, containment and remediation. He has extensive experience in providing management and quality control for the performance of: hydrogeologic investigations, site characterization projects, compliance assessments/audits, Phase I and II property assessments, Remedial Investigation/Feasibility Studies, the design and implementation of soil and ground-water remediation systems, risk assessment and site evaluation.

As a Project Manager for EnviroTrac, Mr. Murphy has the responsibility and authority to oversee and coordinate projects and provide quality assurance and contract compliance. Mr. Murphy is responsible for the overall project management and coordination of personnel conducting soil and ground-water investigations, selecting remedial technologies and installing and operating remediation systems. Mr. Murphy works closely with State and Federal regulatory agencies to evaluate compliance, risk and site remediation progress to establish closure goals.

Education:

BS Geology, State University of New York College at Oswego, 1997.

Professional Certifications:

OSHA Certification, 40 hr Health & Safety Training at Hazardous Waste Sites
OSHA Certification, 8 hr Refresher Health & Safety Training at Hazardous Waste Sites
OSHA Certification, Confined Space Entry and Supervisor Training
American Red Cross Adult, Infant, and Child CPR Certification

Project Experience:

- Project Manager for the installation, operation and maintenance of various remediation systems for the City of New York Department of Design and Construction. Responsible for development of project organization, Health and Safety Plan, Quality Assurance and Control Plan and other required documents necessary for a Quality System. Project responsibilities also included: Performing health and safety audits, installation and operation quality control, job costing and regulatory correspondence.
- Project Manager for a #6 Oil remediation project conducted under the New York State Superfund. Responsible for managing the installation, operation and associated sampling activities of a ground-water treatment system.
- Managed several and ground-water investigations for multiple retail oil companies in New York, New Jersey and Connecticut. Responsibilities included coordinating with the NYSDEC, the Fire Marshal, the building department and local municipalities to insure environmental compliance during any investigation or remedial activities. Responsibilities included management and quality control of assessment activities to include well installation, site characterization, remediation feasibility studies, pilot testing and construction oversight.
- Performed and managed multiple Phase I and II Environmental Site Assessments for commercial AST and UST in New York in accordance with ASTM practice (E1527).
- Conducted over 100 UST and AST system closures in NY, NJ and CT. Responsibilities included coordinating with the State and local regulatory agencies, local Fire Marshals, building departments and contractors to permit and remove petroleum USTs. Following UST removal, responsibilities included: end point sampling, report preparation and submittal to regulators.
- Worked with the NYSDEC to address MTBE contamination in water pumped from public supply wells as well as designing and implementing an investigation program to determine the source area in a fractured bedrock aquifer. Installed pump and treat groundwater remediation system in fractured bedrock.
- Performed over 100 closures of underground injection wells in accordance with Federal UIC requirements and local regulations. Closure responsibilities included preparation of submittals to notify EPA and local Health Departments of injection cessation, development of sampling plans and coordinating subcontractors to excavate and/or remove system. Following excavation/removal, responsibilities included documentation sampling, contaminated water and soil disposal coordination, reporting and follow up soil and/or ground-water investigation.

Dale Konas, P.E.
Environmental Engineer

Expertise:

- Design, installation, operation, maintenance of soil and ground-water remediation systems
- Evaluation and design of supplemental water treatment systems
- Value engineering, estimating and cost-benefit analysis
- Field remedial pilot and construction integrity testing
- Engineering and construction oversight of remediation systems
- Evaluation and implementation of innovative remedial technologies
- Quality Assurance/Quality Control

Summary of Experience and Responsibilities:

Mr. Konas has over 6 years experience as an Engineer in the civil and environmental consulting fields. Specific experience includes: field construction coordination and management, bid preparation/contract review, engineering technical support, research and development of innovative technologies, acquisition of permits, and the design of soil and ground-water remediation systems including preparation of design documents, specifications and drawings.

As an Environmental Engineer for EnviroTrac Ltd., Mr. Konas is responsible for the design, construction, installation and the operation and maintenance of remediation systems for major oil company retail facilities, New York State superfund hazardous waste sites, and commercial properties. He specializes in soil vapor extraction with or without vapor treatment using catalytic oxidation or activated carbon, air sparge injection, dual phase high vacuum extraction, pump and treat using air stripping and carbon adsorption, product recovery using skimmers, total fluid pumps and oil/water separators, bioremediation, and hydrogen peroxide injection technology.

Mr. Konas was responsible for the design, construction oversight, and operation and maintenance for over 60 remediation projects in New York, New Jersey, Florida, and Massachusetts. Mr. Konas's experience also includes serving as the quality control officer for New York State Superfund hazardous waste cleanup projects and a Metro-North Rail Road project. Other experience include the installation of innovative technologies for the Department of Energy, oversight and inspection of several commercial and New York City ground-water remediation construction projects.

Education:

BS Civil Engineering, State University of New York at Buffalo, 1996.
AS Engineering Science, State University of New York at Farmingdale, 1993.

Professional Certifications:

New York State Professional Engineer
OSHA Certification, 40 hr Health & Safety Training at Hazardous Waste Sites
OSHA Certification, 8 hr Refresher Health & Safety Training at Hazardous Waste Sites
OSHA Certification, Confined Space Entry and Supervisor
American Red Cross Community First Aid and Safety Certification

American Red Cross Adult, Infant, and Child CPR Certification

Project Experience:

- Field Engineer responsible for construction oversight of an In-Well Air Stripping system at Department of Energy's Brookhaven National Laboratory. Responsible for design changes, installation of subsurface and aboveground system components, equipment and associated controls, equipment and piping testing, as-built drawings, scheduling, planning and direct interaction with BNL engineers. System included the installation of over 7,500 feet of subsurface 10-inch diameter PVC pipe, 24-inch diameter manifolds, connection to seven In-Well Stripping Treatment Wells, and the installation of aboveground equipment, off-gas controls and instrumentation. System is designed to pump 420 gallons per minute (gpm) with air velocities over 4,800 cubic feet per minute (cfm).
- Field Engineer responsible for construction and oversight of a ground-water Pump & Treat system at DOE's Brookhaven National Laboratory. The system was designed to extract 100 gpm with treatment via three 2,000-lb. GAC vessels in series. Responsible for design changes, installation of subsurface and aboveground system components, equipment and associated controls, equipment and piping testing, as-built drawings, scheduling, planning and direct interaction with BNL engineers.
- Lead Engineer for several New York State Department of Environmental Conservation (NYSDEC) sites in the Upstate area of New York. Experience includes conducting feasibility and cost analysis for the selection of supplemental water treatment systems on public drinking-water well systems impacted by MTBE. Upon selection, Mr. Konas is responsible for the design, installation, operation and maintenance of the systems. Treatment technologies include large-scale granulated-activated carbon (GAC) units, traditional air strippers and low-profile air strippers. He is also responsible for evaluating existing remediation systems at NYSDEC sites and designing and implementing appropriate modifications to increase system efficiencies.
- Field Manager for a \$750,000 contract with the New York City Housing Department (NYCHA) to engineer, install and operate ground-water extraction and product recovery systems (fuel oil no. #2 - #6) at three housing tenants located in Brooklyn, NY. System components include the installation of large-diameter ground-water/product extraction wells, subsurface (trenching) installation of piping/system lines to the basements of the tenant buildings, down-well installation of both ground-water and product recovery pumps and associated equipment. Product recovery system components include oil/water separators, product recovery storage tanks and associated control panels, sensors, and safety switches. Contract work is in strict accordance with NYCDEP, NYSDEC, USEPA and OSHA.
- Provided the engineering design, installation and construction oversight of over 40 Soil-Vapor Extraction (SVE) and 25 combination SVE / Air Sparging (AS) systems at retail service station and industrial sites in New York, New Jersey, Florida, and Massachusetts. Responsible for project scheduling, budget tracking, material/equipment purchasing, design engineering, P&ID and As-Built Drawings.

James F. Byrnes
Construction Foreman/Superintendent

Expertise:

- Construction of remediation systems
- Equipment Operator
- Test Pits
- UST Removals
- Subsurface Trenching and Utility Installation
- General Building and Construction

Summary of Experience and Responsibilities:

Mr. Byrnes has over 27 years experience as an equipment operator including 10 years as Construction Foreman for the installation of remediation systems at hazardous waste and petroleum release sites. Specific experience includes: the installation of pump and treat and soil-vapor extraction/air sparge systems; installation of public water supply treatment systems; underground storage tank (UST) closures; test pitting; and, the operation and maintenance of soil and ground-water remediation systems.

As Construction Foreman for EnviroTrac Ltd., Mr. Byrnes is responsible for the construction and installation of remediation systems and associated equipment and controls. He is responsible for the management of EnviroTrac's construction crew and subcontractors.

Professional Certifications:

Operating Engineers – Local 138
OSHA Certification, 40 hr Health & Safety Training at Hazardous Waste Sites
OSHA Certification, 8 hr Refresher Health & Safety Training at Hazardous Waste Sites
OSHA Certification, Confined Space Entry and Supervisor
American Red Cross Community First Aid and Safety Certification

Project Experience:

- Remediation: Mr. Byrnes has extensive experience in the operation of heavy equipment, coordination of field personal and subcontractors for the installation and maintenance of a wide range of soil and ground-water remediation systems. Remedial systems have included both active and passive free product recovery, high vacuum dual phase (HVDP) extraction, traditional Pump & Treat, soil-vapor extraction, air sparging, bioventing, bioremediation, excavation, dual phase extraction, installation of innovative technologies such as In-Well Air Stripping.
- UST Closures: Mr. Byrnes has performed numerous UST closures at petroleum bulk storage facilities. Experience includes: operation of excavation equipment, coordination of waste disposal, excavation of soil, backfilling excavation and site restoration.

Robert Szczepanski
Environmental Geologist/Hydrogeologist

Expertise:

- Oversight of drilling and well installation
- Evaluation of field and laboratory data
- Technical reporting
- Soil and ground-water remediation system operation and maintenance
- Geographical Information Systems (GIS)

Summary of Experience and Responsibilities:

Mr. Szczepanski is an experienced geologist in the environmental consulting and construction field. Specific experience includes: conducting environmental investigations utilizing various drilling techniques; collecting soil and ground-water samples for various analytical parameters; conducting operation and maintenance activities for remedial systems; and, conducting GIS analysis of environmentally impacted areas.

Education:

BS Environmental Technology, New York Institute of Technology, 1997.

Professional Certifications:

OSHA Certification, 40 hr Health & Safety Training at Hazardous Waste Sites.
OSHA Certification, 8 hr Refresher Health & Safety Training at Hazardous Waste Sites
OSHA Certification, Confined Space Entry and Supervisor
American Red Cross Community First Aid and Safety Certification
American Red Cross Adult, Infant, and Child CPR Certification

Project Experience:

Mr. Szczepanski conducted soil and ground-water investigations at several active petroleum-release sites for a major oil company and hazardous waste sites for the New York State Department of Environmental Conservation (NYSDEC). Investigation techniques included soil borings, ground-water monitoring well installations, direct-push (Geoprobe) sampling, sampling and waste characterization. Drilling methods utilized include hollow stem auger, drive and wash, air rotary and mud rotary technique. He is responsible for preparing technical reports providing a summary of the activities performed and discussing the results.

- Mr. Szczepanski has performed construction and well installation oversight for, and has performed operation and maintenance, of remediation systems at over 20 petroleum-release sites for the NYSDEC, NYCDDC, and major oil companies. Remediation systems include soil

vapor extraction, air sparge, pump and treat, and dual phase extraction. Operation and maintenance responsibilities include quality assurance and control during construction, system sampling, recording operating conditions, maximizing system efficiency and troubleshooting component failures.

- At EnviroTrac, Mr. Szczepanski is responsible for performing and evaluating groundwater soil sampling data for multiple clients and is additionally responsible for producing weekly, monthly and quarterly status reports.
- He is also responsible for the management of over 40 home-owner potable water treatment systems associated with several NYSDEC spill sites. Tasks include verifying and reviewing lab data, preparing letters to the homeowners explaining the analytical results, scheduling carbon change outs and scheduling additional sampling events.



SAMPLING PLAN

**Remediation of National Heatset Printers
1 Adams Boulevard
Farmingdale, NY**

**Contract No. D005272
Site No. 1-52-140
Suffolk, New York**

Prepared for:

**New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 12233-7010**

Prepared by:

**EnviroTrac Ltd.
80 B Air Park Drive,
Ronkonkoma, NY 11779**

May 2005

INTRODUCTION

This Sampling Plan describes the groundwater sampling methods proposed to comply with the requirements of the contract specifications (Sections 01950) for the work to be performed at the National Heatset Printing, located at 1 Adams Boulevard, in the Hamlet of East Farmingdale, Suffolk County, New York. The Sampling Plan will ensure that the system is operating in accordance with the requirements of the contract specifications (pertinent sections are provided as attachments to this plan). Quality control is discussed in the Quality Assurance/Quality Control Plan submitted under a separate cover.

Schedule of Execution

Sampling will be performed in accordance with Section 02900, (attached).

Purging and Sampling Procedure

Groundwater purging and sampling procedures will be conducted in accordance with section 02900 Part 3, 3.03 (attached). Decontamination, between and prior to, collecting samples from individual sample points, will be performed in accordance with section 01950 Part 3, 3.04. ChemTech will be the intended laboratory for this project. They are located at 284 Sheffield Street, Mountainside New Jersey 07092. Their phone number is 908-789-8900 and the contact for EnviroTrac is Joseph Dockery. Chemtech's Qualifications are attached.

Reporting

All field parameter measurements will be reported daily. Laboratory reports will be forwarded to the engineer upon receipt.

ATTACHMENTS



284 Sheffield Street • Mountainside, NJ 07092 Phone: 908.789.8900 Fax: 908.789.8922

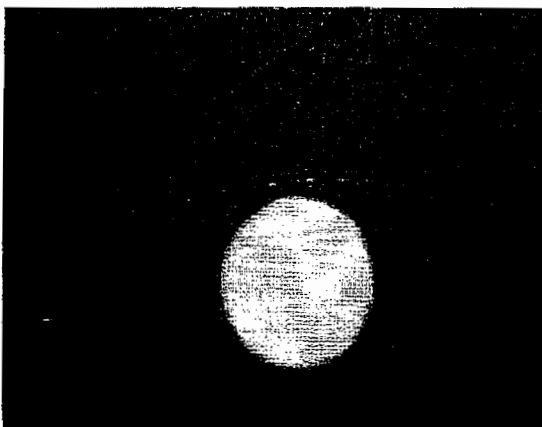
STATEMENT
Of
QUALIFICATIONS

A FULL SERVICE ENVIRONMENTAL LABORATORY

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Introduction

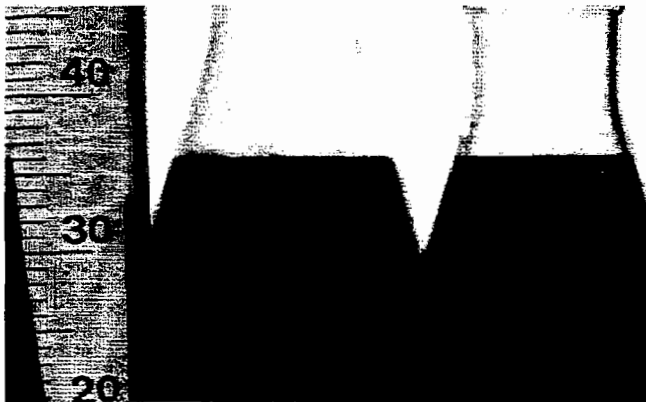
Chemtech a quality driven, service oriented company, strives to provide our clients with high quality analytical services in an *express* period of time. Founded in 1967, Chemtech is privately held and minority owned. With guidance from our directors, and the dedication and experience of our management team, Chemtech has developed into a profitable, environmental services company. Our directors, many of who are also major shareholders, are acutely aware of the dynamics of our industry, changing technology, and the need for capital investment. Chemtech has been successful in acquiring the equipment, software and automation necessary to be a leader in the analytical community.

Providing comprehensive analytical testing services for the identification and assessment of environmental contaminants is our only business. Our services are used to meet various regulatory permitting and reporting requirements, determine compliance with both State and Federal environmental regulations and assess potential present or future environmental liabilities. We provide analytical and field sampling services to consulting engineers, industry, and state and federal agencies.

Designed for maximum efficiency and safety, our laboratory is equipped with state of the art instrumentation and automated systems. Our technical staff is a highly skilled group of degreed chemists with diversified experience in environmental analysis. Our managers are a knowledgeable team of professionals who are *dedicated* to quality and client satisfaction.

Chemtech's capabilities and technical experience extends beyond the analysis of the routine Priority Pollutants or Target Compound List of constituents. We are often called upon to design and implement analytical schemes for identifying and quantifying the presence of non-routine, unusual or esoteric compounds. Extensive laboratory facilities and technical expertise enable Chemtech to routinely meet our client's needs and produce timely analytical data of impeccable quality.

This document provides an overview of our organization and capabilities. As you read, you will discover our commitment and our ability to provide accurate and timely analytical services.



EXPRESS...THE DIFFERENCE

Capabilities

Chemtech is one of the *original* participants in the Environmental Protection Agency's Superfund Contract Laboratory Program (CLP). We have had multiple

organic and inorganic contracts since 1983. In addition to CLP, Chemtech participates in multiple state certifications for drinking water, ground and surface water, industrial effluents and wastewater, air, contaminated soil and solid/hazardous waste analysis. Chemtech also maintains U.S. Department of Navy (NFESC) and U. S. Army Corps of Engineers (ACOE) accreditations.

In striving to meet the demands of our clients, Chemtech provides a wide selection of analytical tests and services. *Capabilities include a variety of analytical methodologies:*

- ▼ Microbiology
- ▼ Classical Chemistries
- ▼ Metals
- ▼ Volatile Organics
- ▼ Semi-volatile Organics
- ▼ Pesticides & PCB's
- ▼ Herbicides
- ▼ Explosives
- ▼ Air Toxics

Chemtech works very closely with our clients. In fact, our laboratory is available for operation 24 hours a day, 7 days a week to meet the vigorous deadlines our clients need to meet.

Exceeding our client's expectations for quality and service is our primary goal. We fully realize that it is imperative that close attention is paid to details so that we fulfill the data quality objects set forth by our clients. We routinely hold project "kick-off meetings" and centralize project information in our database so that all project information is available to all chemists at all times.

Our value-added services include:

- ▼ Courier service for sample container deliveries and pickups
- ▼ Field Sampling
- ▼ Personal Project Management
- ▼ Technical Consultations
- ▼ Web Access
- ▼ Customized Reporting and Electronic Data Management

Laboratory Analytical Services

With a great deal of capital invested in our instrumentation, Chemtech is able to utilize state of the art instrumentation to analyze samples expediently and accurately. Instrumentation and automation technology are dynamic and Chemtech strives to employ the best available technology at all times. Capital investments are critical to ensure that our laboratory is able to handle the vigorous data quality objectives set forth by our clients. The following is a synopsis of the types of instrumentation and analytical techniques we employ. A detailed listing of our instrumentation can be found on page 15

1. Inorganic Analysis

After the sample preparation is completed by digestion, trace concentrations of inorganic elements can be determined by a variety of instrumental analysis.

Cold Vapor:

In environmental laboratories, Cold Vapor is primarily used for mercury analysis. Analytical tests utilizing Cold Vapor are:

- ▼ USEPA Contract Laboratory Program (CLP) Methodologies
- ▼ NYSDEC, ASP
- ▼ Synthetic Potential Leaching Procedure (SPLP)
- ▼ Total Characteristic Leaching Procedure (TCLP)
- ▼ Mercury (Methods 245.1, 7470, & 7471)

Inductively Coupled Argon Plasma Spectroscopy (ICP):

The preponderance of elemental analysis is performed by ICP simultaneous instrumentation. Our instruments are Trace ICP's that allow very sensitive MDL's to be achieved. TRACE ICAP is utilized for the determination of dissolved, suspended, or total elements in industrial wastewater, drinking, surface or ground water. This technique can analyze up to 30 elements in a single analysis. Analytical tests routinely performed by ICP include:

- ▼ Total Characteristic Leaching Procedure (TCLP) Metals
- ▼ Priority Pollutant Metals (PPM)
- ▼ USEPA Contract Laboratory Program (CLP) Methodologies
- ▼ NYSDEC, ASP
- ▼ Target Analyte List Metals (TAL and SW 846)
- ▼ Primary and Secondary Drinking Water Metals
- ▼ Synthetic Potential Leaching Procedure (SPLP) Metals

Classical Chemistry



A wide variety of analytical methods are conducted in our Classical Chemistry Laboratory. We routinely run tests for cyanide, phenols, BOD, COD, TOC, TOX, petroleum hydrocarbons and many others in this laboratory. Chemtech's Classical Chemistry Laboratory includes a Technicon Auto Analyzer II with multiple modules, a UV-Visible Spectrophotometer, Ion Analyzers, multi distillation apparatus, and other standard laboratory equipment.

2. Organic Analysis

Gas Chromatography/Mass Spectrometry (GC/MS)

Gas chromatography combined with a mass spectrometer detector is the most powerful tool for accurate identification and quantification of complex mixtures of organic compounds. This technique is widely used in analysis of groundwater, wastewater and soil for industrial pollutants, and in special concerns where the identity of unknown but suspected trace organic contaminants must be determined.

Chemtech offers many customized analytical services as well as the following types of standard services and analytical methods:

- USEPA Contract Laboratory Program (CLP) Methodologies
- New York State DEC Superfund ASP Organic Analyses
- Solid Waste Manual Methodologies (SW846-8000 Series)
- Priority Pollutant Analyses (US EPA 600 Series)
- Drinking Water Analyses (US EPA 500 Series)
- Identification of Tentative Compounds (TICs)
- Selected Ion Monitoring (SIM)

Gas Chromatography (GC)

Chemtech is capable of performing many GC methods for analysis of samples suspected of containing pesticides or PCBs, or other known organic substances as a less expensive and often more sensitive (lower detection limit) alternative to GC/MS methods. Chemtech has Gas Chromatographs coupled with a wide range of detectors, including Halls Electrolytic Conductivity, Electron Capture, Flame Ionization and Photoionization.

All GC's are equipped with autosamplers and are integrated into an automated data management system. These instruments are generally used for analyzing many types of organic compounds, including:

- ▼ Halogenated Volatile Organics (EPA 601, 8021)
- ▼ Aromatic Volatile Organics (EPA 602, 8021)
- ▼ Halogenated and Aromatic Volatile Organics (8021)
- ▼ Pesticides and PCB's (EPA 608, 8081/8082)
- ▼ PCB Congeners (8082)
- ▼ Chlorinated Herbicides (EPA 8151)
- ▼ Gasoline and Diesel Range Organics (GRO/DRO EPA 8015M)
- ▼ USEPA Contract Laboratory Program Methodologies (CLP)

High Performance Liquid Chromatography (HPLC)

HPLC is one of Chemtech's specialties. It is a useful analytical tool when low MDL's are required for PAH analysis.

- ▼ Low Level PAH's (SW-846, Method 8310)
- ▼ Explosives (SW-846, Method 8330)

3. Air Analysis

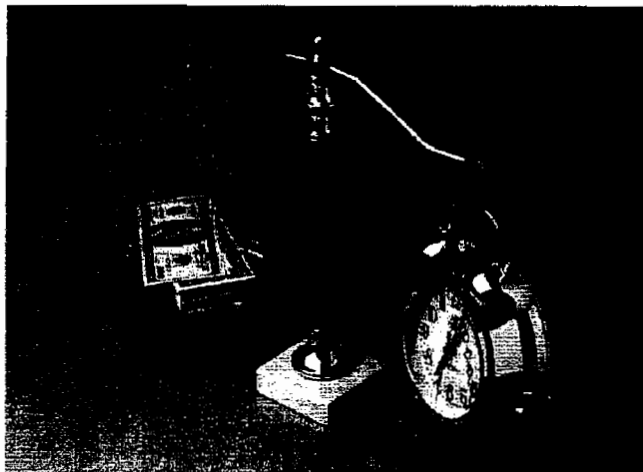
Another of our specialty services is air analysis. Chemtech conducts both EPA and NIOSH methods for analysis. We supply pre-cleaned summa canisters, tedlar bags, and filters as a value added service to our clients.

- ▼ TO-1 Volatile Aromatic Hydrocarbons
- ▼ TO-2 Volatiles
- ▼ TO-14 Summa Canisters
- ▼ Tedlar Bags
- ▼ Tenax Tubes
- ▼ PM-10 Lead Analysis

4. Waste Characterization and Treatability Analysis

Chemtech has extensive experience in the sampling and analysis of waste drums. The following are some of the analyses performed on these types of samples:

- ▼ Physical Characteristics
- ▼ Chemical Compositions
- ▼ Hazardous Characteristics
- ▼ Ignitability, Corrosivity, Reactivity
- ▼ Toxicity Characteristic Leaching Procedure (TCLP)
- ▼ Synthetic Leaching Procedure (SPLP)
- ▼ ASTM Leaching Procedure



*Chemtech's
Value-Added Services*

1. Courier Service

Logistical support is of critical importance to our clients. Chemtech *understands* the importance of logistics and maintains a fleet of trucks to service our clients needs. We drop off sample containers and pickup samples from our client's offices or sites. A one hundred mile radius from the laboratory is typically our driving range. When distances greater than one hundred miles are encountered, we support our clients with next day air service.

Sampling containers are provided to all our clients upon request. Our typical sampling kits include pre-preserved sample containers labeled for the appropriate analysis, custody seals, chain of custody, and coolers. Encore samplers and Methanol kits are also provided when requested.

2. Field Services

If preferred, Chemtech's field technicians can collect or assist in the collection of environmental samples. Our field technician's are experienced in the proper collection techniques, sample handling, and decontamination procedures. Protocols followed include the client's approved sampling plan or the NJ DEP's Field Sampling Procedures Manual.

Chemtech's field services include:

- ▼ Ground Water Sampling
- ▼ Influent and Effluent Sampling
- ▼ Soil/Waste Pile Sampling and Compositing
- ▼ Stream Sampling
- ▼ Potable Water Sampling
- ▼ Surficial Sampling: Wipes, Chips and Sweepings
- ▼ Field Sampling Assistance to measure: pH, Temperature
Conductivity, Dissolved Oxygen and Residual Chlorine

3. Project Management – Client Services

A crucial element to the successful completion of projects in our laboratory is our Project Management team. Our Project Managers are technical laboratory staff that are trained in understanding the critical nature of projects and communicating the needs of the client to the laboratory. Communication is centralized through our Laboratory Information Management System (LIMS).

As soon as a firm becomes a client, the Client Service Manager assigns the firm to a Project Manager. The Project Manager then becomes the central point of communication for the client. Project Manager responsibilities include scheduling bottle orders and sample pickups for the client, communicating the needs of the client to the laboratory, answering client questions regarding data, and ensuring that expedited turnaround data is sent to the client in a timely fashion.

Prior to a project's onset, the Account Executive and Project Manager will hold a project "kick-off" meeting with the client. Our staff will have a discussion to finalize all project details and outstanding issues. Once the details have been finalized, the Project Manager will enter project information into our LIMS system. Chemtech maintains a high-tech LIMS system that allows a chemist to view the technical specification for a project at any point in time. Information such as compound lists, method detection limits, and reporting requirements are located in this central database. Our database allows Chemtech to easily communicate all client needs.



4. Technical Consultations

A business relationship should be a *partnership*. Each partner uses their own expertise and helps create a team. Chemtech's expertise is analytical testing; we *do not* expect our clients to be chemists. Whenever clients request assistance with Quality Assurance Project Plans, methods of detection for constituents of concern, or any technical issues they encounter, we gladly assist them.

Chemtech's staff consists of professionals that have been working in the environmental testing industry for many years. They have a great deal of experience with many types of matrices and compounds as well as various State and Federal environmental regulations.

5. Web Access

Understanding our clients needs lead us to develop our Internet website. As long as a client obtains a password from their Project Manager in advance, the client can log onto the website at any time and obtain real-time data.

Data can be retrieved in a variety of ways. One of the most useful options for data retrieval is by project identification. The project identification option allows all sampling events from a particular project to be viewed. The web will indicate whether the data is pending or approved. Only data that has been validated and approved is available on the web. If all the data is approved, the client can download their entire hardcopy, including quality assurance information. In addition to the hardcopy, the EDD in the customized format requested, can also be downloaded.

You can also choose to view the data right on the screen. Choosing to view the data on the screen will allow you view the data by individual sample or by analytical fraction. In addition, you can query the data on sample identification, sample date, date of laboratory receipt, matrix, and test.

Data access is not the only advantage to Chemtech's website. Bottles orders and sample pickups can be scheduled via the web. The web will prompt you for all required information and your Project Manager would send you a confirmation of receipt.

Quotations can also be requested on our website. The quotation will prompt you for project identification, number of samples, tests, methods, and matrices. Hardcopy and EDD formats will also be requested. Enter all prompted information and an Account Executive will send you your quote by the next business day.

6. Report Deliverables and Electronic Data Management

Automation is the key to success in a laboratory. Chemtech has made strides in automating data reporting. Our automated data management capabilities provide a wide variety of report packages as well as offer options for customizing reports to meet individual client needs.

Report packages are designed to meet specific regulatory requirements. The routine report deliverable packages are as follows:

- ▼ Standard Format (Results Only)
- ▼ EPA Contract Laboratory Protocol (CLP Format)
- ▼ NJ DEP Reduced Deliverables
- ▼ NJ DEP Regulatory Format
- ▼ NYS DEC ASP A
- ▼ NYS DEC ASP B

Standard Format (Results Only)

The Standard Format reporting package includes results of the analysis (Form 1's) and the field chain of custody documentation.

EPA Superfund Contract Laboratory Program (CLP) Package

CLP packages are designed to meet Federal and most State Superfund program criteria. This format contains stringent Quality Assurance and Quality Control (QA/QC) criteria and raw data generated from instruments as well as laboratory notebooks. Chemtech routinely provides this type of reporting to EPA Regions, State Regulatory Agencies and Consulting Engineers.

NJDEP Reduced Laboratory Data Deliverables

This format includes the results and QA/QC documentation. Raw data is not included in this format. Most NJ sites require this format.

NJDEP Regulatory Data Deliverables - Non-USEPA CLP Methods

Similar to a USEPA CLP data package in contents, this format utilizes non-CLP methods and requires results, QA/QC and raw data to be reported.

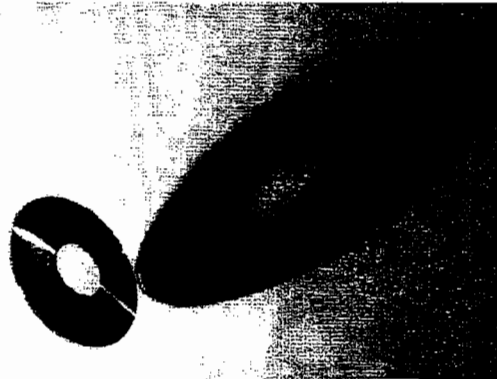
New York State DEC, Analytical Services Protocol (ASP)

NY State requires several different reporting formats. Chemtech is capable of providing all NY required deliverable packages. ASP B is comprehensive and is similar to CLP. ASP A is far less comprehensive and is similar to our Standard Report package.

Electronic Data Deliverables (EDD):

Chemtech offers a variety of EDD formats. Diskettes in ASCII formats are available for CLP and ASP packages. These disks can be used to directly load analytical results into most database software.

Our basic EDD is a tabular format in EXCEL and this format can be easily customized. Chemtech also offers fully completed Hazsite EDDs. We typically receive the Consultant's information via email and combine and check the Hazsite files. Other EDD formats are customized and based on specific project requirements. They are available in ASCII, Quattro Pro, Excel, or Lotus database formats.



In addition to the above, Chemtech provides ERPIMS and IRDMIS EDDs in support of US Department of Defense-Air Force and Army Corps of Engineers Projects.

The hardcopy, in its entirety, is also available on a CD. The report sections are bookmarked for easy reference.

Data Archival/Data Retrieval

Chemtech maintains all raw data, laboratory notebooks, reports and other important documentation for a period of five years from the date of the report. Data retrieval from our archives will be handled in a similar fashion to a request for analysis.

In order to maintain client confidentiality, we require that a written work request authorized by the original client be submitted to the laboratory. We will then issue a copy of the report or other supporting documentation to any firm or individual the original client has authorized.



Laboratory Organization and Management Structure

Chemtech has a solid organizational structure, dedicated managers, and a staff that works diligently to meet the high standards that our clients demand. We have developed a team of professionals that truly have a vast amount of experience and knowledge.

Emanuel Hedvat, our President has a Master's Degree in Chemistry and 19 years experience in environmental laboratories. Mr. Hedvat is responsible for the overall management of the laboratories. His responsibilities include establishing corporate objectives and formulating strategies in which to achieve them. In addition, Mr. Hedvat maintains close relationships with our clients to ensure that our services meet or exceed our client's expectations.

Divya Mehta, our Chief Operating Officer and Technical Director, is responsible for the operation, technical performance and data quality of the laboratory. Mr. Mehta is highly proficient in the analysis of organic and inorganic methodologies and provides technical guidance for our clients and laboratory staff. He has a degree in Chemical Engineering and more than 16 years of environmental laboratory experience.

Mildred Reyes, our Quality Assurance/Quality Control Director is responsible to communication of all QA/QC policies and procedures to laboratory managers and personnel. She ensures that the laboratory complies with appropriate regulations and coordinates performance evaluation analyses for state and federal certifications and accreditation's. Ms. Reyes is also responsible for data review and laboratory report compliance to government and client specifications.

Hemex Patel our Inorganic Laboratory Manager, brings more than 10 years of environmental laboratory experience to our firm and has a strong management background. He has worked in different capacities in both government and private sectors and has done extensive work in classical chemistry and metals analysis.

Vyomesh Parekh our Organics Manager is responsible for production and co-ordination of work in the organics area. In addition, Mr. Parekh conducts assessments for precision and accuracy, and reviews organics data for compliance with regulatory requirements. He has 12 years of analytical laboratory experience.

Herin Artist our Systems Manager is responsible for the quality control of all computer systems, including hardware, software, documentation and procedures. He generate and updates the automated deliverables in accordance to client specifications. Mr. Artist is responsible for installation, training, maintenance and operation of programs.



Quality Assurance Overview

Chemtech has designed a quality assurance program that covers every facet of our operation. Dedication to high quality data and service is at the very essence of our operation. Evidence of our diligence to quality is illustrated by our excellent performance on proficiency tests and audits.

Quality Assurance Policy

Chemtech's Quality Assurance Policy provides that reliable and legally defensible data is given to clients in a timely fashion. Our staff is dedicated to meeting *all* client commitments and therefore charged with providing reliable, timely data one hundred percent of the time. We endeavor to maintain our high quality standards while always striving to improve operations through the spirit of innovation and new technology.

Quality Assurance Objectives

The Quality Assurance/Quality Control process begins prior to samples arriving at the laboratory. Account Executives and Project Managers work to ensure that the laboratory can achieve all client specifications. Our credibility is dependent upon our ability to perform. We have therefore set objectives to guarantee our success. Chemtech's QA/QC objectives are to:

- ☒ Ensure that our clients are provided with the greatest level of professionalism by maintaining a team of individuals on staff with experience, education, and the desire to listen, learn and act on our clients needs.
- ☒ Consistently provide high quality, legally defensible data that meets all client expectations while also complying with all state and federal methodologies, certifications, and regulations.
- ☒ Continually improve our operations by fostering and rewarding innovation, staying abreast of new technology, and creating an environment that is beneficial to both our staff and clients.

Quality System

Continuous quality improvement is the keystone to the Chemtech Quality System. The elements of our Quality System are clearly documented in our Quality Assurance Manual and utilized by all Chemtech employees. Standard Operating Procedures for all tests and procedures are developed in accordance to guidelines set forth in our Quality Assurance Manual.

The Chemtech Quality System is designed to meet the most vigorous requirements of individual States, US EPA, NELAC, and Department of Defense Agencies. Modeling our system to the most vigorous protocol established by these agencies standardizes our operation and further improves our ability to consistently provide high quality data.

Critical elements to our system involve:

- Positive and negative controls such as spikes and blanks.
- Procedures to define the variability or reproducibility of tests such as duplicates.
- Measures to assure the accuracy of the test method such as calibrations, second source standards and proficiency test samples.
- Provisions to evaluate test method capability such as detection or quantitation limits or range of applicability such as linearity.
- Selection of appropriate protocols to reduce raw data to final results such as regression analysis, comparison to internal or external standard calculations, and statistical analyses.
- Selection of appropriate grade reagents and standards to ensure high quality data.
- Measures to assure consistent test conditions for instruments as well as the laboratory such as temperature, humidity and light.
- Internal audits and corrective action reports that are distributed to the President, Chief Operating Officer, Laboratory Manager and appropriate Department Supervisor.
- Strict adherence to acceptance and rejection criteria mandated by methods and/or regulatory agencies. Procedures for development of acceptance/rejection criteria where none is defined by the method or regulatory agency.
- Communication and implementation of continuous quality and technological improvements.

For detailed documentation regarding our Quality System, please contact Chemtech and request our Quality Assurance Manual.



Facilities and Instrumentation

Facilities

Chemtech maintains a state-of-the-art facilities located in Mountainside, New Jersey. Our spacious 30,000 square foot facility is designed for optimum efficiency and automation.

The facility is equipped with high-tech security systems that have internal and external cameras and alarms. All entrances to the laboratories are locked to limit the entrance of individuals to those who are authorized to enter only. Established clients that are dropping off samples are given a code to enter the facility through the Sample Receiving Department entrance. After entering the sample receiving area, one of the Sample Custodians located in that area will assist them with their samples.

The sample receipt area is equipped with hoods and benches with chemical resistant tops for receiving and safely handling the coolers and samples. Clients can drop off samples at the laboratory on weeknights and weekends as long as arrangements are made in advance.

All areas where temperature is critical such as the walk-in refrigerators, freezers, and instrumentation and computer rooms are monitored closely. Refrigerator temperatures are checked by the Sample Custodians every day and documented in logbooks. If a refrigerator needs repair, the samples and/or extracts are immediately removed from that refrigerator and placed in a temporary location until the repair is completed utilizing proper internal chain of custody procedures. Samples are kept at 4°C at all times and only the Sample Custodians are permitted access to the refrigerators. This practice allows us to keep samples under proper chain of custody at all times.

Ventilation systems for our laboratories are designed to minimize inter-departmental contamination. Each department has its own ventilation system that directly discharges to the outside, thereby greatly minimizing problems such as elevated levels of methylene chloride in samples slated for volatile analysis.

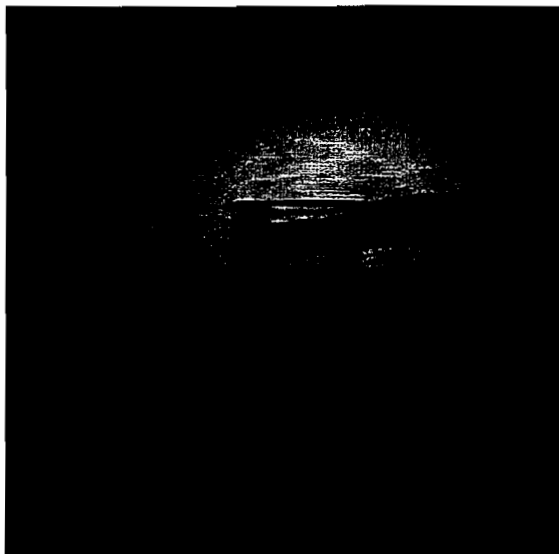
Instrumentation

Chemtech is committed to continuously updating and automating instrumentation. As you have read, continuous quality and technology improvement is a critical element of our Quality System. All our instrumentation conform to the requirements of the analytical methods for which it is intended. Documentation of the specifications for each instrument are kept in the Quality Assurance Office.

Prior to use, each instrument is adjusted according to the manufacturer's instructions. When proper adjustment is achieved, the instrument is calibrated according to the appropriate analytical method, and the calibration is verified by an independently prepared standard. Validation of proper adjustment, calibration, and verification is recorded or referenced in the proper notebook.

A maintenance schedule and log is maintained for each instrument. The maintenance schedule includes the manufacturer's recommended maintenance procedures as well as those found necessary by the instrument operators. All maintenance performed on the instrument is recorded in the maintenance log with date, maintenance performed, name of person performing maintenance, and downtime.

Instrumentation Summary	
Instrumentation Type	Number of Instruments
Gas Chromatographs/Mass Spectrometers (GC/MS)	7
Gas Chromatographs/Mass Spectrometers (GC/MS) with Archon Autosampler	6
Gas Chromatographs (GC)	10
High Pressure Liquid Chromatography (HPLC)	1
Gas Chromatographs with NPD/FID detector (GC)	1
Inductively Coupled Plasma Emission Spectrophotometers/Mass Spectrometers (ICP/MS)	1
Trace Inductively Coupled Plasma Spectrophotometers (Trace ICP)	2
Air Canister Auto Sampler with concentrator and GCMS	1
Cold Vapor Atomic Absorption Spectrophotometer (CVAA)	2
Mercury Analyzer	2
Ion Chromatograph	1
Wet Chemistry Auto Analyzer	2
Automated Soxhlet Extractor	2
Pressurized Fluid Extractor	3
Gel Permeation Chromatography (GPC)	2
<i>Chemtech maintains a full array of other Laboratory instrumentation such as UV-Visible Spectrophotometers, TOX, TOC, block digestors, ultrasonic bath and analytical balances</i>	



Project Experience and Certifications

DOD EXPERIENCE

Client Name	Contract Description	Project Description
Consulting Firm Herndon, VA	39-3LL7.0-DAS Navy CLEAN II I/R	Provided analytical testing services in support of environmental engineering programs under the US Navy –Naval Facilities Engineering Command, CLEAN II –LANTDIV. Analysis of Soil, Water, and Haz-Waste for various parameters. USEPA CLP analyses for both, low/medium methods (OLM04, ILM04, OLC02). Non-CLP analyses using SW846 methodologies.
Consulting Firm West Chester, NY	Navy Yard	Provided analytical testing services of Soil, Water and Waste samples in support of a Navy Yard Investigation utilizing NYS DEC ASP Protocols
Consulting Firm Langhorne, PA	Navy RAC North Div N62472-94D-0398	Provided analytical testing services in support of US Navy-Naval Facilities Engineering Command, NORTHERN Division Remedial Action Contract. Analysis of Water, Soil, and Waste at multiple sites. Analysis includes TCL/TAL and disposal parameters on expedited turnaround.
Consulting Firm Coraopolis, PA	Navy CLEAN II/R N62470-89-D-4814	Provided analytical testing services in support of environmental engineering programs under the US Navy –Naval Facilities Engineering Command, CLEAN II –LANTDIV. Analysis of Soil, Water, and Haz-Waste for various parameters. USEPA CLP analyses for both, low/medium methods (OLM04, ILM04, OLC02). Non-CLP analyses using SW846 methodologies
Consulting Firm Boston, MA	Submarine Base Investigation	Provided analytical testing services in support of a soil and sediment remediation at the US Naval Submarine Base New London in Groton, CT. Technical scope of work included analysis of pesticides, metals, low level explosives, TCLP complete and limited chemistry.
Consulting Firm Herndon, VA	39-3LL7.0-DAS Navy CLEAN III I/R	Provided analytical testing services in support of environmental engineering programs under the US Navy –Naval Facilities Engineering Command, CLEAN III –LANTDIV. Analysis of Soil, Water, and Haz-Waste for various parameters using USEPA CLP protocol and SW846 methodologies.

Client Name	Contract Description	Project Description
Consulting Firm Langhorne, PA	Navy Base NE BRAC	Provided analytical testing services in support of US Navy-BRAC program. Analysis of TCL/TAL and disposal parameters on expedited turnaround. In water, soil, and sediment matrices.
Consulting Firm Langhorne, PA	Navy RAC North Div N62472-94D-0398	Provided analytical testing services in support of US Navy-Naval Facilities Engineering Command, NORTHERN Division Remedial Action Contract. Analysis of Water, Soil, and Waste at multiple sites. Analysis includes TCL/TAL and disposal parameters on expedited turnaround.
Consulting Firm Boston, MA	Defense Supply Center Project	Provided analytical testing services in support of US Navy-Naval Facilities Engineering Command, NORTHERN Division Remedial Action Contract. Analysis of water, soil, and air at a former military base. Analysis includes TCL/TAL/PA Form U disposal parameters and TO-14 on expedited turnaround.
Consulting Firm Oklahoma City, OK	Air Force Base AFCEE	Remediation project involving the analysis of soil and sediment samples for disposal purposes on an expedited turnaround. All hardcopy data reported in Level IV format. All electronic data reported in ERPIMS format.
Consulting Firm Oklahoma City, OK	Air Force Base AFCEE	Remediation project involving the analysis of soil and sediment samples for disposal purposes on an expedited turnaround. All hardcopy data reported in Level IV format. All electronic data reported in ERPIMS.
Consulting Firm Knoxville, TN	Air Force Base AFCEE	Base-wide contract for analysis of monitoring wells. Approximately 1500 wells are sampled and analyzed under this project. Analytical scope includes TCL/TAL, wet chemistry, and Air analysis. Chemtech provides client-specific and USAF ERPIMS electronic and on-line data deliverables
Consulting Firm Knoxville, TN	Air Force Base AFCEE	Provided analytical services for this multi-year Operation and Maintenance contract under the US Air Force AFCEE Guidelines. Analytical scope includes organic, inorganic and classical chemistry. All electronic data reported in ERPIMS format. All data reviewed and provided in ADR EDD format Tables 1A, 2A and 3A
Consulting Firm Oak Ridge, TN	Air Force Base AFCEE	Base-wide contract for analysis of monitoring wells. Approximately 1600 wells are sampled and analyzed under this project. Analytical scope includes TCL/TAL, wet chemistry, and Air analysis. Chemtech provides client-specific and ERPIMS electronic and on-line data deliverables
Consulting Firm Oklahoma City, OK	Air Force Base AFCEE	Provided analytical services for this multi-year Operation and Maintenance contract under the US Air Force AFCEE Guidelines. Analytical scope includes organic, inorganic and classical chemistry. All hardcopy data reported in Level IV format. All electronic data reported in ERPIMS format.
Consulting Firm Edgewood, MD	US Army Corps of Engineers Ammunition Plant Remediation	US Army Corps of Engineers, Baltimore District project. Chemtech provided analytical services for approximately 100 investigative-derived waste samples for SW846 TCL/TAL parameters at Army Ammunition Plant. All hardcopy data was reported in a USEPA Level IV format for full validation. All electronic data was reported in IRDMIS format.
Consulting Firm Plymouth Meeting, PA	US Army National Guard	Provided analytical services in support of various site investigations. Analyses include TCL/TAL for soils, waters, and sediment samples. All hardcopy data reported in a USEPA Level IV format for full validation.

ENVIRONMENTAL CONSULTING FIRMS EXPERIENCE

Client Name	Contract Description	Project Description
Consulting Firm Nijmegen, Netherlands	Oil Terminal in Chile	Site investigation generating multiple matrices of environmental samples performed in accordance with USEPA protocols for a multinational oil corporation. USDA Soil Permit utilized for US Customs entry while providing various logistical and analytical support services.
Consulting Firm Somerset, NJ	NYS DEC Statewide Standby Contract	Laboratory Analyses of Soil, Water, and Waste utilizing NYS ASP Protocol. The analyses include many organic and inorganic tests.
Consulting Firm Buffalo, NY	NYS DEC Statewide Standby Contract	Laboratory Analyses of Soil, Water, and Waste utilizing NYS ASP Protocol. The analyses include many organic and inorganic tests.
Consulting Firm Albany, NY	NYS DEC Statewide Standby Contract	Laboratory Analyses of Soil, Water, and Waste utilizing NYS ASP Protocol. The analyses include many organic and inorganic tests.
Consulting Firm Florham Park, NJ	Waterfront Project	EPA Level IV project with GISKEY EDD's. Groundwater and Soil are analyzed for TCL/TAL parameters.
Consulting Firm Elmwood Park, NJ	Public Utility Project	Provided analytical services in support of a Remedial Investigation, including Waste Classification and Post Excavation Analysis
Consulting Firm Trenton, NJ	Landfill Project	A US EPA superfund project requiring expedited turnaround time for water, soil, and air. The analyses include TCL/TAL, Limited Chemistry, and Air analysis by TO-14. This project is a joint effort between the USEPA Region II and the US Army, Philadelphia District.
Consulting Firm Garden City, NY	Site Remediation	Provided analytical services in support of a Site Remediation using NYS DEC ASP protocols
Consulting Firm Morris Plains, NJ	Public Utility Project	Various site investigations for petroleum contaminants and natural attenuation parameters at former manufacturing gas plants.
Consulting Firm Lebanon, NJ	Route 21 Project	Remediation project involving TCL/ TAL and TCLP analyses for soils and waters.
Consulting Firm Oakridge, TN	Airline Project	Subsurface investigation for petroleum contaminants. Parameters include PP+40, Hazardous Waste Classification, and Fingerprinting. Expedited TAT including same day results for excavation-generated samples.
Consulting Firm Morris Plains, NJ	Industrial Site Investigation	Provided analytical services in support of a Remedial Investigation under the US EPA RAC II Contract. The technical scope includes analysis of PCBs, PCB Congeners, metals, haloacetic acids and water quality parameters.
Consulting Firm Plymouth Meeting, PA	Public Utility Project	Analysis required for this site investigation is TCL/TAL for soils, waters, and sediment samples at former manufacturing gas plants.
Consulting Firm Plymouth Meeting, PA	Public Utility Project	Analysis for various site investigations for Petroleum Contaminants and Natural Attenuation parameters at former manufacturing gas plants.

Client Name	Contract Description	Project Description
Consulting Firm Morris Plains, NJ	Public Utility Company	Various site investigations and RCRA corrective action for petroleum contaminants and natural attenuation parameters at former manufacturing gas plants.
Consulting Firm Morris Plains, NJ	Industrial Site Investigation	Provided analytical services in support of a Remedial Investigation performed under the US EPA RAC II Contract. The technical scope includes analysis of PCBs, PCB Congeners, metals, haloacetic acids and water quality parameters.
Consulting Engineering Firm Exton, PA	Superfund Site Investigation	Provided same-day analytical services for TCL/TAL in support of a Remedial Investigation performed under the US EPA and US Army Corps of Engineers guidance. All data reported in a US EPA CLP format. All data reviewed and provided in ADR EDD format Tables 1A, 2A and 3A.
Consulting Firm Branchburg, NJ	Transportation Project	Provided analytical services for TCL/TAL and Classical chemistry in support of a Remedial Investigation for construction of Tunnel. Duration of project is 4 years
Consulting Firm Lebanon, NJ	Transportation Project	Remediation project involving TCL/ TAL and TCLP analyses for soils and waters.
Consulting Firm Oak Ridge, TN	Airline Project	Subsurface investigation for petroleum contaminants. Parameters include PP+40, Hazardous Waste Classification, and Fingerprinting. Expedited TAT including same day results for excavation-generated samples.
Consulting Firm Langhorne, PA	Statewide Remedial Investigation	Provided analytical services in support of various Remedial Investigation activities performed under statewide contract. The technical scope includes analysis of TCL/TAL and PA Form U disposal parameters.
Consulting Firm Long Island, NY	NYCDEP & NYPD Site Investigation	RI/FS site investigations of site that included an active firing range and exploded ordinance range. Data objectives included both soil and water analysis for TCL/TAL analysis and low-level explosive analysis.
Consulting Firm New York, NY	OK- DOT Site Investigation	Site investigation of properties acquired via eminent domain for expansion of interstate system. SW846 protocols utilized with EPA level III Deliverables
Construction Co. Cambridge, MA	Landfill Cap and Cover Analysis	Analysis of landfill cover materials to Local and State Regulatory guidance values. Express turnarounds of SW846 Protocols for TCL/TAL & TCLP parameters with deliverables in support for 3 rd party validation
Consulting Firm New York, NY	Industrial Site	Provided a cost effective alternative to a mobile lab by providing test results in less than 24 hours for a variety of organic and inorganic parameters to delineation of a former Industrial site
Consulting Firm Hunt Valley, MD	State Court House Addition	In support of a tight construction schedule, Multiple data objectives included CLP type Deliverables and disposal requirements of out of State resource. Successful in meeting timeline and multi-reporting formats Satisfying the data objectives of the numerous concerned parties

FEDERAL/STATE EXPERIENCE

Client Name	Contract Description	Project Description
US EPA Triangle Park, NC	Numerous contracts from 1983 to present	Analysis of Multimedia samples for TAL Metals and Cyanide utilizing CLP protocol
NYC Transit Authority	95F6227	Sampling and Analysis of Water, Soil, and Air at various locations.
PA of NY & NJ	PSE-688	Potable Water Analysis employing NYSDEC ASP Protocols.
Consulting Firm Richmond, VA	US EPA Regions II and III Emergency Response	Analysis of Soil, haz-waste and unknowns for remediation and disposal activities at various superfund sites under the US EPA ERSS program.
Consulting Firm Morris Plains, NJ	US EPA RAC II Contract Industrial Site Investigation	Provided analytical services in support of a Remedial Investigation performed under the US EPA RAC II Contract. The technical scope includes analysis of organic, inorganic and classical chemistry parameters. All data reported in a US EPA CLP format for full validation. EDDs provided in GIS/Key.

CHEMTECH CERTIFICATIONS, ACCREDITATION AND CONTRACTS

FEDERAL:

Agency	Status	Laboratory ID	Expiration Date
US EPA	CLP Contract	CHEMED	03/19/05
US Army HTRW- MRD	Validated (Certified)	N/A	03/02/06
US Navy – NFESC	Validated (Certified)	NFESC 413	09/04/04
USDA	Certified (Foreign Soil)	S-47647	06/30/05

STATE:

State Agency	Status	Laboratory ID	Expiration Date
New Jersey DEP	NELAP Certified	20012	06/30/04
New York State DOH - ELAP	Certified	11376	04/01/04
New York State DOH - ASP	Certified	11376	04/01/04
Pennsylvania DEP	Certified	DEP 68-548	01/15/05
Connecticut DPH	Certified	PH-0649	06/30/05
Massachusetts DEP	Certified	M-NJ 503	06/30/04
Rhode Island DOH	Certified	259	12/30/05
Maryland DHMH	Certified	MD296	06/30/04
Oklahoma DEQ	Certified	9705	08/31/04
Kansas DOH	Certified	E-NJ503	10/14/04
Arizona DHS	Certified	AZ0653	02/10/05
California DOH	Certified	03221CA	11/30/04

Private Agencies

Agency	Status	Laboratory ID	Expiration Date
American Council of Independent Laboratories (ACIL)	Seal of Excellence	321	10/13/04

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Antonia C. Novello, M.D., M.P.H., Dr.P.H.



Expires 12:01 AM April 01, 2005
Issued April 01, 2004
Revised September 23, 2004

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DIVYAJIT MEHTA
CHEMTECH CONSULTING GROUP
284 SHEFFIELD STREET
MOUNTAINSIDE NJ 07092 United States

NY Lab Id No: 11376
EPA Lab Code:

is hereby **APPROVED** as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved subcategories and/or analytes are listed below:

Drinking Water Bacteriology

Coliform, Total	SM 18-20 9222 B
Standard Plate Count	SM 18 9215B

Drinking Water Metals I

Arsenic, Total	EPA 200.7
Barium, Total	EPA 200.7
Cadmium, Total	EPA 200.7
Chromium, Total	EPA 200.7
Copper, Total	EPA 200.7
	EPA 200.9
Iron, Total	EPA 200.7
Lead, Total	EPA 200.9
Mercury, Total	EPA 245.1
Selenium, Total	EPA 200.9
Silver, Total	EPA 200.7
Sodium, Total	EPA 200.7
Zinc, Total	EPA 200.7

Drinking Water Metals II

Antimony, Total	EPA 200.9
Beryllium, Total	EPA 200.7
Nickel, Total	EPA 200.7
	EPA 200.9
Thallium, Total	EPA 200.9

Drinking Water Non-Metals

Alkalinity	SM 18-20 2320-B
Calcium Hardness	EPA 200.7
Chloride	EPA 300.0
Color	SM 18-20 2120B
Hydrogen Ion (pH)	SM 18-20 4500-H B
Solids, Total Dissolved	SM 18-20 2540C
Sulfate (as SO ₄)	EPA 300.0

Volatile Aromatics

1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2

Serial No.: 24118

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Antonia C. Novello, M.D., M.P.H., Dr.P.H.



Expires 12:01 AM April 01, 2005
Issued April 01, 2004
Revised September 23, 2004

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MR. DIVYAJIT MEHTA
CHEMTECH CONSULTING GROUP
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MOUNTAINSIDE NJ 07092 United States

NY Lab Id No: 11376
EPA Lab Code:

*is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved subcategories and/or analytes are listed below:*

Volatile Aromatics

m-Xylene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
o-Xylene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
p-Xylene	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2

Volatile Halocarbons

Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

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MR. DIVYAJIT MEHTA
CHEMTECH CONSULTING GROUP
284 SHEFFIELD STREET
MOUNTAINSIDE NJ 07092 United States

NY Lab Id No: 11376
EPA Lab Code:

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ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved subcategories and/or analytes are listed below:

Acrolein and Acrylonitrile

Acrolein	EPA 624 SW-846 8260B
Acrylonitrile	EPA 624 SW-846 8260B

Benzidines

3,3 -Dichlorobenzidine	EPA 625 SW-846 8270C
Benzidine	EPA 625 SW-846 8270C

Chlorinated Hydrocarbon Pesticides

4,4 -DDE	EPA 608 SW-846 8081A
4,4 -DDT	EPA 608 SW-846 8081A
4,4-DDD	EPA 608 SW-846 8081A
Aldrin	EPA 608 SW-846 8081A
alpha-BHC	EPA 608 SW-846 8081A
beta-BHC	EPA 608 SW-846 8081A

Chlorinated Hydrocarbon Pesticides

Chlordane Total	EPA 608 SW-846 8081A
delta-BHC	EPA 608 SW-846 8081A
Dieldrin	EPA 608 SW-846 8081A
Endosulfan I	EPA 608 SW-846 8081A
Endosulfan II	EPA 608 SW-846 8081A
Endosulfan sulfate	EPA 608 SW-846 8081A
Endrin	EPA 608 SW-846 8081A
Endrin aldehyde	EPA 608 SW-846 8081A
Heptachlor	EPA 608 SW-846 8081A
Heptachlor epoxide	EPA 608 SW-846 8081A
Lindane	EPA 608 SW-846 8081A
Methoxychlor	EPA 608

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Chlorinated Hydrocarbon Pesticides

Methoxychlor	SW-846 8081A
Toxaphene	EPA 608
	SW-846 8081A

Demand

Biochemical Oxygen Demand	EPA 405.1
Chemical Oxygen Demand	EPA 410.1
	EPA 410.4
	SM 18-20 5220 D

Chlorinated Hydrocarbons

1,2,4-Trichlorobenzene	EPA 625
	SW-846 8270C
2-Chloronaphthalene	EPA 625
	SW-846 8270C
Hexachlorobenzene	EPA 625
	SW-846 8270C
Hexachlorobutadiene	EPA 625
	SW-846 8270C
Hexachlorocyclopentadiene	EPA 625
	SW-846 8270C
Hexachloroethane	EPA 625
	SW-846 8270C

Haloethers

4-Bromophenylphenyl ether	EPA 625
	SW-846 8270C
4-Chlorophenylphenyl ether	EPA 625
	SW-846 8270C
Bis (2-chloroisopropyl) ether	EPA 625
	SW-846 8270C
Bis(2-chloroethoxy)methane	EPA 625
	SW-846 8270C
Bis(2-chloroethyl)ether	EPA 625
	SW-846 8270C

Chlorophenoxy Acid Pesticides

2,4,5-T	SW-846 8151A
2,4,5-TP (Silvex)	SW-846 8151A
2,4-D	SW-846 8151A
Dicamba	SW-846 8151A

Mineral

Alkalinity	EPA 310.1
	SM 18-20 2320-B
Chloride	EPA 300.0
	EPA 325.3
	SM 18-20 4500-Cl C
Fluoride, Total	EPA 340.2

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Mineral		Nitrosoamines	
Fluoride, Total	SM 18-20 4500-F-C	N-Nitrosodiphenylamine	EPA 625
Hardness, Total	EPA 130.2		SW-846 8270C
	EPA 200.7		
Sulfate (as SO ₄)	EPA 300.0	Nutrient	
	EPA 375.4	Ammonia (as N)	EPA 350.1
			EPA 350.2
			EPA 350.3
Nitroaromatics and Isophorone			SM19-20 4500-NH ₃ E
2,4-Dinitrotoluene	EPA 625		EPA 351.1
	SW-846 8270C	Kjeldahl Nitrogen, Total	SM 18 4500-NH ₃ C
	SW-846 8330		SM19-20 4500-NH ₃ E
2,6-Dinitrotoluene	EPA 625		EPA 300.0
	SW-846 8270C	Nitrate (as N)	EPA 353.2
	SW-846 8330		EPA 353.3
Isophorone	EPA 625		SM 18-20 4500-NO ₃ E
	SW-846 8270C		SM 18-20 4500-NO ₃ F
Nitrobenzene	EPA 625		EPA 300.0
	SW-846 8270C	Nitrite (as N)	SM 18-20 4500-NO ₂ B
	SW-846 8330		EPA 365.3
Nitrosoamines		Orthophosphate (as P)	SM 18-20 4500-P E
N-Nitrosodimethylamine	EPA 625		EPA 365.2
	SW-846 8270C	Phosphorus, Total	SM 18-20 4500-P E
N-Nitrosodi-n-propylamine	EPA 625		
	SW-846 8270C		

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Phthalate Esters

Benzyl butyl phthalate	EPA 625
	SW-846 8270C
Bis(2-ethylhexyl) phthalate	EPA 625
	SW-846 8270C
Diethyl phthalate	EPA 625
	SW-846 8270C
Dimethyl phthalate	EPA 625
	SW-846 8270C
Di-n-butyl phthalate	EPA 625
	SW-846 8270C
Di-n-octyl phthalate	EPA 625
	SW-846 8270C

Polychlorinated Biphenyls

PCB-1254	EPA 608
	SW-846 8082
PCB-1260	EPA 608
	SW-846 8082

Polynuclear Aromatics

Acenaphthene	EPA 625
	SW-846 8270C
	SW-846 8310
Acenaphthylene	EPA 625
	SW-846 8270C
	SW-846 8310
Anthracene	EPA 625
	SW-846 8270C
	SW-846 8310

Polychlorinated Biphenyls

PCB-1016	EPA 608
	SW-846 8082
PCB-1221	EPA 608
	SW-846 8082
PCB-1232	EPA 608
	SW-846 8082
PCB-1242	EPA 608
	SW-846 8082
PCB-1248	EPA 608
	SW-846 8082

Benzo(a)anthracene	EPA 625
	SW-846 8270C
	SW-846 8310
Benzo(a)pyrene	EPA 625
	SW-846 8270C
	SW-846 8310
Benzo(b)fluoranthene	EPA 625
	SW-846 8270C
	SW-846 8310

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Polynuclear Aromatics

Benzo(ghi)perylene	EPA 625
	SW-846 8270C
	SW-846 8310
Benzo(k)fluoranthene	EPA 625
	SW-846 8270C
	SW-846 8310
Chrysene	EPA 625
	SW-846 8270C
	SW-846 8310
Dibenzo(a,h)anthracene	EPA 625
	SW-846 8270C
	SW-846 8310
Fluoranthene	EPA 625
	SW-846 8270C
	SW-846 8310
Fluorene	EPA 625
	SW-846 8270C
	SW-846 8310
Indeno(1,2,3-cd)pyrene	EPA 625
	SW-846 8270C
	SW-846 8310
Naphthalene	EPA 625
	SW-846 8270C

Polynuclear Aromatics

Naphthalene	SW-846 8310
Phenanthrene	EPA 625
	SW-846 8270C
	SW-846 8310
Pyrene	EPA 625
	SW-846 8270C
	SW-846 8310

Priority Pollutant Phenols

2,4,5-Trichlorophenol	EPA 625
	OLM 4.2 BNA
	SW-846 8270C
2,4,6-Trichlorophenol	EPA 625
	SW-846 8270C
2,4-Dichlorophenol	EPA 625
	SW-846 8270C
2,4-Dimethylphenol	EPA 625
	SW-846 8270C
2,4-Dinitrophenol	EPA 625
	SW-846 8270C
2-Chlorophenol	EPA 625
	SW-846 8270C
2-Methyl-4,6-dinitrophenol	EPA 625
	SW-846 8270C

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Priority Pollutant Phenols

2-Nitrophenol	EPA 625 SW-846 8270C
4-Chloro-3-methylphenol	EPA 625 SW-846 8270C
4-Nitrophenol	EPA 625 SW-846 8270C
Pentachlorophenol	EPA 625 SW-846 8270C
Phenol	EPA 625 SW-846 8270C

Purgeable Aromatics

1,3-Dichlorobenzene	SW-846 8260B
1,4-Dichlorobenzene	EPA 601 EPA 602 EPA 624 EPA 625 SW-846 8021B SW-846 8260B
Benzene	EPA 602 EPA 624 SW-846 8260B

Purgeable Aromatics

1,2-Dichlorobenzene	EPA 601 EPA 602 EPA 624 EPA 625 SW-846 8021B SW-846 8260B SW-846 8270C
1,3-Dichlorobenzene	EPA 601 EPA 602 EPA 624 EPA 625 SW-846 8021B

Chlorobenzene

Ethyl benzene

Toluene

Total Xylenes

EPA 601 EPA 602 EPA 624 SW-846 8260B EPA 602 EPA 624 SW-846 8021B SW-846 8260B EPA 602 EPA 624 SW-846 8021B SW-846 8260B EPA 602

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Purgeable Aromatics

Total Xylenes EPA 624
SW-846 8021B
SW-846 8260B

Purgeable Halocarbons

1,1-Dichloroethene SW-846 8260B
1,2-Dichloroethane EPA 601
EPA 624
SW-846 8021B

Purgeable Halocarbons

1,1,1-Trichloroethane EPA 601
EPA 624
SW-846 8021B
SW-846 8260B

1,2-Dichloropropane EPA 601
EPA 624
SW-846 8021B
SW-846 8260B

1,1,2,2-Tetrachloroethane EPA 601
EPA 624
SW-846 8021B
SW-846 8260B

2-Chloroethylvinyl ether EPA 601
EPA 624
SM 18-19 6230B
SW-846 8260B

1,1,2-Trichloroethane EPA 601
EPA 624
SW-846 8021B
SW-846 8260B

Bromodichloromethane EPA 601
EPA 624
SW-846 8021B
SW-846 8260B

1,1-Dichloroethane EPA 601
EPA 624
SW-846 8021B
SW-846 8260B

Bromoform EPA 601
EPA 624
SW-846 8021B
SW-846 8260B

1,1-Dichloroethene EPA 601
EPA 624
SW-846 8021B

Bromomethane EPA 601
SW-846 8021B

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Purgeable Halocarbons

Bromomethane	SW-846 8260B
Carbon tetrachloride	EPA 601
	EPA 624
	SW-846 8021B
	SW-846 8260B
Chloroethane	EPA 601
	EPA 624
	SW-846 8021B
	SW-846 8260B
Chloroform	EPA 601
	EPA 624
	SW-846 8021B
	SW-846 8260B
Chloromethane	EPA 601
	EPA 624
	SW-846 8021B
	SW-846 8260B
cis-1,3-Dichloropropene	EPA 601
	EPA 624
	SW-846 8021B
	SW-846 8260B
Dibromochloromethane	EPA 601
	EPA 624

Purgeable Halocarbons

Dibromochloromethane	SW-846 8021B
	SW-846 8260B
Dichlorodifluoromethane	EPA 601
	EPA 624
	SW-846 8021B
	SW-846 8260B
Methylene chloride	EPA 601
	EPA 624
	SW-846 8021B
	SW-846 8260B
Tetrachloroethene	EPA 601
	EPA 624
	SW-846 8021B
	SW-846 8260B
trans-1,2-Dichloroethene	EPA 601
	EPA 624
	SW-846 8021B
	SW-846 8260B
trans-1,3-Dichloropropene	EPA 601
	EPA 624
	SW-846 8021B
	SW-846 8260B
Trichloroethene	EPA 601

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Purgeable Halocarbons

Trichloroethene EPA 624
SW-846 8021B
SW-846 8260B

Trichlorofluoromethane EPA 601
EPA 624
SW-846 8021B
SW-846 8260B

Vinyl chloride EPA 601
EPA 624
SW-846 8021B
SW-846 8260B

Residue

Solids, Total EPA 160.3
SM 18-20 2540B

Solids, Total Dissolved EPA 160.1
SM 18-20 2540C

Solids, Total Suspended EPA 160.2
SM 18-20 2540D

TCLP Additional Compounds

Cresol SW-846 8270C
Methylethyl ketone (2-butanone) SW-846 8015 B
SW-846 8260B

TCLP Additional Compounds

Pyridine SW-846 8270C

Wastewater Bacteriology

Coliform, fecal SM 18-20 9221 E
SM 18-20 9222 D
Coliform, Total SM 18-20 9221B
SM 18-20 9222 B
Standard Plate Count SM 18 9215B

Wastewater Metals I

Barium, Total ASTM D4382-91
EPA 200.7
EPA 200.8

Cadmium, Total

SM 18-19 3111B
SM 18-19 3113B
SM 18-20 3120B
SW-846 3010A
SW-846 6010B
EPA 200.7
EPA 213.1
EPA 213.2
SM 18-19 3111B
SM 18-19 3111C
SM 18-19 3113B

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Wastewater Metals I

Cadmium, Total	SM 18-20 3120B
	SW-846 3010A
	SW-846 6010B
Calcium, Total	EPA 200.7
	SW-846 3010A
	SW-846 6010B
Chromium, Total	EPA 200.7
	SM 18-19 3111C
	SM 18-19 3113B
	SM 18-20 3120B
	SW-846 3010A
	SW-846 6010B
Copper, Total	ASTM D1688-90B
	EPA 200.7
	EPA 200.9
	EPA 220.1
	EPA 220.2
	SM 18-19 3111B
	SM 18-19 3111C
	SM 18-19 3113B
	SM 18-20 3120B
	SW-846 3010A
	SW-846 6010B

Wastewater Metals I

Iron, Total	EPA 200.7
	EPA 236.1
	EPA 236.2
	SM 18-19 3111B
	SM 18-19 3111C
	SM 18-19 3113B
	SM 18-20 3120B
	SW-846 3010A
	SW-846 6010B
Lead, Total	EPA 200.7
	EPA 239.1
	EPA 239.2
	SM 18-19 3111C
	SM 18-19 3113B
	SM 18-20 3120B
	SW-846 3010A
	SW-846 6010B
Magnesium, Total	EPA 200.7
	SM 18-19 3111B
	SW-846 3010A
	SW-846 6010B
Manganese, Total	ASTM D858-90C
	EPA 200.7

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Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DIVYAJIT MEHTA
CHEMTECH CONSULTING GROUP
284 SHEFFIELD STREET
MOUNTAINSIDE NJ 07092 United States

NY Lab Id No: 11376
EPA Lab Code:

*is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved subcategories and/or analytes are listed below:*

Wastewater Metals I

Manganese, Total

EPA 243.1
EPA 243.2
SM 18-19 3111B
SM 18-19 3113B
SM 18-20 3120B
SW-846 3010A
SW-846 6010B

Nickel, Total

EPA 200.7
EPA 249.1
EPA 249.2
SM 18-19 3111B
SM 18-19 3111C
SM 18-19 3113B

Potassium, Total

SM 18-20 3120B
SW-846 3010A
SW-846 6010B
EPA 200.7
SM 18-19 3111B
SM 18-20 3120B
SW-846 3010A
SW-846 6010B

Silver, Total

EPA 200.7
SM 18-19 3111B

Wastewater Metals I

Silver, Total

SM 18-19 3111C
SM 18-19 3113B
SM 18-20 3120B
SW-846 3005A
SW-846 6010B

Sodium, Total

EPA 200.7
SM 18-19 3111B
SM 18-20 3120B
SW-846 3005A
SW-846 3010A
SW-846 6010B

Wastewater Metals II

Aluminum, Total

EPA 200.7
EPA 202.1
EPA 202.2
SM 18-19 3111B
SM 18-20 3120B
SW-846 3005A
SW-846 3010A
SW-846 6010B

Antimony, Total

EPA 200.7
EPA 204.1
EPA 204.2

Serial No.: 24128

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Antonia C. Novello, M.D., M.P.H., Dr.P.H.



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ENVIRONMENTAL ANALYSES NON POTABLE WATER
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Wastewater Metals II

Antimony, Total

SM 18-19 3111B

SM 18-20 3120B

SW-846 3005A

SW-846 6010B

Arsenic, Total

EPA 200.7

EPA 206.2

EPA 206.5

SM 18-19 3113B

SM 18-20 3120B

SW-846 3010A

SW-846 6010B

Beryllium, Total

EPA 200.7

EPA 210.1

EPA 210.2

SM 18-19 3111B

SM 18-19 3113B

SM 18-20 3120B

SW-846 3010A

SW-846 6010B

Chromium VI

SM 18-19 3111C

SW-846 7196A

Mercury, Total

EPA 245.1

SM 18-19 3112B

Wastewater Metals II

Mercury, Total

SW-846 7470A

Selenium, Total

EPA 200.7

EPA 270.2

SM 18-19 3113B

SM 18-20 3120B

SW-846 3010A

SW-846 6010B

Vanadium, Total

EPA 200.7

EPA 286.2

SM 18-20 3120B

SW-846 3010A

SW-846 6010B

Zinc, Total

EPA 200.7

EPA 289.1

EPA 289.2

SM 18-19 3111B

SM 18-19 3111C

SM 18-20 3120B

SW-846 3010A

SW-846 6010B

Wastewater Metals III

Cobalt, Total

ASTM D3558-90C

EPA 200.7

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ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved subcategories and/or analytes are listed below:*

Wastewater Metals III

Cobalt, Total

EPA 219.1
EPA 219.2
SM 18-19 3111B
SM 18-19 3111C
SM 18-19 3113B
SM 18-20 3120B
SW-846 3010A
SW-846 6010B

Molybdenum, Total

EPA 200.7
EPA 246.1
EPA 246.2
SM 18-19 3111B
SM 18-19 3113B
SM 18-20 3120B
SW-846 3005A
SW-846 6010B

Thallium, Total

EPA 200.7
EPA 279.2
SM 18-20 3120B
SW-846 3010A
SW-846 6010B

Wastewater Miscellaneous

Boron, Total

EPA 200.7

Wastewater Miscellaneous

Boron, Total

SM 18-20 3120B

SW-846 6010B

Bromide

EPA 300.0

EPA 320.1

Color

EPA 110.2

Cyanide, Total

EPA 335.2

SM 18-20 4500-CN D

SM 18-20 4500-CN E

SW-846 9010B

SW-846 9012A

Hydrogen Ion (pH)

EPA 150.1

SM 18-20 4500-H B

SW-846 9040B

Oil & Grease Total Recoverable

EPA 413.1

Organic Carbon, Total

EPA 415.1

SM 18-20 5310 B

SM 18-20 5310 C

SM 18-20 5310 D

Phenols

EPA 420.1

Specific Conductance

EPA 120.1

SM 18-20 2510B

Sulfide (as S)

EPA 376.1

SM 18 4500-S E

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All approved subcategories and/or analytes are listed below:

Wastewater Miscellaneous

Sulfide (as S)	SW-846 9030B
	SW-846 9034
Surfactant (MBAS)	EPA 425.1
	SM 18-20 5540 C
Temperature	EPA 170.1
	SM 18-20 2550B

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ENVIRONMENTAL ANALYSES ANALYTICAL SERVICES PROTOCOL
All approved subcategories and/or analytes are listed below:*

CLP PCB/Pesticides
CLP Semi-Volatile Organics
CLP Volatile Organics
CLP Inorganics

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NY Lab Id No: 11376
EPA Lab Code:

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:*

Metals I

Barium, Total	SW-846 6010B
Cadmium, Total	SW-846 6010B
Chromium, Total	SW-846 6010B
Lead, Total	SW-846 6010B
Nickel, Total	SW-846 6010B
Silver, Total	SW-846 6010B

Metals II

Antimony, Total	SW-846 6010B
Arsenic, Total	SW-846 6010B
Chromium VI	SW-846 7196A
Mercury, Total	SW-846 7471A
Selenium, Total	SW-846 6010B

Miscellaneous

Cyanide, Total	SW-846 9010B
	SW-846 9012A
Hydrogen Ion (pH)	SW-846 9040B
	SW-846 9045C
Sulfide (as S)	SW-846 9030B

Nitroaromatics and Isophorone

2,4-Dinitrotoluene	SW-846 8270C
2,6-Dinitrotoluene	SW-846 8270C
Isophorone	OLM 4.2 BNA

Nitroaromatics and Isophorone

Isophorone	SW-846 8270C
Nitrobenzene	SW-846 8270C

Phthalate Esters

Benzyl butyl phthalate	SW-846 8270C
Bis(2-ethylhexyl) phthalate	SW-846 8270C
Diethyl phthalate	SW-846 8270C
Dimethyl phthalate	SW-846 8270C
Di-n-butyl phthalate	SW-846 8270C
Di-n-octyl phthalate	SW-846 8270C

Polychlorinated Biphenyls

PCB-1016	SW-846 8082
PCB-1221	SW-846 8082
PCB-1232	SW-846 8082
PCB-1242	SW-846 8082
PCB-1248	SW-846 8082
PCB-1254	SW-846 8082
PCB-1260	SW-846 8082

Polynuclear Aromatic Hydrocarbons

Acenaphthene	SW-846 8270C
Acenaphthylene	SW-846 8270C
Anthracene	SW-846 8270C
Benzo(a)anthracene	SW-846 8270C

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:*

Polynuclear Aromatic Hydrocarbons

Benzo(a)pyrene	SW-846 8270C
Benzo(b)fluoranthene	SW-846 8270C
Benzo(ghi)perylene	SW-846 8270C
Chrysene	SW-846 8270C
Dibenzo(a,h)anthracene	SW-846 8270C
Fluoranthene	SW-846 8270C
Fluorene	SW-846 8270C
Indeno(1,2,3-cd)pyrene	SW-846 8270C
Naphthalene	SW-846 8270C
Phenanthrene	SW-846 8270C
Pyrene	SW-846 8270C

Priority Pollutant Phenols

2,4,6-Trichlorophenol	SW-846 8270C
2,4-Dichlorophenol	SW-846 8270C
2,4-Dimethylphenol	SW-846 8270C
2,4-Dinitrophenol	SW-846 8270C
2-Chlorophenol	SW-846 8270C
2-Methyl-4,6-dinitrophenol	SW-846 8270C
2-Nitrophenol	SW-846 8270C
4-Chloro-3-methylphenol	SW-846 8270C
4-Nitrophenol	SW-846 8270C
Pentachlorophenol	SW-846 8270C
Phenol	SW-846 8270C

Purgeable Aromatics

1,2-Dichlorobenzene	SW-846 8021B
	SW-846 8260B
1,3-Dichlorobenzene	SW-846 8021B
	SW-846 8260B
1,4-Dichlorobenzene	SW-846 8021B
	SW-846 8260B
Benzene	SW-846 8021B
	SW-846 8260B
Chlorobenzene	SW-846 8021B
	SW-846 8260B
Ethyl benzene	SW-846 8021B
	SW-846 8260B
Toluene	SW-846 8021B
	SW-846 8260B
Total Xylenes	SW-846 8021B
	SW-846 8260B

Purgeable Halocarbons

1,1,1-Trichloroethane	SW-846 8021B
	SW-846 8260B
1,1,2,2-Tetrachloroethane	SW-846 8021B
	SW-846 8260B
1,1,2-Trichloroethane	SW-846 8021B
	SW-846 8260B

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Purgeable Halocarbons

1,1-Dichloroethane	SW-846 8021B
	SW-846 8260B
1,1-Dichloroethene	SW-846 8021B
	SW-846 8260B
1,2-Dichloroethane	SW-846 8021B
	SW-846 8260B
1,2-Dichloropropane	SW-846 8021B
	SW-846 8260B
2-Chloroethylvinyl ether	SW-846 8021B
	SW-846 8260B
Bromodichloromethane	SW-846 8021B
	SW-846 8260B
Bromoform	SW-846 8021B
	SW-846 8260B
Bromomethane	SW-846 8021B
	SW-846 8260B
Carbon tetrachloride	SW-846 8021B
	SW-846 8260B
Chloroethane	SW-846 8021B
	SW-846 8260B
Chloroform	SW-846 8021B
	SW-846 8260B
Chloromethane	SW-846 8021B

Purgeable Halocarbons

Chloromethane	SW-846 8250B
cis-1,3-Dichloropropene	SW-846 8250B
Dibromochloromethane	SW-846 8021B
	SW-846 8250B
Dichlorodifluoromethane	SW-846 8021B
	SW-846 8250B
Methylene chloride	SW-846 8021B
	SW-846 8250B
Tetrachloroethene	SW-846 8021B
	SW-846 8250B
trans-1,3-Dichloropropene	SW-846 8250B
Trichloroethene	SW-846 8021B
	SW-846 8250B
Trichlorofluoromethane	SW-846 8021B
	SW-846 8250B
Vinyl chloride	SW-846 8021B
	SW-846 8250B

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ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Purgeable Aromatics

1,2-Dichlorobenzene	EPA TO-14A
1,4-Dichlorobenzene	EPA TO-14A
Benzene	EPA TO-14A
Chlorobenzene	EPA TO-14A
Ethyl benzene	EPA TO-14A
Toluene	EPA TO-14A
Total Xylenes	EPA TO-14A

Purgeable Halocarbons

1,1,2,2-Tetrachloroethane	EPA TO-14A
1,1-Dichloroethene	EPA TO-14A
1,2-Dichloroethane	EPA TO-14A
1,2-Dichloropropane	EPA TO-14A
Carbon tetrachloride	EPA TO-14A
Chloroform	EPA TO-14A
Methylene chloride	EPA TO-14A
Tetrachloroethene	EPA TO-14A
Vinyl chloride	EPA TO-14A

Serial No.: 22862

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DOH-3317 (3/97)



QUALITY ASSURANCE/QUALITY CONTROL PLAN

**Remediation of National Heatset Printers
1 Adams Boulevard
Farmingdale, NY**

**Contract No. D005272
Site No. 1-52-140
Suffolk, New York**

Prepared for:

**New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 12233-7010**

Prepared by:

**EnviroTrac Ltd.
80 B Air Park Drive,
Ronkonkoma, NY 11779**

May 2005



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1.0 INTRODUCTION

This Quality Assurance/Quality Control Plan (QA/QC PLAN) describes the Quality System initiated to assure that the work performed complies with the requirements of the contract specifications for the work to be performed at the National Heatset Printing Property, located in Farmingdale, Suffolk County, New York (Site).. The quality system will ensure that the highest quality of service is provided to the New York State Department of Conservation (NYSDEC) during all phases of the Project performed by EnviroTrac.

2.0 MANAGEMENT RESPONSIBILITY

2.1 Quality Policy

The management of EnviroTrac is committed to providing products and services which are error-free and which meets the needs and exceed the expectations of our internal and external customers.

It is the policy of EnviroTrac to establish and maintain an effective quality system from which only consistent error-free output can result. To this end, all processes must be fully defined and documented and all personnel must be trained in its operation. It is management's responsibility to provide necessary tools and training, to engender an atmosphere that ensures people empowerment, and to periodically review the quality system making or approving changes as necessary.

The functional organization of the Quality Control team for the Project is shown in Figure 1. The responsibility, authority, and interrelationship of all personnel who manage, perform and verify work affecting quality will be best served through organizational charts or in operating procedures.

2.2 Responsibility and Authority

The Quality Assurance/Quality Control (QA/QC) Officer is responsible for overall QA/QC management to ensure compliance with the contract specifications. The QA/QC Officer has the authority to act in all QA/QC, QA/QC matters and is to report directly to the Quality Control Manager and NYSDEC representatives (Construction Manager/Engineer).

The QA/QC officer will be designated by EnviroTrac before start of a specific individual project unit. The QA/QC officer for the well installation portion of the job will be Robert Szczepanski and during the Construction section the QA/QC officer will be Jim Byrnes. The QA/QC Officer will be

on-site whenever work is in progress. QA/QC alternates will be designated to act accordingly when the primary Officer is not present at the sites. Resumes, including qualifications are attached in the Work Plan and Health and Safety Plan.

The designated QA/QC officer is directly responsible for:

- A. Initiating action to prevent the occurrence of nonconforming product.
- B. Identifying and recording any product quality problems.
- C. Initiating, recommending, or providing solutions through designated channels.
- D. Verifying implementation of solutions.

2.3 Management Representative

The Quality Manager is primarily responsible for ensuring that the requirements of the Quality System standards are implemented and maintained.

2.4 Quality System Management Review

The purpose of the review is the following:

- Ensure continuing suitability and effectiveness of the Quality System
- Identify changes
- Institute improvements required to meet project needs

The management review will include, but not be limited to, the following aspects:

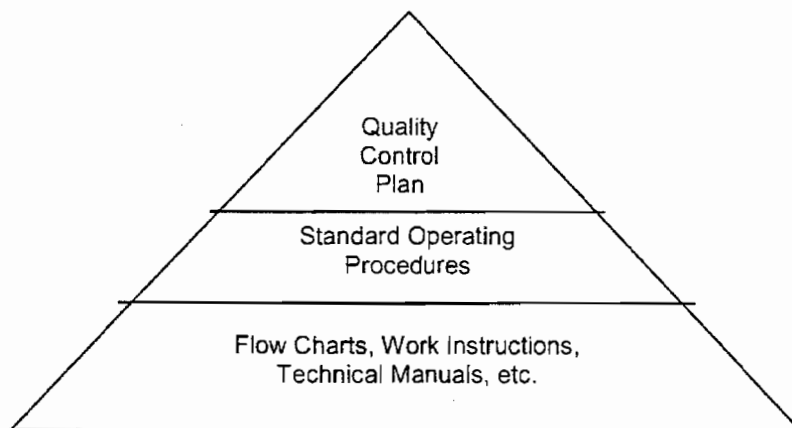
- Customer Satisfaction – deliver, service, support, etc.
- Training
- Supplier and Subcontractor Evaluation
- Internal Audit, etc.
- Records of such reviews will be maintained at EnviroTrac.

3.0 QUALITY SYSTEM

The Quality System at EnviroTrac includes the procedures for quality control described in this plan. Implementation of the Quality system is through common standard operating procedures supported by product review processes, departmental procedures, necessary work instructions, and process flow charts.

This QA/QC PLAN serves as the primary reference document for all activities related to the Project quality and is used for assessing the effectiveness of the Quality System. The Quality System described in the QA/QC PLAN applies to all products and services provided in the contract.

Quality System Configuration:



4.0 CONTRACT REVIEW

EnviroTrac will review the contract upon receipt to ensure that the requirements are adequately defined and documented sufficiently to allow production, installation and maintenance of the product and services required. Review will verify that EnviroTrac is capable of what has been contracted for. Amendments to the contract will be similarly reviewed. Records of contract reviews will be kept by EnviroTrac.

5.0 DOCUMENT AND DATA CONTROL

5.1 Document Approval and Issue

All controlled documents (construction drawings, processing instructions, procurement, data/specifications, etc.) affecting product quality will be reviewed and approved for adequacy by authorized personnel prior to their release and distribution. This ensures that they will be available at all locations where they are essential to the effective functioning of the quality system.

Copies of controlled documents that are distributed to people other than those who need the document for their work will be marked "copy". Documents marked "copy" will be considered uncontrolled. Obsolete controlled documents will be promptly removed from all points of issue or use.

5.2 Document Changes / Modifications

Changes to controlled documents will be reviewed and approved by the same function/organizations that performed the original review and approval unless specifically designated otherwise.

The designated function/organizations will have access to background information for the review and change approval.

Where practicable, and explanation of the change will be recorded in the document or the appropriate attachments.

A master list or equivalent document control procedure will be established to identify the current revision of documents in order to preclude the use of non-applicable documents. Documents will be reissued when appropriate.

5.3 Distribution

Distribution of documents will be documented and controlled. All documents will be controlled under the jurisdiction of the issuing department.

6.0 PURCHASING

6.1 General

The company will ensure that purchased components and subassemblies conform to specified requirements, by the following:

- A. Suppliers will be selected based on their abilities, such as quality, delivery, cost, and service;
- B. Purchased components will be verified and tested through the incoming inspection process, if applicable;
- C. New components will be evaluated and qualified by Engineering in accordance with its Product Review process.

6.2 Assessment of Suppliers/Subcontractors

Suppliers and Subcontractors will be selected based on their ability to provide products that meet the specifications and be listed as approved. Performance history will give an indication whether or not a subcontractor will be listed as approved to be used for the Project. Potential suppliers/subcontractors will be jointly selected and reviewed by the appropriate departments. Supplier/subcontractor surveys will be performed as necessary. The following quality records will be used to assess their capability and performance:

- Incoming inspection data
- Vendor Rating System
- Source inspection/audit

A written record of approved suppliers and subcontractors will be maintained. Corrective action will be taken if a supplier/subcontractor provides defective material or services. A supplier/subcontractor will be removed from the approved list if corrective action is not complied with.

6.3 Purchasing Data

Specifications and drawings will be required to define the specified requirements for all purchased components. When necessary purchasing data will contain the title, number, and issue of the Quality System Standard to be applied to the product.

Purchase orders will be reviewed and controlled by the Purchasing Department.

6.4 Verification of Purchased Product

The purchased product will be evaluated at through inspection, testing, and/or verification data as required.

Verification by NYSDEC or their representative will not absolve EnviroTrac of the responsibility to provide an acceptable product. When NYSDEC or a representative performs verification at the Project site, such verification may not be used as evidence of an effective control of quality.

7.0 CONTROL OF CUSTOMER-SUPPLIED PRODUCT

Customer supplied products will be handled and procedurally controlled on an individual basis. Any such product that is lost, damaged, or unsuitable for use will be recorded and reported to the customer.

8.0 PROCESS CONTROL

8.1 General

Procedures will be in place to identify and plan the installation and servicing processes which directly affect quality to ensure they are conducted under controlled conditions. The conditions will be controlled by:

- Monitoring of process and product characteristics
- Approval of process and equipment, where required
- Expected levels of workmanship quality

Processes which by their nature can not be fully verified by subsequent inspection or testing will be carried out by qualified operators and/or will require continuous monitoring and control of process parameters to ensure specifications are met. Appropriate records will be maintained for qualified equipment, personnel, and processes.

9.0 INSPECTION AND TESTING

9.1 Preparatory Inspection

Prior to the onset of each task, preparatory inspections will be performed to ensure that specific requirements are addressed. Preparatory inspections for applicable tasks include:

- a) review of submittal requirements and all other contract requirements with the performance of work;
- b) check to assure that provisions have been made to provide required field work control testing;
- c) examine the work area to ascertain that all preliminary work has been completed;
- d) verify all field dimensions and advise the Construction Manager/Engineer of any discrepancies;
- e) perform a physical examination of materials and equipment to assure that all required materials and/or equipment are on hand and comply with contract requirements.

9.2 Inspection and Testing of Received Materials

All incoming materials will be processed and verified upon receipt for condition, identification and compliance with the specification through receiving and incoming inspection, as required, prior to release for installation.

9.3 Process Inspection and Testing

An initial inspection will be performed as soon as work begins for each specific task. Inspections will include examination of the quality of workmanship as well as review of control testing for compliance with control requirements. In addition to inspections, construction quality control will include testing by an Engineer approved independent testing laboratories, where required. EnviroTrac will coordinate all testing so as to minimize delays in the work. Results will be reported to the Engineer as required and as soon as they are available.

All product will be inspected, tested, and identified in accordance with documented procedures.

All in-process testing will be done in accordance with approved test procedures.

All nonconforming product will be identified and handled in accordance with documented repair procedures.

9.4 Final Inspection and Testing

Follow-up inspections will be performed continuously as specific tasks progress to ensure compliance with Contract requirements, including control testing, until completion of that specific task.

Inspection and testing will be done in accordance with documented procedures.

No product will be released until all activities specified in these documented procedures have been satisfactorily completed, verified and recorded.

9.5 Inspection and Test Records

Records will be maintained that provide evidence that the product has passed inspection and test with defined acceptance criteria. Records shall be submitted in accordance with the Contract Documents. Written reports of each field inspection, test or similar service will include but not be limited to the following:

- Name of the testing agency or laboratory
- Dates and location of samples, tests or inspections
- Names of individuals performing the inspection or test
- Designation of the work and test method
- Complete inspection of test data
- Test results
- Interpretation of test results
- Notation of conditions at the time of sample-taking and testing
- Comments regarding tested work in compliance with Contract Documents
- Recommendations for re-testing, if necessary
- Corrective actions taken, if required

Corrective action records (reports) shall be submitted to the NYSDEC via the Engineer. The Engineer, on behalf of the Department, will approve corrective actions before there is a change in procedure.

CONTROL OF INSPECTION, MEASURING AND TEST EQUIPMENT

EnviroTrac will control, calibrate and maintain inspection, measuring and test equipment to ensure the conformance of product to the specified requirements.

- A. Appropriate inspection, measuring and test equipment will be selected based upon the measurements and accuracy needs.
- B. All inspection, measuring and test equipment that can affect product quality will be calibrated at regular intervals as required or prior to use in accordance with the manufacturers recommended procedures and be tested against certified equipment (e.g. National Institute of Standards and Technology).
- C. Equipment will be calibrated to Manufacturers specifications using written procedures that clearly define test methods, acceptance criteria and the actions to be taken when results are unsatisfactory.
- D. Ensure equipment to be capable of the accuracy and precision necessary.
- E. Calibration records for inspection, measuring and test equipment will be maintained.
- F. The validity of previous inspection and test results will be assessed when inspection, measuring, and test equipment is found to be out of calibration.
- G. Environmental conditions will be ensured to be suitable for the type of calibrations, inspections, measurements, and tests being taken.
- H. Equipment will be handled and stored in such a manner to ensure that its accuracy and fitness for use is maintained.
- I. Safeguards will be in place to protect both test hardware and software from adjustments that would invalidate the calibration settings.

10.0 INSPECTION AND TEST STATUS

A system will be maintained to identify the inspection and test status of product through the process procedure by using tags, authorized stamps, labels routing cards, inspection records, physical location, or other suitable tools to show the conformance or nonconformance of product with regard to inspection and tests performed.

Acceptance of finished product will be verified and validated by the inspection authority after ensuring that all previous inspection and process stages have been accepted and validated. When stamps are used to identify the inspection and test status, they will be designed to identify the inspection authority issuing the status. Figure 2 is provided as a proposed inspection checklist and daily reporting form.

11.0 CONTROL OF NONCONFORMING PRODUCT

11.1 General

Nonconforming material will be identified and clearly segregated to prevent inadvertent use, shipment, or inclusion with conforming items. Procedures will provide for identification, segregation when practical, documentation, evaluation, and disposition of nonconforming product. Notification to the relevant departments will be also documented.

11.2 Nonconformity Review and Disposition

The responsibility for reviewing nonconforming product and deciding on the proper course of action lies with the Quality Department. Nonconforming product will be reviewed and then dispositioned according to the following:

- A. Rework to meet specified requirements
- B. Accept with or without repair by concession
- C. Scrap

Items that are reworked or repaired must be reinspected or retested for compliance with applicable standards and test procedures.

12.0 CORRECTIVE AND PREVENTIVE ACTION

Corrective actions will be made if inspections indicate that a task is being performed in such a manner not defined within the contract or a test indicates that construction does not meet specifications. Corrective actions will be addressed by the QA/QC officer with the approval of the Engineer.

Procedures will be implemented to ensure the following:

- Nonconforming parts and products will be investigated to determine the root cause. Effective corrective action will be taken to prevent recurrence of the nonconformance.
- Preventative actions will be initiated at the earliest possible point or stage in the process.
- All corrective actions will be cataloged and reviewed to ensure effective corrective actions have been taken.
- Records will be kept of corrective actions, including any resulting change in procedures.

13.0 HANDLING, STORAGE, PACKAGING AND DELIVERY

13.1 General

Procedures have been established at EnviroTrac to coordinate the movement, handling, storage, packaging, and delivery of all construction and installation material, if applicable, from receipt through work-in-process, to shipment, in a manner that does not compromise the quality of the product.

13.2 Handling

The procedure includes methods and means of handling in accordance with manufactures recommendation so that damage or deterioration is prevented.

13.3 Storage

The procedure is maintained to provide secure storage areas or stock rooms to prevent physical damage or deterioration due to shelf life of all construction and installation material pending use or delivery. Where applicable, these areas are to be accessible to authorized personnel only.

13.4 Packaging and Delivery

The procedures are maintained to ensure that all construction and installation material are packaged (if required) according to the manufacturers requirements. Where contract specifies special packing requirements, procedures exist to ensure compliance. All product packaging must provide adequate product protection during shipping.

14.0 CONTROL OF QUALITY RECORDS

Quality records will be established and maintained to demonstrate achievement of the required quality and the effective operation of the quality system at EnviroTrac. All quality records will be legible and identifiable to the product involved. Records will be stored and maintained for a minimum of five years, unless otherwise specified or required by regulatory agencies, in an environment suitable to minimize damage or deterioration and to prevent loss. Records retention, is the responsibility of the department manager. Quality records will be maintained for all applicable activities such as:

- Management review minutes
- Contract reviews
- Data, drawings, and agency reports
- Purchasing data and documents
- Vendor rating
- Purchaser supplied product lost, etc.
- Product identification records
- Process control records
- Inspection and testing records
- Calibration records
- Control of nonconforming items
- Internal and external audits
- Corrective action reports
- Certification and training records of employees
- Product returns and repairs

Where required by contract, records will be made available for evaluation by the customer or the customer's representative for an agreed period.

15.0 INTERNAL QUALITY AUDITS

The Quality Manager is primarily responsible for carrying out a program of planned and documented internal quality audits against the Quality System Standard.

Audit results and status will be reviewed at Management Review meeting, which consists of the directors of each department.

Audits will be scheduled to reflect the results and status of previous audits and importance of the activity being audited.

Audits will be performed by appropriately trained and qualified personnel who are not directly responsible for the area being audited.

The audits and follow-up actions will be carried out in accordance with documented audit procedures or checklists.

The audit results will be documented and distributed to all responsible individuals. Management responsible for the area audited will take timely corrective and preventive action on the deficiencies found by the audit.

16.0 TRAINING

All personnel performing activities affecting quality will be trained in the performance of their job.

Personnel performing specific tasks will be qualified to perform these tasks based on one or more of the following.

- Education
- Work experience
- Specific job-skill training

Completion of training will be recognized by methods such as;

- Certification

- Record of attendance

- Documented skill

- Testing/examination

Training will be undertaken utilizing in-house courses or by seminars sponsored by outside organizations with appropriate management approval.

Records of all training, education and experience will be maintained and related to the identified training needs.

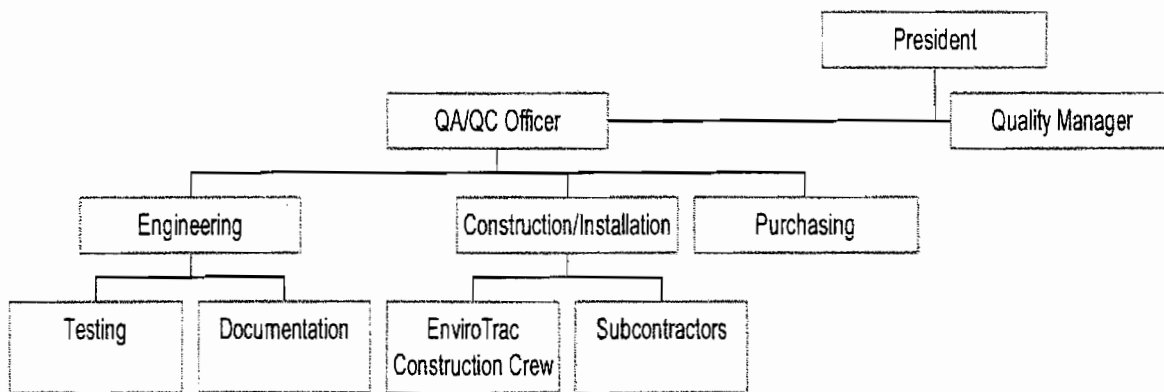
17.0 STATISTICAL TECHNIQUES

Statistical techniques will be used wherever appropriate to monitor and control processes or activities.

These methods will include the use of sampling plans in appropriate areas, trend analysis for determination of field performance and controls to demonstrate effective process control.

18.0 Figure 1 Organizational Chart

Project Quality System Organizational Chart



19.0 Figure 2 QA/QC Checklist and Daily Report Form

QAQC Inspection Checklist and Daily Reporting Form

Site Address: _____

Date: _____

Name of the Inspector: _____

Site Conditions: _____

Description of Work or Product: _____

Do the Product and/or Work Performed Conform to Contract Specification Y/N? _____

Comments/Reasons for Non-Conformance: _____

Inspectors Recommendations: _____

Corrective Actions to be taken: _____

Anticipated Date for Re-Inspection: _____



HEALTH & SAFETY PLAN

**Remediation of National Heatset Printers
1 Adams Boulevard
Town of Babylon, NY**

**Contract No. D005272
Site No. 1-52-140
Suffolk, New York**

Prepared for:

**New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 12233-7010**

Prepared by:

**EnviroTrac Ltd.
80 B Air Park Drive,
Ronkonkoma, NY 11779**

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2.	HSO and Alternate Summary of Experience
3.	Current OSHA 1910.120 Training Certificates for Site Personnel
4.	HASP Amendment Form
5.	Safety Regulations
6.	Safety Reminder for Toxic Chemicals
7.	MSDS Sheet
8.	Daily Tailgate Safety Logs
9.	First-Aid Equipment List
10.	Accident Report Form
11.	Hospital Direction and Location Map

Attachment: Community Health and Safety Plan

1.0 INTRODUCTION

This Health and Safety Plan (HASP) has been prepared to identify the health and safety precautions, methods, and construction activities at the 1 Adams Boulevard, Town of Babylon, New York (Site), to ensure the protection of site workers and the environment. This plan applies to the activities set forth in the Adams Avenue Work Plan submitted under a separate cover. The procedures were developed in accordance with Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard 29 CFR 1910.120.

2.0 SITE BACKGROUND

The 1 Adams Avenue property is located in the Hamlet of East Farmingdale. The site contains one multi-tenant industrial building approximately 4.5 Acres in size. The National Heatset Printing company occupied a portion of the building from July 1983 to April 1989. Inspections by the Suffolk County Department of Health Services (SCDHS) in 1983 and 1986 reported improper storage and discharge of waste materials. In 1997 National Heatset filed for bankruptcy. The SCHDS discovered that after filing for bankruptcy, Nation Heatset disposed of its chemical inventory by dumping the materials onto soils and into a leaching pool located off the rear of the building.

A Remedial Investigation (RI) was performed by Holzmacher, McLendon & Murrell, P.C. for the NYSDEC from August 1997 to January 1999. A detailed description of the history of the 1 Adams Boulevard Site and the background of this project are provided in Section 01010 of the Contract Documents.

3.0 OBJECTIVES

The objective of this HASP is to protect on-site worker health and safety during field activities at the Site. General guidelines in the HASP are provided to assure that safe working conditions exist at the site. The health and safety procedures set forth in this plan have been established based on analysis of potential hazards and protection measures have been selected in response to these potential risks. The HASP will be modified if unforeseen changes occur while work is in progress.

This plan includes health and safety procedures required for field activities performed at the site. It has been designed to meet the following objectives:

- Evaluate the risk associated with each operation;
- Provide for identification, recognition, evaluation, and control of health, safety, and environmental hazards (if any);
- Provide the requirements for an optimum, safe, and healthful work environment, in which personnel are not exposed to avoidable risks, accidents, or injuries in the performance of their duties;
- Identify the roles and responsibilities of on-site personnel; and
- Establish personnel protection standards and mandatory safety practices and procedures for all on-site personnel.
- This document will be periodically reviewed to ensure that it is current and technically correct.

4.0 PERSONNEL RESPONSIBILITIES

The Health and Safety Coordinator (HSC) is responsible for the development and implementation of the HASP. The Health and Safety Officer (HSO) will be responsible for the day to day implementation of the HASP as specified in Site Work Plan. In addition, the HSO is responsible for the distribution of this HASP to all field personnel and discussion of the plan prior to the start of field activities. The field personnel will sign **Appendix 1** of this HASP certifying that they have read, are familiar with and understand the contents of this HASP. The HSO will also have the following authority and responsibilities:

- Responsibility for the field implementation;
- Authority to make necessary field modifications to this HASP with approval of authorized State representatives;
- Responsibility to ensure that at a minimum the following safety equipment is available at the 1 Adams Boulevard Site prior to start of the work: fire extinguisher, eye wash station, and personal protective equipment and first aid supplies.
- Authority to suspend field operations due to potential health and safety concerns;
- Responsibility to supervise emergency response activities;

- Implementation and documentation of daily pre-task field briefings (tailgate safety meetings).

HSO alternates will be designated to act accordingly when the primary HSO is not present at the Site. All site personnel and contract workers working within the exclusion zone will have received the appropriate level of training necessary to perform applicable duties and comply with 29 CFR 1910.120.

Dale Konas Site Supervisor/Project Engineer of EnviroTrac is designated as the site HSO; Kevin Murphy, Ted Masters and Robert Szczepanski of EnviroTrac, are designated as HSO alternates. Other site personnel may be called upon to perform HSO duties. HSO and Alternate summaries of experience is included in **Appendix 2**. Additionally, resumes of key project personnel are provided as attachments to the work plan. The HSO or alternate will be on site at all times during intrusive work activities. Certificates of OSHA 1910.120 40 hour Hazardous Materials Training are included in **Appendix 3**.

All EnviroTrac personnel who will be working at the Site will be provided with a copy of this HASP. All subcontractors and site visitors will follow EnviroTrac's HASP and required to sign the Affidavit (**Appendix 1**). Personnel responsible for HASP monitoring during on-site activities will be responsible for informing the field workers and subcontractors of any changes in conditions and/or levels of protection required in the affected work area. This HASP must be modified or amended when circumstances or conditions develop that are beyond the scope of the operations described in this HASP. Any changes in project work scope and/or site conditions as described must be amended in writing using the Amendment Sheet included in **Appendix 4**.

All personnel working on-site will supply documentation of compliance with 29 CFR 1910.120 in advance of undertaking any physical activities at the site.

5.0 SITE CHARACTERIZATION

Environmental Hazard Evaluation

The environmental hazards associated with the installation of wells, system lines, and operation

and maintenance of the permanganate injection system principally concern the potential presence of PCE in soil and groundwater and the use of the 2 oxidizers (KMnO₄ and NaMnO₄). Although it is not anticipated that activities will involve direct worker contact with the soil or groundwater containing these constituents, potential routes by which workers could be exposed to hazardous constituents include:

- Inhalation
- Ingestion
- Dermal Contact

6.0 CHEMICAL EXPOSURE DATA

All the active site personnel will be protected against potential exposure to the constituents of concern using suitable personal protection as discussed below and as detailed in Section 11.

1. Inhalation

Environmental air monitoring for organic vapors will be conducted through the use of a photoionization detector (PID) within and at the perimeter of the exclusion zone and work areas during all on-site drilling, excavation, carbon drum removal and sampling activities. Level D personal protective equipment (PPE) will be required, as detailed in Section 11.

ORGANIC VAPORS

If PID monitoring readings are greater than 25 and less than 100 ppm levels within the breathing zone, engineering controls will be initiated as detailed in Section 13.

If PID readings in the exclusion zone exceed 100 ppm, work will cease. Prior to recommencement of work, work practices will be implemented to lower volatile emissions only after approval by the Engineer and NYSDEC. If work practices do not lower emissions to less than 100 ppm then recommencement of work will only take place at appropriate PPE Levels as detailed in Section 11.

2. Ingestion

There is also a possibility of ingestion of soil materials during field activities. Safe work practices should be followed to avoid potential ingestion of soil materials. No food, drink or smoking will be allowed in the exclusion zone.

3. Dermal Contact

Due to the potential for dermal contact with soils or groundwater containing permanganate, PCE or other hazardous constituents, all active site personnel performing drilling and sampling activities will be required to wear appropriate Level D personal protective clothing, as detailed in Section 11, including work boots, hard hats, eye protection and appropriate work gloves. Work boots should meet ANSI Z41 American National Standard for Personal Protection – Protective Footwear. As a precautionary measure, extra skin protective gear will be available on site in the field vehicle, to include tyvek suits, to be worn, if necessary. In addition, safety regulations will be posted throughout the site and are included as **Appendices 5 and 6**.

Toxicological and physical characteristics information is provided below for Permanganate and PCE.

GENERAL DESCRIPTION

PERMANGENATE

Permanganate ($\text{KMnO}_4/\text{NaMnO}_4$) liquid and crystals are dark purple-bronze with a metallic sheen, have a sweetish, astringent taste and are odorless. It is used primarily in chemical oxidation. It oxidizes impurities in organic and inorganic chemicals. It is also used for waste water treatment for destroying hydrogen sulfide, phenols, iron, manganese and many other organic and inorganic compounds. The Material Safety Data Sheet (MSDS) for KMnO_4 is included in **Appendix 7**.

TETRACHLOROETHYLENE

Tetrachloroethylene, also called perchloroethylene, is a clear colorless volatile liquid having an

ether-like odor. It is used as dry cleaning solvent, a vapor degreasing solvent, drying agent for metals, and for the manufacture of other chemicals. It is non-combustible, insoluble in water and its vapors are heavier than air. Symptoms of exposure by ingestion include nausea, flushed face and neck. Target organs are skin, liver, kidneys, eyes, upper respiratory system and central nervous system. The current OSHA permissible exposure limit (PEL) is 100 ppm with a short-term exposure limit (STEL) of 300 ppm/5 minutes and an immediately dangerous to life and health (IDLH) recommendation to treat PCE as a potential human carcinogen. The Material Safety Data Sheet (MSDS) for PCE is included in **Appendix 7**.

HEALTH HAZARDS:

PERMANGENATE

VAPOR: Irritating to respiratory tract, high concentrations can cause pulmonary edema.

LIQUID: Diluted concentrations are mildly irritating to the skin.

TETRACHLOROETHYLENE

VAPOR: Irritating to eyes, nose and throat. If inhaled, will cause difficult breathing, or loss of consciousness. LIQUID: Irritating to skin and eyes. Harmful if swallowed (USCG, 1985).

FIRE/EXPLOSION HAZARDS:

PERMANGENATE

Not combustible but oxidizer and heat of its reaction with reducing agents may cause ignition. Contact with oxidizing substances may cause combustion

TETRACHLOROETHYLENE

Not flammable. Poisonous gases are produced when heated. Toxic, irritating gases may be generated in fires. (USCG, 1985)

FIRE FIGHTING:

PERMANGENATE

Use water spray to blanket fire and remove all ignition sources

TETRACHLOROETHYLENE

Extinguish fire using agent suitable for type of surrounding fire (material itself does not burn or burns with difficulty). ((C)AAR, 1986)

Extinguish fire using agent suitable for type of surrounding fire (material itself does not burn or burns with difficulty). ((C)AAR, 1986)

NON-FIRE SPILL RESPONSE:

PERMANGENATE

Remove all sources of ignition, wear appropriate PPE, and ventilate area. Keep material out of surface water or sewers. Attempt to stop leaks without hazard.

TETRACHLOROETHYLENE

Keep material out of water sources and sewers. Build dikes to contain flow as necessary. Attempt to stop leak if without hazard.

Land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash or cement powder.

Water spill: If dissolved, apply activated carbon at ten times the spilled amount in region of 10 ppm or greater concentration. Remove trapped material with suction hoses. Air spill: Apply water spray or mist to knock down vapors. Vapor knockdown water is corrosive or toxic and should be diked for containment. ((C)AAR, 1986)

FIRST AID:

POTASSIUM PERMANGENATE

Inhalation: Remove to fresh air, check breathing, if not breathing give artificial respiration, if difficult, give oxygen and get medical attention immediately.

Ingestion: Give large quantities of water if conscious and get medical attention immediately

Skin Contact: Immediately flush skin with plenty of water while removing contaminated clothing. Get medical attention.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

TETRACHLOROETHYLENE

If this chemical comes in contact with the eyes, immediately wash the eyes with large amounts of water, occasionally lifting the lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical. If this chemical comes in contact with the skin, promptly wash the contaminated skin with soap and water. Facilities are available at the site for washing. If this chemical penetrates through the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly. If a person breathes in large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible. If this chemical has been swallowed, get medical attention immediately. (NIOSH, 1987)

7.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSIS

The following subsections describe each task/operation in terms of the specific hazards associated with it. In addition, the protective measures to be implemented during completion of those operations are also identified.

7.1 Task by Task Risk Analysis

The evaluation of hazards is based upon the knowledge of site background presented in the Work Plan, and anticipated risks posed by the specific operation.

The following subsections describe each task/operation in terms of the specific hazards associated with it. In addition, the protective measures to be implemented during completion of those operations are also identified. Tables 7-1 & 7-2 and 7-3 provide a summary of task analysis and chemical hazards for each task at the Site. The Permissible Exposure Limit (PEL), Threshold Limit Value (TLV) and Immediately Dangerous to Life and Health (IDLH) levels are listed on Table 7-1 & 7-2 for the contaminant of concern. In general OSHA PELs are regulatory requirements that must be met and TLVs are guidance values. The PEL represents the maximum exposure concentration an individual can be exposed to as a time weighted average of 8 hours. TLVs represent the exposure concentration which an individual can be exposed to

eight hours a day, five days a week (40 hours), without harmful effects. The IDLH represents the maximum concentration of a contaminant for which an individual can be exposed to for thirty minutes without any "escape impairing" symptoms or irreversible health effects.

TABLE 7-1 Task Analysis - Perimeter and Air Monitoring Chemical Hazards of Concern

CONTAMINANT	PEL/TLV/IDLH	ROUTES OF CONCENTRATION	EXPOSURE
TETRACHLORO- ETHYLENE	PEL:100 ppm TLV: 25 ppm IDLH: Not Applicable, Potential Human Carcinogen (NIOSH, 1987)	AIR SUBSURFACE SOIL	INHALATION INGESTION CONTACT

Notes: (PEL=Permissible Exposure Limit, TLV=Threshold Limit Value, IDLH=Immediately Dangerous to Life and Health)

TABLE 7-2 Task Analysis - Well Installation and Excavation Chemical Hazards of Concern

CONTAMINANT	TLV/IDLH	ROUTES OF CONCENTRATION	EXPOSURE
TETRACHLORO- ETHYLENE	PEL:100 ppm TLV: 25 ppm IDLH:Not Applicable, Potential Human Carcinogen (NIOSH, 1987)	AIR SUBSURFACE SOIL	INHALATION INGESTION CONTACT

Notes: (PEL=Permissible Exposure Limit, TLV=Threshold Limit Value, IDLH=Immediately Dangerous to Life and Health)

TABLE 7-3 Task Analysis – KmnO4 Injection and Monitoring

CONTAMINANT	TLV/IDLH	ROUTES OF CONCENTRATION	EXPOSURE
POTASSIUM PERMANGENATE 2% SOLUTION	PEL:5 ppm TLV: 0.2 ppm IDLH:Not Applicable,	AIR GROUNDWATER	INHALATION INGESTION/SKIN

Notes: (PEL=Permissible Exposure Limit, TLV=Threshold Limit Value, IDLH=Immediately Dangerous to Life and Health)

7.2 Task Hazard Description and Hazard Prevention

The following section identifies the hazards associated with site tasks, and provides suggestions for hazard prevention on-site.

PERIMETER MONITORING:

The site boundaries clearly mark off the "clean" off-site areas, from the "contaminated" on-site areas, and so chemical contamination from the site should not be a hazard associated with perimeter and off-site monitoring.

Perimeter monitoring and off-site monitoring will be performed once the site boundaries have been established. Hazards specific to perimeter and off-site monitoring include encounters with non-project personnel. This is a unique hazard, in that untrained personnel prove to be a risk when performing any type of site work. Inquisitive and/or hostile persons may interfere with the monitoring/sampling effort, jeopardizing their safety as well as the safety of the field team.

HAZARD PREVENTION DURING PERIMETER MONITORING:

To minimize public involvement in perimeter monitoring/off-site monitoring, the most effective preventative measure is to inform all interested parties. A Community Health and Safety Plan (HASP) is included as a separate attachment to this HASP for that purpose. Notifying state and local police, the fire department, and any local/state governmental officials of the project's purpose and scope will allow those authorities to answer questions posed to them by local residents and the media by preparing statements on the project's purpose or by informing the public where to call for further information. This alleviates the problem of work stoppage due to field personnel answering questions.

AIR MONITORING:

General hazards frequently encountered during air monitoring include:

- Electrical hazards as a result of power sources to charge/run air monitoring equipment.
- Placing air monitoring equipment in elevated areas or areas where slip/trip and fall hazards exist.
- Hazards associated with ambient environment being sampled.
- Readings indicating non-explosive atmospheres, low concentrations of toxic substances, or other conditions may increase or decrease suddenly, changing the associated risks.
- Air sampling matrix solutions may be acidic or basic, causing a corrosive hazard, and broken glass collection tubes can cut hands if mishandled.

HAZARD PREVENTION DURING AIR MONITORING:

Grounded plugs should be used when a power source is needed to reduce the hazard of electric shock.

- Generators or air monitoring equipment should be used in dry areas, away from possible ignition sources. Do not stand in water or other liquids when handling equipment. Electrical equipment shall conform to OSHA 1910.303(a), 1910.305(a),(f),(f)(3).
- Ground fault interrupters are used in the absence of properly grounded circuitry or when portable tools must be used in wet areas.
- Extension cords should be protected from damage and maintained in good condition.
- Air monitoring equipment should be placed within easy reach.
- Personnel should be thoroughly familiar with the use, limitations and operating characteristics of the monitoring instruments.
- Perform continuous monitoring in variable atmospheres.
- Use intrinsically safe instruments until the absence of combustible gases or vapors is anticipated.

WELL INSTALLATION:

Hazards generally associated with drilling operations include the following:

- Noise levels exceeding the OSHA PEL of 90 dBA are both a hazard and a hindrance to

communication.

- Fumes (carbon monoxide) from the drill rig.
- Overhead utility wires, i.e., electrical and telephone, can be hazardous when the drill rig boom is in the upright position.
- Underground pipelines and utility lines can be ruptured or damaged during active drilling operations
- Moving parts, i.e. augers, on the drill rig may catch clothing. Free or falling parts from the cat head may cause head injury.
- Moving the drill rig over uneven terrain may cause the vehicle to roll over or get stuck in a rut or mud. Be aware of hazards associated with moving heavy machinery and other associated injury.
- High pressure hydraulic lines and air lines used on drill rigs are hazardous when they are in ill repair or incorrectly assembled.

HAZARD PREVENTION DURING WELL INSTALLATION:

- Review the contaminants suspected to be on-site and perform air monitoring as required.
- Continuously monitor carbon monoxide levels during machinery operation and shut down drill rig and/or divert exhaust fumes.
- All chains, lines, cables should be inspected daily for weak spots, frays, etc. Daily inspection will be recorded.
- Emergency shut down procedures of the drill rig should be reviewed each day and tested.
- Ear muffs and ear plugs effectively reduce noise levels and must be worn during drilling operation. A sound meter will be on-site to monitor levels.
- Hard hats should be worn at all times when working around a drill rig. Secure loose clothing. Check boom prior to approaching drill rig.
- To avoid contact with any overhead lines, the drill rig boom should be lowered prior to moving the rig. Overhead utilities should be considered "live" until determined otherwise.
- The rig mast should not be erected within 10 feet of an overhead electrical line until the line is de-energized, grounded, or shielded and an electrician has certified that arcing cannot occur.
- Minimum working distances around "live" overhead power lines are:

Minimum working voltage range ((phase to phase) kilovolt) and clear hot stick distance

2.1 to 15	2 ft. 0 in.
15.1 to 35	2 ft. 4 in.
35.1 to 46	2 ft. 6 in.
46.1 to 72.5	3 ft. 0 in.
72.6 to 121	3 ft. 0 in.
138 to 145	3 ft. 6 in.
161 to 169	3 ft. 8 in.
230 to 242	5 ft. 0 in.
345 to 362	7 ft. 0 in.1
500 to 552	11 ft. 0 in.1
700 to 765	15 ft. 0 in.1

- A thorough underground utilities search should be conducted before the commencement of a drilling project.
- All high pressure lines should be checked prior to and during use.

SYSTEM CONSTRUCTION AND INSTALLATION:

Activities during system installation may include trenching for underground system lines, installation of overhead lines, off site construction of the system and testing, and connection of the system. Hazards may include:

- Contact with or inhalation of contaminants, potentially in high concentrations in sampling media.
- Noise levels exceeding the OSHA PEL of 90 dBA are both a hazard and a hindrance to communication.
- Fumes (carbon monoxide) from the backhoe.
- Underground pipelines and utility lines can be ruptured or damaged during trenching operations
- Moving parts on the backhoe/personnel lifts may catch clothing.
- Moving the backhoe/personnel lifts over uneven terrain may cause the vehicle to roll over or get stuck in a rut or mud. Be aware of hazards associated with moving heavy

machinery such as collision with personnel and structures.

- High pressure hydraulic lines and air lines used on the backhoe and personnel lifts are hazardous when they are in ill repair or incorrectly assembled.
- Back strain and muscle fatigue due to lifting and shoveling techniques.
- Working with power tools during system shed construction.
- Electrical hazards when energizing the system during testing.

HAZARD PREVENTION DURING SYSTEM CONSTRUCTION AND INSTALLATION:

- Review the contaminants suspected to be on-site and perform air monitoring as required.
- Continuously monitor carbon monoxide levels during machinery operation. Shut down backhoe and/or divert exhaust fumes.
- All chains, lines, cables should be inspected daily for weak spots, frays, etc.
- Daily backhoe/personnel lift safety inspections (e.g. backup alarm) will be documented.
- A spotter on the ground will direct backhoe during operation.
- Safety vests will be worn to increase visibility of personnel.
- Ear muffs and ear plugs effectively reduce noise levels and will be worn during installation activities that have noise levels above 90 dBA.
- Hard hats should be worn at all times when working around heavy equipment. Secure loose clothing.
- Proper lifting (pre-lift weight assessment, use of legs, multiple personnel) techniques will prevent back strain. Use slow easy motions when shoveling and digging to decrease muscle strain.
- A thorough underground utilities search should be conducted before the commencement of a trenching project.
- All high pressure lines should be checked prior to and during use.
- Electric tools will be inspected daily for damage to safety guards and wires.
- All electric tools are to be properly grounded in accordance with manufacturers specifications.
- To minimize exposure to chemical contaminants, a thorough review of suspected contaminants should be completed and implementation of an adequate protection program.
- Follow lockout/tag out procedures when working with electrical components of the system during testing.

General Hazard Evaluation

In addition, there are several site activities which do not involve the potential contact with PCE or other hazardous constituents and therefore have low associated hazard for exposure. While these activities do not involve significant exposure risks, various physical hazards do exist. General hazards associated with these activities include the following:

- Personnel slipping, tripping, and falling as a result of improperly stored equipment and materials;
- Puncture wounds and lacerations from sharp edges of hand tools;
- Personnel being struck by equipment, tools, and vehicles; injuries to feet from falling objects, or sharp objects;
- And Back or other muscle injuries or strains from improper or excessive lifting.

To protect against accidental mechanical hazards, safe work practices will be followed and a hard hat, gloves, appropriate eye/face protection, and durable work boots that meet ANSI Z41 American National Standard for Personal Protection should be worn when working around heavy equipment, as detailed in Section 11.

Adverse weather conditions are also important considerations in planning and conducting site operations. Cold or hot weather can cause physical discomfort, loss of efficiency, and personnel injury. To protect against injury due to cold or hot weather, appropriate control measures will be taken, as detailed in Section 11.

8.0 RISK CHARACTERIZATION

Based on the following factors, it is believed that the conditions of exposure during field activities at the 1 Adams Boulevard Site pose low risk of adverse health effects or injury:

- Environmental monitoring will be performed, during intrusive activity, for organic vapors explosive atmosphere and carbon monoxide.
- Personnel involved with intrusive activity within the exclusion zone will follow OSHA

guidelines and wear the appropriate level of protection (Section 11).

- All site work will be accomplished at Level D personal protection and upgrading to Level C based on action levels (Section 11).
- Discontinuation of site activities will occur when personnel exposure to organic vapors exceed the PEL or the STEL for PCE.
- As an engineering control, a regenerative air blower or exhaust fans may be used to reduce the potential for dangerous concentrations of carbon monoxide and VOCs in the breathing zone near the borings.
- Mandatory safe occupational work practices will be followed at all times.

9.0 SITE CONTROL

Site Work Locations

Activities involving the installation of wells, air monitoring, and excavation will be performed at several locations throughout the site. The work area is the location in which the actual activity will occur. Only authorized personnel, including personnel conducting the work activities involved, and specialized personnel such as subcontractors engaged in well installation and heavy equipment operators, will be allowed in the work area. Within the work area, the levels of protection will be determined based on the degree of hazard present, as detected by the measurements obtained with the photoionization detector (PID), and/or other activity-specific monitoring equipment.

Work Zones

Work zones will be defined with the Engineer's approval prior to the commencement of work activities and be clearly marked off with traffic cones and/or caution tape. These work zones will limit equipment, operations and personnel in the areas as defined below:

Exclusion Zone - This shall include all areas where potential environmental monitoring has shown or is suspected that a potential chemical hazard may exist to workers. The level of PPE required in these areas shall be determined by the site HSO after air monitoring and on-site inspection has been conducted. The area shall be clearly delineated from the decontamination area. As work proceeds, the delineation boundary shall be relocated as necessary to prevent the

accidental contamination of nearby people and equipment.

Contamination Reduction Zone - This zone will occur at the interface between the Exclusion Zone "Hot Zone" and Support Zone "Clean Zone" and shall provide a transfer of personnel and equipment to and from the Support Zone to the Exclusion Zone, the decontamination of personnel and equipment prior to entering the Support Zone, and for the physical segregation of the Support Zone and Exclusion Zone.

Support Zone - This area is the remainder of the work site and project site. The function of the Support Zone includes:

- An entry area for personnel, material and equipment to the Exclusion Zone of site operations through the Contamination Reduction Zone;
- An Exit for decontamination personnel, materials and equipment from the "Decon" area of site operations;
- The Housing of site special services;
- A storage area for clean safety and work equipment.

Small decontamination areas may be set up adjacent to the work area to facilitate decontamination of equipment that is reused throughout the field activity.

Security

Periodic security patrols will be conducted to ensure that adequate security is being maintained. Only workers authorized by the field manager may be allowed to enter the site. Most of the work performed at Site will be within the buildings which will be locked during non working hours and the remaining outside work will be surrounded with a security fence. The gates of the fence will be secured by chains and padlocks. Warning signs will be attached to the fence to discourage entry by unauthorized personnel. While work activities are being implemented within fenced areas, existing security will be maintained. The site or alternative HSO will brief all visitors of all security and safety plans.

Site Communications

Communications on-site will be conducted through verbal communications. When out of audible range, verbal communications may be assisted using portable telephones and personal pagers.

General Work Rules

To protect against the occurrence of accidents and dangerous situations, as well as to minimize the potential for emergency events, all on-site personnel shall:

- Attend a daily tailgate safety meeting, read this HASP and sign the Affidavit (**Appendix 1**) attesting to this, prior to beginning of site activities. The HASP will be reviewed periodically by all on-site personnel conducting field activities. Daily Tailgate Safety Logs are included in **Appendix 8**.
- Field work will only be conducted during daylight hours unless adequate artificial lighting is provided and community/residential zoning laws permit operation after certain hours.
- No eating, drinking or smoking will be permitted within the exclusion or contamination reduction zone.
- All personnel shall be knowledgeable in the use of the first-aid equipment outlined in **Appendix 9**. Personnel will be advised of the precautions to be taken against sunburn, heat stroke, frostbite, and hypothermia.
- Only authorized personnel will be allowed on site.
- Fire extinguishers shall be available at the work site for immediate availability in an emergency.

To minimize the possibility of injuries, the following general precautions will be taken:

- All hand and power tools will be maintained in a safe condition.
- Safety guards will be kept in place during use.
- Power tools will be double-insulated and/or properly grounded.
- Walkways will be kept clear of equipment, vegetation, excavated material, or other obstructions.
- Proper work gloves will be provided and used when the possibility of burns, lacerations,

or other injury exists.

- Hard hats and work boots will be worn.
- Employees exposed to vehicular traffic on public roads and working around heavy machinery will wear warning vests.
- Employees will observe proper lifting techniques and obey sensible lifting limits.
- Heavy equipment will be used in accordance with the manufacturer's specifications and guidelines.

To guard against injury caused by exposure to cold temperatures, the following measures will be taken in cold weather:

- Workers will be outfitted with adequate winter clothing.
- Clothing will be changed if it becomes wet.
- Warm shelters and regular rest periods will be available for workers.
- Training sessions will be held as appropriate to emphasize warning symptoms of hypothermia or frostbite such as reduced coordination, drowsiness, impaired judgment, fatigue, and numbing of toes and fingers.
- Warm beverages will be provided.

To guard against injury by heat stress, the following control measures will be employed in hot weather:

Provision for adequate liquids to replace lost body fluids. Employees must replace water and salt lost through perspiration.

Employees will be encouraged to drink more than the amount required to satisfy thirst, since thirst satisfaction is not an accurate indicator of adequate salt and fluid replacement. Replacement fluids can be a 0.1 percent salt solution, commercial mixes such as Gatorade or Quick Kick, or a combination of these with fresh water.

- Establishment of a work regimen that will provide adequate rest periods for cooling down. Rest breaks are to be taken in a cool, shaded area during hot weather.
- Employees shall not be assigned other tasks during rest periods.

- All employees shall be informed of the importance of adequate rest, acclimation, and proper diet in the prevention of heat stress.

HEALTH AND SAFETY RESPONSIBILITIES

All Project Personnel are responsible for the following:

- Taking all reasonable precautions to prevent injury to themselves and to their fellow employees.
- Implementing the requirements of this HASP and reporting any deviations from the anticipated conditions described herein.
- Performing only those tasks that they believe they can do safely, and immediately reporting any accidents and/or unsafe conditions to the work supervisor.
- Filling out an accident report form included in **Appendix 10** and for all injuries, regardless of severity. The form will be submitted to the work supervisor. Subcontractor is required to notify contractor within 24 hours of any work related injury.

10.0 PERSONNEL TRAINING

Field team personnel associated with those activities in which the potential for exposure to hazardous substances exists are required to participate in a health and safety training program that complies with the OSHA standard 29 CFR 1910.120. This program instructs employees on general health and safety principles and procedures, proper operation of monitoring instruments, and use of personnel protective equipment.

In addition, field team personnel must undergo site-specific training prior to the start-up of any given project or task. As activities change at a particular work site, related training must be provided as necessary. The site-specific training will address potential hazards and associated risks, site operating procedures, emergency response and site control methods to be employed. All work site personnel will document their review of the HASP with their signature on the Affidavit (**Appendix 1**).

11.0 PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

Personal Protective Equipment Selection

Based on available data, it is anticipated that all field activities will be performed at Level D protection.

Level D

The following Personal Protective Equipment (PPE) for Level D will be necessary for all field personnel on site:

- boots (should be safety toe when working near heavy machinery)
- hard hat
- work gloves; and
- dust mask (if required by the activity)
- safety glasses

If contaminated soil is exposed by drilling or trenching, safety glasses, and overboots will be used.

Additionally, if and when free phase liquids are encountered, the following equipment will be necessary for all field personnel in the affected work area or dealing with the affected soil material:

- Tyvek (e.g., Saranex) disposable coveralls;
- safety glasses/goggles/face shield;
- chemically resistant overboots; and
- protective gloves.

Level C

An upgrade of PPE to Level C may be necessary for all personnel in the work area when

engineering controls do not lower the exposure levels to within acceptable limits. Fit test documentation is required if Level C respiratory protection is to be worn.

The upgrade will consist of donning:

- laminated-type Tyvek (e.g., Saranex) disposable coveralls (if not already donned);
- nitrile or PVC gloves;
- full-face respirator equipped with approved cartridges suitable for up to 1,000 ppm organic vapors;
- and, chemically resistant overboots.

Level B

An upgrade of PPE to Level B will be necessary for all personnel in the work area if Level C protection does not adequately protect worker exposure.

The upgrade will consist of donning:

- pressure demand, full-facepiece SCBA or pressure-demand supplied-air respirator with escape SCBA
- inner gloves

Work Stoppage

Work stoppage will be required for all personnel in the work area when the PID reading is greater than 100 ppm within the breathing zone of the exclusion zone. Activities may be resumed when levels below 100 ppm are reached.

12.0 PERSONAL PROTECTIVE EQUIPMENT USE

Just prior to entering into the work area, the required PPE will be donned. In the event of damage to the PPE, a worker will return to the decontamination area set up for the specific work

activity to repair or replace the damaged gear. All used PPE will be wrapped in plastic bags and disposed of as regular garbage.

First-Aid Supplies and Safety Equipment

First-Aid supplies will be located within the contamination reduction zone. The first-aid equipment list is included in **Appendix 9**. An emergency contact telephone list has been included in Section 15.0.

Safety equipment in addition to the PPE may be required depending upon the specific site activity. A list of safety equipment that may be required is included in **Appendix 9**.

13.0 MONITORING PROGRAM

Real-time air monitoring, for VOCs, carbon monoxide and explosive atmosphere in the work zone and at the perimeter of the work area will be performed during work activities. The following describes the air monitoring plan for the work zone and perimeter areas during intrusive and non-intrusive activities. The permissible exposure limit (PEL) for PCE is 100 parts per million (ppm) time weighted average (TWA) and averaged over an 8-hour period (OSHA), with an OSHA peak of 300 ppm (5-minute average in any three hours).

Work Zone

- VOCs will be monitored in the breathing zone of the work area prior to daily activities and on a periodic basis during intrusive work using a PID. The period of VOC monitoring will be adjusted based on the activity and readings obtained (i.e., continuous air monitoring may be performed during initial exposure and excavation of subsurface soil).
- During non-intrusive work, VOCs will be monitored in the breathing zone of the work area prior to daily activities and once during work activities using a PID. VOC monitoring will be adjusted based on the readings obtained (i.e., hourly air monitoring may be performed if initial readings are above 25 ppm).
- If the total organic vapor level exceeds 25 ppm, engineering controls will be instituted. Readings will be taken continuously in the work zone during implementation of an engineering control if readings are consistently above 25 ppm to ensure that the TWA is not

exceeded. If readings are below 25 ppm during implementation of an engineering control and no new soil is exposed, readings will be collected hourly in the breathing zone of the work area.

- Carbon monoxide (CO) will be monitored in the work zone, continuously during machinery operation using a CO meter. If CO concentration exceeds 35 ppm work activities will be halted and engineering controls will be instituted.
- PCE is non-combustible, however LEL will be monitored in the work zone along with CO, continuously during intrusive activity in the event that other compounds are present. If the LEL exceeds 10% then work activities will be halted and engineering controls will be instituted.

Perimeter

VOCs will be monitored outside and downwind of the building prior to and at least once during daily work activities. Monitoring frequency outside the building will be modified based on the VOC levels detected in the work zone. If an engineering control is initiated to reduce the levels in the work zone to below 100 ppm, then hourly readings will be collected outside the building. If levels are above 100 ppm outside the building, stop work, investigate work area of source, notify authorities, and implement integrated air sampling and engineering controls. All readings will be recorded and be available for State (NYSDEC) personnel review. Table 13-1 summarizes action levels for work zone monitoring.

Table 13-1 Action Levels for Work Zone Monitoring

HAZARD	Monitoring Method	Action Level	Protective Measures
Explosion or Fire	CGI	<5% LEL	Continue operations
		5-10% LEL	Continue monitoring with caution as higher levels are encountered
		>10% LEL	Stop work
Volatiles (PCE)	PID (within the site work area)	>25 ppm <100 (OSHA TWA)	Initiate engineering controls, continue operations
		>100 ppm (PEL) <200 ppm	Stop Work, evacuate work area, and initiate integrated work zone and perimeter air sampling and engineering controls. Upgrade to Level C PPE if engineering controls do not reduce concentration to <100 ppm.
		>300 ppm 5 minutes (STEL)	Stop Work, evacuate work area, notify authorities and initiate integrated air sampling and engineering controls.
	PID (outside the work area, downwind for community protection)	>25 ppm (TLV)	Warning Level, investigate work area of source, notify authorities, and implement integrated air sampling and engineering controls.
		>100 ppm (PEL) >300 ppm 5 minutes (STEL)	Stop work, evacuate downwind work areas, notify authorities, and implement community plans

The HSO or alternate will be designated to perform air monitoring. All readings will be recorded by hand in the field notebook and transcribed and be available for State (NYSDEC) personnel review. All meters used for air monitoring will be checked against standard gas concentrations daily and calibrated, if necessary by the designated HSO. A calibration log will be kept with each instrument used for air monitoring.

Physical Condition Monitoring

Heat Stress

One of the most frequently encountered problems associated with operations conducted under PPE Safety Level C is heat stress. Heat stress manifests itself in two forms: heat stroke and heat exhaustion. Depending on ambient conditions, the worker and the work being performed,

heat stress can adversely affect a worker in as little as 15 minutes. This is especially important as ambient temperatures exceed approximately 69 1F at high humidity.

Heat stroke is a much more dangerous form of heat stress. Symptoms of heat stroke include high body temperatures and red or flushed hot, dry skin. There may be dizziness, nausea, headache, rapid pulse, and unconsciousness. First-aid for all forms of heat stress includes cooling the body by removing PPE, moving to a safe area, and allowing the worker to rest in a cooler environment.

Frostbite

Frostbite may be categorized into three types:

1. Frostbite or incipient frostbite characterized by sudden blanching or whitening of the skin.
2. Superficial frostbite - skin has a waxy or white appearance, is firm to the touch but tissue beneath is resilient.
3. Deep frostbite - tissues are cold and hard indicating an extremely serious injury.

Sign and symptoms of frostbite include:

- The skin changes to white or grayish-yellow in appearance.
- Pain is sometimes felt early but subsides later (often there is no pain).
- Blisters may appear later.
- The affected part feels intensely cold and numb.
- The person frequently is not aware of frostbite until someone tells him or her that they observe the pale, glossy skin.

As time passes, the affected worker may become confused, stagger, experience eyesight impairment, become unconscious, and breathing may stop.

First-aid frostbite will include protecting the frozen area from further injury, bringing the victim indoors, warming the affected areas quickly with warm water, and maintaining respiration according to the first-aid procedures. Medical assistance should be obtained immediately.

Frostbite may be prevented by the use of insulated gloves, socks and other protective clothing

capable of keeping moisture away from the skin. All protective clothing should be chosen so that it is compatible with any chemical-resistant clothing required for the site activities involved.

14.0 DECONTAMINATION PROCEDURES

14.1 General

An equipment and worker decontamination area will be set up adjacent to the work area. The equipment decontamination procedures described herein include in-the-field and post-field decontamination of sampling equipment. The non-disposable equipment will be cleaned after completing each sampling event. Rinse water from equipment that comes in contact with contaminated soil will be contained on site for later disposal.

14.2 Safety Procedures During Equipment Decontamination

1. Personnel will wear the following safety equipment when decontaminating smaller equipment (i.e., shovels):
 - Safety glasses, goggles, and/or a splash shield; and
 - Nitrile or PVC gloves.
2. Personnel will wear the following additional safety equipment when decontaminating larger equipment with a high-pressure water/steam decontamination unit (i.e., drill rigs):
 - Tyvek (e.g., Saranex) disposable coveralls;
 - Safety glasses
 - Chemically resistant overboots.
 - Hard hat

14.3 Decontamination Procedures

Drilling Equipment - Drilling equipment that comes in direct contact with subsurface soil will be cleaned with potable water before leaving the site. All equipment that comes into direct contact with subsurface soil will be decontaminated with a power washer. Rinse water and sediment generated from equipment that comes in contact with contaminated soil will be contained on site for later disposal.

- 1) Potable water scrub to remove excess soil;
- 2) Potable water rinse; and
- 3) Air dry

Excavation Equipment (shovels, etc.) - All excavation equipment that has had direct contact with contaminated soil will be decontaminated before leaving the site. Rinse water from equipment that comes in contact with contaminated soil will be contained on site for later disposal.

- 1) Potable water scrub to remove excess soil;
- 2) Potable water rinse; and
- 3) Air dry

Meters and Probes - All meters and probes that are used in the field (other than those used solely for air monitoring purposes, e.g., PID) will be decontaminated between use as follows:

- 1) Non-phosphate detergent and water scrub to remove visual contamination;
- 2) Potable water rinse; and
- 3) Air dry

Disposal Method

PPE solids (e.g., disposable gloves, disposable clothing, and other disposable equipment) will be decontaminated as necessary or as directed by the Department prior to disposal as normal solid waste. Rinse water generated during decontamination of equipment or PPE that comes in contact with contaminated soil or water will be contained in properly labeled drums, on site, for later disposal as necessary and as directed by the Department.

Decontamination Areas

The equipment decontamination areas will be located within the work area. A decontamination pad will be constructed of plastic sheeting, sloped toward to allow for contaminated rinse water

to be collected for transfer to onsite storage containers for later disposal. Plastic sheeting will be placed on plywood to prevent tearing. Decontamination procedures will be conducted on equipment, instruments, etc. if such equipment, etc. comes in contact with contaminated soil during intrusive work within the exclusion zone. All equipment (i.e. drilling rods) that contacts soil will be considered contaminated and properly decontaminated before leaving the site. All decontamination activities for contaminated equipment, etc. will be conducted within the designated decontamination area. All rinse water will be pumped into and contained in 55-gal. drums and properly labeled. Sediments remaining in the contained area will also be drummed.

15.0 Spill Prevention and Control

EnviroTrac will maintain appropriate containment and/or diversionary structure, materials and equipment to prevent and control the maximum spillage of any specific item during construction. None of the work areas shall be polluted with any manmade or natural harmful materials. In addition, and specific to the National Heatset project, EnviroTrac will place polyethylene sheeting under the system above-ground piping before the piping is covered by clean select fill. The sides of the sheeting will be placed on soil mounds to prevent any spill run-off. Additional details on prevention of accidents and site control during construction are provided in the Health and Safety Plan including the permanganate MSDS and EC Data Sheets.

Based on the size of the projects and scopes of work, the anticipated occurrence and possible extent of spills are minimal. Sorbent materials will be maintained on site at all times during construction and system operation in the event of any possible spillage.

To protect against the occurrence of spills and accidents, as well as to minimize the potential for emergency events, all on-site personnel shall:

1. Attend Spill Prevention Briefings and read this Spill Prevention Plan and Health and Safety (HASP) prior to beginning of all on-site activities. Spill Prevention Briefings shall highlight and describe known spill events or failures, malfunctioning components, and recently developed precautionary measures.
2. Field work will only be conducted during daylight hours unless adequate artificial lighting is provided.

3. No eating, drinking or smoking will be permitted within the work zone.
4. All personnel shall be knowledgeable in the use of the first-aid equipment outlined in the HASP.
5. Only authorized personnel will be allowed on site.

15.1 EMERGENCY RESPONSE

In the event of a spill or in the event of any emergency the Construction Manager will be notified immediately. EnviroTrac shall provide a written description of the event, corrective action taken, and plans for preventing a recurrence, as well as a written commitment of manpower, equipment, and materials required to expedite control and removal of any harmful quantity of material released. If an injury associated with the spill requires medical assistance or if an emergency requires local authority notification a listing of emergency phone numbers is provided as follows:

NYSDEC Albany: Jeff Dyber, P.E. (Project Manager)	(518) 402-9622
Marc J Dent (Managing Engineer, O'Brien and Gere)	(315) 437-6100
Local Fire Department	911
Local Police Department	911
Local Rescue Service (EMS)	911
New York Poison Control	(516) 542-2323
Federal	
National Response Center	(800) 424-8802
National Poison Control	(800) 926-1253
EnviroTrac Emergency Contacts:	
24-hour Hotline	(800) 586-1801
Kevin Murphy, Project Manager	(516) 807-8981
Jim Byrnes, Crew Chief	(516) 807-8979

Communications on-site will be conducted through verbal communications. When out of audible range, verbal communications may be assisted using portable telephones and personal pagers. The portable telephones will be capable of summoning emergency assistance from local police departments, or State or local emergency response teams.

15.2 PERSONNEL TRAINING

Field team personnel associated with those activities in which the potential for exposure to hazardous substances exists are required to participate in a health and safety training program that complies with the OSHA standard 29 CFR 1910.120 and 1910.1200. This program instructs employees on general health and safety principles and procedures, proper operation of monitoring instruments, and use of personnel protective equipment.

In addition, field team personnel must undergo site-specific training prior to the start-up of any given project or task. As activities change at a particular work site, related training must be provided as necessary. The site-specific training will address potential hazards and associated risks, site operating procedures, emergency response and site control methods to be employed. On-site personnel will be properly instructed regarding applicable pollution control laws, rules, and regulations; and in the operation and maintenance of equipment to prevent the discharge of materials.

16.0 CONTINGENCY PLAN

16.1 On-Site Fire Prevention

To protect and prevent against accidental fire hazards, safe work practices will be followed and:

1. Fire extinguishers shall be available in each vehicle and system shed and should only be used in accordance with the manufacturer's specifications and guidelines.
2. The Health and Safety Officer shall notify the Fire department, Engineer and NYSDEC in the event that a fire cannot be controlled by the available on-site equipment.
3. System electric shall satisfy all National Electric Code (NEC) criteria.
4. Smoking is prohibited in the exclusion and contamination reduction zone.

16.2 Evacuation Procedures

Local authorities and emergency agencies will be informed, if necessary, of the purpose,

schedule and scope of the construction activities 5 days prior to the initiation of construction. The exclusion zone will be delineated and air monitoring activities started prior to invasive work. Results of air monitoring at the perimeter of the exclusion zone will be monitored by the Health and Safety Officer and recorded in the on-site 1 Adams Boulevard Site Logbook. All work activities shall be halted and the Engineer notified if any of the following levels of organic vapors are exceeded at the exclusion zone perimeter:

- Organic vapor levels greater than 100 ppm
- Explosive atmosphere 10% of the lower explosive limit

If any of the above conditions persists after cessation of work activities, and cannot be alleviated by the implementation of engineering controls, then the following contingency plan shall be placed into effect:

- The perimeter of the nearest downwind residence or commercial property shall be monitored. If organic vapor levels are >100 ppm measured hourly, the evacuation of the residence/commercial property is advisable;
- The Health and Safety Officer will contact the Engineer, NYSDEC, and appropriate local agencies, and request assistance in completing the evacuation; and
- designate on-site personnel will assist the local authorities in the evacuation of the immediate off-site area without delay.

16.3 Medical Emergency

In the event of a medical emergency in which Hospital / Emergency care is necessary, personnel will be taken to the nearest Hospital. A hospital direction map is included as **Appendix 11**.

Appendix 1

Affidavit

I, _____ (name), of _____
(company name) have read the Health and Safety Plan (HASP).

I agree to conduct all on-site work in accordance with the requirements set forth in this HASP
and understand that failure to comply with this HASP could lead to my removal from this site.

Signed:

_____ Date: _____

Appendix 2

Site Safety Officer

Dale C. Konas

Summary of Experience and Responsibilities:

Mr. Konas has over 5 years experience as an Engineer/Health and Safety Officer in the civil and environmental consulting fields. Specific experience includes: field construction coordination and management, site health and safety officer, project scheduling, planning and oversight, cost tracking, engineering technical support, research and development of innovative technologies, acquisition of permits, and the design of soil and ground-water remediation systems.

Mr. Konas was responsible for the design, construction oversight, and operation and maintenance construction projects. His experience also includes serving as the Health and Safety Officer for New York State Superfund projects, oversight and safety inspection of several commercial and New York City construction projects.

Education:

BS Civil Engineering, State University of New York at Buffalo, 1996.
AS Engineering Science, State University of New York at Farmingdale, 1993.

Professional Certifications:

New York State Registered Engineer-In-Training, EIT;
American Red Cross Community First Aid and Safety Certification
American Red Cross Adult, Infant, and Child CPR Certification
OSHA Certification, 40 hr Health & Safety Training at Hazardous Waste Sites.
OSHA Certification, Confined Space Entry and Supervisor

Project Experience:

- Field Engineer/Health and Safety Officer responsible for health and safety oversight during installation of an In-Well Air Stripping system at Department of Energy's Brookhaven National Laboratory. Responsible for Health and Safety training, equipment and piping testing, scheduling, planning and direct interaction with BNL engineers and health and safety personnel.
- Field Manager/Health and Safety Officer for a contract with the New York City Housing Department (NYCHA) to engineer, install and operate ground-water extraction and product recovery systems (fuel oil no. #2 - #6) at three housing tenants located in Brooklyn, NY. System components include the installation of large-diameter ground-water/product extraction wells, subsurface (trenching) installation of piping/system lines to the basements of the tenant buildings, down-well installation of both ground-water and product recovery pumps and associated equipment. Product recovery system components include oil/water separators, product recovery storage tanks and associated control panels, sensors, and safety switches. Contract work is in strict accordance with NYCDEP, NYSDEC, USEPA and OSHA. Responsible for the health and safety of on site

personnel.

- Provided Health and Safety services during the installation of over 20 Soil-Vapor Extraction (SVE) and Air Sparging (AS) systems at retail service station and industrial sites in New York. Responsible for project scheduling, health and safety material/equipment purchasing and training of personnel.

Health and Safety Alternate

Theodore F. Masters

Mr. Masters has over 12 years experience as a Hydrogeologist and Health and Safety manager in the environmental consulting field and has been involved in managing health and safety operations at hazardous waste and petroleum release sites at varying levels of assessment, containment and remediation. He has extensive experience in health and safety operations for: hydrogeologic investigations and site characterization; phase I and II property assessments; remedial investigation/feasibility studies; soil and ground-water remediation systems at active and closed underground storage tank facilities; risk assessment site evaluation; and, Federally mandated agricultural chemical soil and ground-water monitoring studies design and implementation.

As the Senior Project Manager for EnviroTrac Ltd., Mr. Masters is responsible for the overall management and health and safety of personnel conducting soil and ground-water investigations, selecting remedial technologies and installing and operating remediation systems for over 50 active retail service stations in New York City. Some of the systems include soil-vapor extraction (SVE), SVE / air sparging, and pump and treat.

Education:

Candidate MS Hydrogeology, State University of New York at Stony Brook, 2000.

BA Geology, State University of New York at Binghamton, 1986.

AS Conservation, Herkimer County Community College, 1982.

Professional Certifications:

American Red Cross Community First Aid and Safety Certification

American Red Cross Adult, Infant, and Child CPR Certification

Professional Geologist, PG-002657-G, Commonwealth of Pennsylvania

Licensed Environmental Professional, State of Connecticut Dept. of Environmental Protection

Licensed Subsurface Evaluator, Lic.#0015659, State of New Jersey Dept. Environmental Protection

OSHA Certification, 40 hr Health & Safety Training at Hazardous Waste Sites

Project Experience:

- Managed health and safety operations at over 35 soil and ground-water investigations at various utility companies in New York. Responsibilities included coordinating with the NYSDEC, the Fire Marshal, the building and health department.
- Site Health and Safety Officer at a PCB contaminated facility in West Virginia. Responsibilities included preparation of health and safety plan, managing maintenance of respiratory protection equipment and confined space entry permitting.
- Prepared health and safety plans at various soil and ground-water remediation systems in NY. Remediation systems include: product recovery; soil-vapor extraction with and without vapor treatment using catalytic oxidation or carbon adsorption; air sparging; pumping and treatment using oil/water separation, air stripping and carbon adsorption; bioremediation;

and, dual phase extraction using high vacuum technology.

- Performed health and safety oversight at over 40 UST and UST system closures in NY, NJ and CT. Responsibilities included coordinating with the State, local health departments, local Fire Marshals and contractors to remove petroleum USTs.

Appendix 3

Current OSHA 1910.120 Training Certificates for Site Personnel

Appendix 5

SAFETY REGULATIONS

The main safety emphasis is on preventing personal contact with gasses, soils, sludge and water. Towards that end, the following rules have been established

Regulations

- A. Eating on the site is PROHIBITED except in specifically designated areas.
- B. All project personnel on the site must wear clean or new gloves daily.
- C. If you get wet to the skin, you must wash the affected area with soap and water immediately.
If cloths in touch with the skin are wet, these must be changed.
- D. You must wash your hands and face before eating, drinking or smoking.

Recommendations

- A. Do not smoke with dirty hands; better yet, do not smoke.
- B. Check personal habit which could get soil or water into your body. Examples: food off your fingers, wiping your face or nose with a dirty hand or running a dirty hand through your hair.
- C. Check that any regularly worn clothing is clean. Examples: dirty watchbands, neck chains and a dirty liner on your safety helmet. Safety practices with poisonous chemicals can be summed up with a few words.
 - Don't breathe in chemical odors and don't touch the water, soil, and sludge.
 - If you do get dirty or wet, clean up as soon as possible.

Appendix 6

SAFETY REMINDER FOR TOXIC CHEMICALS

- Chemicals can't cause problems unless you breathe, eat or put them on your skin.

Chemicals in Gases, Soils, Sludge and Water

- Don't let them go into your mouth, nose, or stay on your skin.
- Use common sense personal hygiene
 - A. Don't eat or drink on the site.
 - B. No smoking in the work area.
 - C. wear protective clothing.
 - D. Keep your hands clean whenever practical. Wash before eating, drinking, or smoking.
 - E. Don't carry chemicals home to your family. (For example, on clothing, mud in the car, dirty hands.)
 - F. Follow strictly to the HASP.

Appendix 7

MATERIAL SAFETY DATA SHEET

SECTION 1 CHEMICAL PRODUCT IDENTIFICATION

EMERGENCY CONTACT:
CHEMTREC 1-800-424-9300

SUBSTANCE: TETRACHLOROETHYLENE

TRADE NAMES/SYNONYMS:

MTG MSDS 238; PERCHLOROETHYLENE; 1,1,2,2-TETRACHLOROETHYLENE; ETHYLENE
TETRACHLORIDE; PERC; TETRACHLORETHYLENE; PERCHLORETHYLENE;
TETRACHLOROETHENE; PCE; RCRA U210; UN 1897; C2Cl4; MAT22900; RTECS KX3850000

CHEMICAL FAMILY: halogenated, aliphatic

CREATION DATE: Jan 24 1989

REVISION DATE: Mar 19 2003

CAS NUMBER: 127-18-4

SECTION 2 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: volatile liquid

ODOR: faint odor, sweet odor

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, cancer hazard (in humans)

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, nausea, vomiting, chest pain, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, mood swings, loss of coordination, blurred vision, lung congestion, kidney damage, liver damage

LONG TERM EXPOSURE: irritation, nausea, stomach pain, loss of appetite, headache, drowsiness, dizziness, disorientation, sleep disturbances, pain in extremities, loss of coordination, blurred vision, hormonal disorders, internal bleeding, heart damage, liver damage, birth defects, brain damage, tumors, cancer

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation (possibly severe)

LONG TERM EXPOSURE: irritation

EYE CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: irritation

INGESTION:

SHORT TERM EXPOSURE: same as effects reported in short term inhalation

LONG TERM EXPOSURE: same as effects reported in long term inhalation

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

NOTE TO PHYSICIAN: For inhalation, consider oxygen. For ingestion, consider gastric lavage. Consider oxygen.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile).

FLASH POINT: No data available.

SECTION 6 ACCIDENTAL RELEASE MEASURES

SOIL RELEASE:

Dig holding area such as lagoon, pond or pit for containment. Dike for later disposal. Absorb with sand or other non-combustible material.

WATER RELEASE:

Absorb with activated carbon. Remove trapped material with suction hoses.

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Small liquid spills: Absorb with sand or other non-combustible material. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Store in a cool, dry place. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Keep separated from incompatible substances.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

TETRACHLOROETHYLENE (PERCHLOROETHYLENE):

100 ppm OSHA TWA

200 ppm OSHA ceiling

300 ppm OSHA peak 5 minute(s)/3 hour(s)

25 ppm (170 mg/m³) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

25 ppm ACGIH TWA

100 ppm ACGIH STEL

HASP May 2005

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

At any detectable concentration -

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Escape -

Any air-purifying respirator with a full facepiece and an organic vapor canister.

Any appropriate escape-type, self-contained breathing apparatus.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid

APPEARANCE: clear

COLOR: colorless

PHYSICAL FORM: volatile liquid

ODOR: faint odor, sweet odor

MOLECULAR WEIGHT: 165.83

MOLECULAR FORMULA: Cl₂-C-C-Cl₂

BOILING POINT: 250 F (121 C)

FREEZING POINT: -2 F (-19 C)

VAPOR PRESSURE: 14 mmHg @ 20 C

VAPOR DENSITY (air=1): 5.83

SPECIFIC GRAVITY (water=1): 1.6227

WATER SOLUBILITY: 0.015%

PH: Not available

VOLATILITY: Not available

ODOR THRESHOLD: 50 ppm

EVAPORATION RATE: 2.8 (butyl acetate=1)

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: alcohol, ether, benzene, chloroform, oils

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: acids, metals, bases, oxidizing materials, combustible materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: phosgene, halogenated compounds, oxides of carbon

POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

TETRACHLOROETHYLENE:

IRRITATION DATA:

810 mg/24 hour(s) skin-rabbit severe; 500 mg/24 hour(s) skin-rabbit mild; 162 mg eyes-rabbit mild; 500 mg/24 hour(s) eyes-rabbit mild

TOXICITY DATA:

34200 mg/m³/8 hour(s) inhalation-rat LC50; >10000 mg/kg skin-rabbit LD50 (Dow); 2629 mg/kg oral-rat LD50

CARCINOGEN STATUS: NTP: Anticipated Human Carcinogen; IARC: Human Limited Evidence, Animal Sufficient Evidence, Group 2A; ACGIH: A3 -Animal Carcinogen; EC: Category 2

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Moderately Toxic: ingestion

Slightly Toxic: inhalation

TARGET ORGANS: central nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: eye disorders, heart or cardiovascular disorders, kidney disorders, liver disorders, nervous system disorders, skin disorders and allergies

TUMORIGENIC DATA: Available.

MUTAGENIC DATA: Available.

REPRODUCTIVE EFFECTS DATA: Available.

ADDITIONAL DATA: May be excreted in breast milk. Alcohol may enhance the toxic effects. Stimulants such as epinephrine may induce ventricular fibrillation.

SECTION 12 ECOLOGICAL INFORMATION**ECOTOXICITY DATA:**

FISH TOXICITY: 8430 ug/L 96 hour(s) LC50 (Mortality) Flagfish (*Jordanella floridae*)

INVERTEBRATE TOXICITY: 7500 ug/L 48 hour(s) EC50 (Immobilization) Water flea (*Daphnia magna*)

ALGAL TOXICITY: 509000 ug/L 96 hour(s) EC50 (Photosynthesis) Diatom (*Skeletonema costatum*)

FATE AND TRANSPORT:

BIOCONCENTRATION: 49 ug/L 1-21 hour(s) BCF (Residue) Bluegill (*Lepomis macrochirus*) 3.43 ug/L

SECTION 13 DISPOSAL CONSIDERATIONS

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U210. Hazardous Waste Number(s): D039. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 0.7 mg/L. Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Tetrachloroethylene

ID NUMBER: UN1897

HAZARD CLASS OR DIVISION: 6.1

PACKING GROUP: III

LABELING REQUIREMENTS: 6.1

MARINE POLLUTANT: TETRACHLOROETHYLENE

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: TETRACHLOROETHYLENE

UN NUMBER: UN1897

CLASS: 6.1

PACKING GROUP/RISK GROUP: III

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

TETRACHLOROETHYLENE (PERCHLOROETHYLENE): 100 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: Yes

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):

TETRACHLOROETHYLENE (PERCHLOROETHYLENE)

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.



RemOx™ S ISCO Reagent

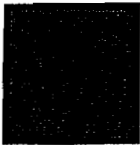
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Section 1 Chemical Product and Company Identification

PRODUCT NAME: RemOx™ S ISCO Reagent TRADE NAME: RemOx™ S ISCO Reagent		Revised Date: February 2005
USES OF SUBSTANCE: RemOx™ S ISCO Reagent is an oxidant recommended for applications that require a strong oxidant.		
COMPANY NAME (Europe): CARUS NALON S.L. COMPANY NAME (US): CARUS CHEMICAL COMPANY	COMPANY ADDRESS:	Carus Nalon S.L. Barrio Nalon, s/n 33100 Trubia-Oviedo Espana, Spain
	INFORMATION:	(34) 985-785-513 (34) 985-785-513 www.caruseurope.com (Web) carus@carusnalon.com (Email)
	EMERGENCY TELEPHONE:	(34) 985-785-513
	COMPANY ADDRESS:	315 Fifth Street Peru, IL 61354, USA
	INFORMATION:	(815)-223-1500 www.caruschem.com (Web) salesmkt@caruschem.com (Email)
	EMERGENCY TELEPHONE:	(800) 435 -6856 (USA) (800) 424-9300 (CHEMTREC, USA) (815-223-1500 (Other countries)

Section 2 Hazardous Ingredients

<u>MATERIAL OR COMPONENT</u>	<u>CAS NO.</u>	<u>EINECS</u>	<u>HAZARD DATA</u>
Potassium Permanganate	7722-64-7	231-760-3	PEL/C 5 mg Mn per cubic meter of air TLV-TWA 0.2 mg Mn per cubic meter of air
HAZARD SYMBOLS:			
 O Xn N			
RISK PHRASES:			
8 Contact with combustibles may cause fire. 22 Harmful if swallowed. 50/53 Very toxic to aquatic organisms, may cause long-term effects in the aquatic environment.			
SAFETY PHRASES:			
60 This material and its container must be disposed of as hazardous waste. 61 Avoid releases to the environment. Refer to special instructions / Safety data sheet.			



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Section 3 Hazards Identification

1. EYE CONTACT

RemOx™ S ISCO Reagent is damaging to eye tissue on contact. It may cause severe burns that result in damage to the eye.

2. SKIN CONTACT

Contact of solutions at room temperature may be irritating to the skin, leaving brown stains. Concentrated solutions at elevated temperature and crystals are damaging to the skin.

3. INHALATION

Acute inhalation toxicity data are not available. However, airborne concentrations of RemOx™ S ISCO Reagent the form of dust or mist may cause damage to the respiratory tract.

4. INGESTION

RemOx™ S ISCO Reagent, if swallowed, may cause severe burns to mucous membranes of the mouth, throat, esophagus, and stomach.

Section 4 First Aid Measures

1. EYES

Immediately flush eyes with large amounts of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Do not attempt to neutralize chemically. Seek medical attention immediately. **Note to physician:** Soluble decomposition products are alkaline. Insoluble decomposition product is brown manganese dioxide.

2. SKIN

Immediately wash contaminated areas with water. Remove contaminated clothing and footwear. Wash clothing and decontaminate footwear before reuse. Seek medical attention immediately if irritation is severe or persistent.

3. INHALATION

Remove person from contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. Seek medical attention immediately.

4. INGESTION

Never give anything by mouth to an unconscious or convulsing person. If person is conscious, give large quantities of water. Seek medical attention immediately.



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Section 5 Fire Fighting Measures

NFPA* HAZARD SIGNS

Health Hazard	1	=	Materials which under fire conditions would give off irritating combustion products. (less than 1 hour exposure) Materials that on the skin could cause irritation.
Flammability Hazard	0	=	Materials that will not burn.
Reactivity Hazard	0	=	Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.
Special Hazard	OX	=	Oxidizer

*National Fire Protection Association 704 (USA)

FIRST RESPONDERS:

Wear protective gloves, boots, goggles, and respirator. In case of fire, wear positive pressure breathing apparatus. Approach incident with caution.

FLASHPOINT

None

FLAMMABLE OR EXPLOSIVE LIMITS

Lower: Nonflammable Upper: Nonflammable

EXTINGUISHING MEDIA

Use large quantities of water. Water will turn pink to purple if in contact with RemOx™ S ISCO Reagent. Dike to contain. Do not use dry chemicals, CO₂ Halon® or foams.

SPECIAL FIREFIGHTING PROCEDURES

If material is involved in fire, flood with water. Cool all affected containers with large quantities of water. Apply water from as

far

a distance as possible. Wear self-contained breathing apparatus and full protective clothing.

UNUSUAL FIRE AND EXPLOSION

Powerful oxidizing material. May decompose spontaneously

if

exposed to heat (150°C / 302°F). May be explosive in contact

with

certain other chemicals (Section 10). May react violently with finely divided and readily oxidizable substances. Increases burning rate of combustible material.

Section 6 Accidental Release Measures

PERSONAL PRECAUTIONS:

Ensure adequate ventilation. Avoid dust formation. Avoid inhalation and contact with eyes and skin. Personnel should wear protective clothing suitable for the task. Remove all ignition sources and incompatible materials before attempting clean up.

ENVIRONMENTAL PRECAUTIONS:

Do not flush into sanitary sewer system or surface water. If accidental release into the environment occurs, inform the responsible authorities. Keep the product away from drains, sewers, surface and ground water and soil.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Clean up spills immediately by sweeping or shoveling up the material. Do not return spilled material to the original container – transfer to a clean metal drum. To clean contaminated surfaces or floors, flush with abundant quantities of water into sewer, if permitted by federal, state, and local regulations - if not, collect water and treat chemically (Section 13).



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Section 7 Handling and Storage

WORK/HYGIENIC PRACTICES

Wash hands thoroughly with soap and water after handling RemOx™ S ISCO Reagent. Do not eat, drink or smoke when working with RemOx™ S ISCO Reagent. Wear proper protective equipment. Remove clothing, if it becomes contaminated.

VENTILATION REQUIREMENTS

Provide sufficient mechanical and/or local exhaust to maintain exposure below the TLV/TWA.

CONDITIONS FOR SAFE STORAGE

Store in accordance with NFPA 430 requirements for Class II oxidizers. Protect containers from physical damage. Store in a cool, dry area in closed containers. Segregate from acids, peroxides, formaldehyde, and all combustible, organic, or easily oxidizable materials including antifreeze and hydraulic fluid.

Section 8 Exposure Controls and Personal Protection

RESPIRATORY PROTECTION

In cases where overexposure to dust may occur, the use of an approved NIOSH-MSHA dust respirator or an air supplied respirator is advised. Engineering or administrative controls should be implemented to control dust.

EYE

Faceshield, goggles, or safety glasses with side shields should be worn. Provide eyewash in working area.

GLOVES

Rubber or plastic gloves should be worn.

OTHER PROTECTIVE EQUIPMENT

Normal work clothing covering arms and legs, and rubber, or plastic apron should be worn.

Section 9 Physical and Chemical Properties

APPEARANCE AND ODOR

Dark purple solid with metallic luster, odorless

BOILING POINT, 760 mm Hg

Not applicable

VAPOR PRESSURE (mm Hg)

Not applicable

SOLUBILITY IN WATER % BY SOLUTION

6% at 20°C (68°F) and 20% at 65°C (149°F)

PERCENT VOLATILE BY VOLUME

Not volatile

EVAPORATION RATE

Not applicable

MELTING POINT

Starts to decompose with evolution of oxygen (O₂) at temperatures above 150°C (302°F). Once initiated, the decomposition is exothermic and self-sustaining.

SPECIFIC GRAVITY

2.7 at 20°C (68°F)

BULK DENSITY

Approximately 1.45 - 1.6 kg / l

VAPOR DENSITY (AIR=1)

Not applicable

OXIDIZING PROPERTIES

Strong oxidizer



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Section 10 Stability and Reactivity

STABILITY	Under normal conditions, the material is stable.
CONDITIONS TO AVOID	Contact with incompatible materials or heat (150°C / 302°F) could result in violent exothermic chemical reaction.
INCOMPATIBLE MATERIALS	Acids, peroxides, formaldehyde, anti-freeze, hydraulic fluids and all combustible organic or readily oxidizable inorganic materials including metal powders. With hydrochloric acid, chlorine gas is liberated.
HAZARDOUS DECOMPOSITION PRODUCTS	When involved in a fire, RemOx™ S ISCO Reagent may liberate corrosive fumes.
CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION	Material is not known to polymerize.

Section 11 Toxicological Information

POTASSIUM PERMANGANATE:

1. ACUTE TOXICITY

INGESTION:

LD 50 oral rat: 780 mg/kg male (14 days); 525 mg/kg female (14 days).

Harmful if swallowed. ALD: 10g. Ingestion may cause nausea, vomiting, sore throat, stomach-ache and eventually lead to a perforation of the intestine. Liver and kidney injuries may occur.

SKIN CONTACT:

LD 50 dermal no data available.

The product may be absorbed into the body through the skin. Major effects of exposure: severe irritation, brown staining of skin.

INHALATION:

LC 50 inhalation: No data available.

The product may be absorbed into the body by inhalation. Major effects of exposure: respiratory disorder, cough.

2. CHRONIC TOXICITY

No known cases of chronic poisoning due to permanganates have been reported. Prolonged exposure, usually over many years, to heavy concentrations of manganese oxides in the form of dust and fumes may lead to chronic manganese poisoning, chiefly involving the central nervous system.

3. CARCINOGENICITY

Potassium permanganate has not been classified as a carcinogen by ACGIH, NIOSH, OSHA, NTP, or IARC.

4. MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Potassium permanganate solution will cause further irritation of tissue, open wounds, burns or mucous membranes.



RemOx™ S ISCO Reagent

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Section 12 Ecological Information

ENTRY TO THE ENVIRONMENT

Potassium permanganate has a low estimated lifetime in the environment, being readily converted by oxidizable materials to insoluble MnO_2 .

BIOCONCENTRATION POTENTIAL

In non-reducing and non-acidic environments, MnO_2 is insoluble and has a very low bioaccumulative potential.

AQUATIC TOXICITY

The toxicity data for Potassium permanganate is given below:

Rainbow trout, 96 hour LC_{50} :	1.8 mg/L
Bluegill sunfish, 96 hour LC_{50} :	2.3 mg/L
Milk fish (Chanos Chanos)/ 96 hour LC_{50} :	>1.4mg/l

Section 13 Disposal Considerations

Offer surplus and non-recyclable product or solutions to a licensed disposal company.

Reduce RemOx™ S ISCO Reagent in aqueous solutions with sodium thiosulfate, a bisulfite or ferrous salt solution. The bisulfite or ferrous salt may require some dilute sulfuric acid (10% w/w) to promote reduction. Neutralize with sodium carbonate to neutral pH, if acid was used. Decant or filter and deposit sludge in approved landfill. Where permitted, the sludge may be drained into sewer with large quantities of water. Contact Carus Chemical Company for additional recommendations.

Packaging materials must be triple rinsed to remove all RemOx™ S ISCO Reagent prior to re-cycling or disposal.

Section 14 Transport Information

USA (land, D.O.T.)	Proper Shipping Name:	49 CFR172.101....Potassium Permanganate
	Hazard Class:	49 CFR172.101....Oxidizer
	ID Number:	49 CFR172.101....UN 1490
	Packing Group:	49 CFR172.101....II
European Labeling in accordance Road/Rail Transport (ADR/RID)	Division:	49 CFR172.101....5.1
	ID Number:	UN 1490
	ADR/RID Class	5.1
	Description of Goods:	Potassium Permanganate
European Labeling in accordance with EC directive (Water, I.M.O.)	Hazard Identification No.	50
	Proper Shipping Name:	Potassium Permanganate
	Hazard Class:	Oxidizer
	ID Number:	UN 1490
	Packing Group:	II
	Division:	5.1
	Marine Pollutant:	No



RemOx™ S ISCO Reagent

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Section 14 Transport Information (contd.)

European Labeling in accordance with EC directive (Air, I.C.A.O.)	Proper Shipping Name: Potassium Permanganate Hazard Class: Oxidizer ID Number: UN 1490 Packing Group: II Division: 5.1

Section 15 Regulatory Information

EUROPEAN AND INTERNATIONAL REGULATIONS:

MARKINGS ACCORDING TO EU GUIDELINES:

The product has been classified and marked in accordance with EU directives/ordinances on hazardous materials.

CHEMICAL NAME

Potassium Permanganate

CAS NO.

7722-64-7

EINECS

231-760-3

UN NUMBER

UN 1490

CODE LETTER AND HAZARD DESIGNATION OF THE PRODUCT:



O
Oxidizer



Xn
Harmful



N
Dangerous to the Environment

RISK PHRASES:

- 8 Contact with combustibles may cause fire.
22 Harmful if swallowed.
50/53 Very toxic to aquatic organisms, may cause long-term effects in the aquatic environment.

SAFETY PHRASES:

- 60 This material and its container must be disposed of as hazardous waste.
61 Avoid releases to the environment. Refer to special instructions / Safety data sheet.



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Section 15 Regulatory Information (contd.)

US FEDERAL REGULATIONS:

CHEMICAL INVENTORY STATUS - PART 1

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>TSCA</u>	<u>EC</u>	<u>Japan</u>	<u>Australia</u>
Potassium Permanganate	7722-64-7	Yes	Yes		

CHEMICAL INVENTORY STATUS - PART 2 -- CANADA--

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>Korea</u>	<u>DSL</u>	<u>NDSL</u>	<u>PHIL</u>
Potassium Permanganate	7722-64-7	No	Yes		

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR, Canada) and the MSDS contains all of the information required by the CPR.

FEDERAL, STATE & INTERNATIONAL REGULATIONS - PART 1

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>SARA 302</u> <u>RQ</u>	<u>TPQ</u>	<u>SARA 313</u> <u>List</u>	<u>Chemical Catg.</u>
Potassium Permanganate	7722-64-7	N/A	N/A	Yes	Yes (Manganese compounds)

FEDERAL, STATE & INTERNATIONAL REGULATIONS - PART 2

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>CERCLA</u> <u>Yes (RQ =100 lbs)</u>	<u>RCRA</u> <u>D001</u>	<u>TSCA 8(d)</u> <u>No</u>
Potassium Permanganate	7722-64-7	Yes (RQ =100 lbs)	D001	No

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>CWC</u>	<u>TSCA 12(b)</u>	<u>CDTA</u> <u>311/312</u>	<u>SARA</u> <u>4545 Kg</u>
Potassium Permanganate	7722-64-7	No	No		

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>Acute</u>	<u>Chronic</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>	<u>Pure/Liquid</u>
Potassium Permanganate	7722-64-7	Yes	Yes	Yes	No	No	Pure

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>Australian Hazchem Code</u>	<u>Poison Schedule</u>	<u>WHMIS</u> <u>C, D2B</u>
Potassium Permanganate				



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Section 16 Other Information

NIOSH	National Institute for Occupational Safety and Health
MSHA	Mine Safety and Health Administration
OSHA	Occupational Safety and Health Administration
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
PEL	Permissible Exposure Limit
C	Ceiling Exposure Limit
TLV-TWA	Threshold Limit Value-Time Weighted Average
CAS	Chemical Abstract Service
EINECS	Inventory of Existing Chemical Substances (European)

Chithambarathanu Pillai (S.O.F.)
February 2005

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CARUS NALON S.L. IS A DIVISION OF CARUS CORPORATION, 315 5TH STREET, PERU, ILLINOIS 61354



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RemOx™ L ISCO Reagent

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Section 1 Chemical Product and Company Identification

PRODUCT NAME: RemOx™ L ISCO Reagent	Revision Date: February 2005
TRADE NAME: RemOx™ L ISCO Reagent	

USES OF SUBSTANCE: RemOx™ L ISCO Reagent is a liquid oxidant recommended for in-situ and ex-situ remediation of sites that require a strong oxidant.

COMPANY NAME (Europe): CARUS NALON S.L. COMPANY NAME (US): CARUS CHEMICAL COMPANY	COMPANY ADDRESS:	Carus Nalon S.L. Barrio Nalon, s/n 33100 Trubia-Oviedo Espana, Spain
	INFORMATION:	(34) 985-785-513 (34) 985-785-513 www.caruseurope.com (Web) carus@carusnalon.com (Email)
	EMERGENCY TELEPHONE:	(34) 985-785-513
	COMPANY ADDRESS:	315 Fifth Street Peru, IL 61354, USA
	INFORMATION:	(815)-223-1500 www.caruschem.com (Web) salesmkt@caruschem.com (Email)
	EMERGENCY TELEPHONE:	(800) 435 -6856 (USA) (800) 424-9300 (CHEMTREC, USA) (815-223-1500 (Other countries)

Section 2 Hazardous Ingredients

Material or Component	CAS No.	%	Hazard Data
Sodium Permanganate	10101-50-5	40	PEL/C 5 mg Mn per cubic meter of air TLV-TWA 0.2 mg Mn per cubic meter of air

Section 3 Hazards Identification

- Eye Contact**
RemOx™ L ISCO Reagent is damaging to eye tissue on contact. It may cause burns that result in damage to the eye.
- Skin Contact**
Momentary contact of solution at room temperature may be irritating to the skin, leaving brown stains. Prolonged contact is damaging to the skin.
- Inhalation**
Acute inhalation toxicity data are not available. However, airborne concentrations of RemOx™ L ISCO Reagent in the form of mist may cause irritation to the respiratory tract.
- Ingestion**
RemOx™ L ISCO Reagent if swallowed, may cause burns to mucous membranes of the mouth, throat, esophagus, and stomach.



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Section 4 First Aid Measures

1. Eyes
Immediately flush eyes with large amounts of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Do not attempt to neutralize chemically. Seek medical attention immediately. Note to physician: Decomposition products are alkaline.
2. Skin
Immediately wash contaminated areas with water. Remove contaminated clothing and footwear. (Caution: Solution may ignite certain textiles). Wash clothing and decontaminate footwear before reuse. Seek medical attention immediately if irritation is severe and persistent.
3. Inhalation
Remove person from contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. Seek medical attention immediately.
4. Ingestion
Never give anything by mouth to an unconscious or convulsing person. If person is conscious, give large quantities of water or milk. Seek medical attention immediately.

Section 5 Fire Fighting Measures

NFPA* HAZARD SIGNS:

Health Hazard	1	=	Materials which under fire conditions would give off irritating combustion products. (less than 1 hour exposure)	Materials which on the skin could cause irritation.
Flammability Hazard	0	=	Materials that will not burn.	
Reactivity Hazard	0	=	Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.	
Special Hazard	OX	=	Oxidizer	

*National Fire Protection Association 704

FIRST RESPONDERS:

Wear protective gloves, boots, goggles, and respirator. In case of fire, wear positive pressure breathing apparatus. Approach incident with caution. Use 2004 Emergency Response Guidebook (U.S. DOT RSPA, TC and STC). Guide No. 140. (<http://hazmat.dot.gov/pubs/erg2004/erg2004.pdf>).

FLASHPOINT

None

FLAMMABLE OR EXPLOSIVE LIMITS

Lower: Nonflammable Upper: Nonflammable

EXTINGUISHING MEDIA

Use large quantities of water.
Water will turn pink to purple if in contact with RemOx™ L ISCO Reagent. Dike to contain.
Do not use dry chemicals, CO₂Halon® or foams.

SPECIAL FIREFIGHTING PROCEDURES

If material is involved in fire, flood with water. Cool all affected containers with large quantities of water. Apply water from as far as a distance as possible. Wear self-contained breathing apparatus and full protective clothing.



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UNUSUAL FIRE AND EXPLOSION

Powerful oxidizing material. May decompose spontaneously if exposed to heat (135°C/275°F). May be explosive in contact with certain other chemicals (Section 10). May react violently with finely divided and readily oxidizable substances. Increases burning rate of combustible material. May ignite wood and cloth.

Section 6 Accidental Release Measures

PERSONAL PRECAUTIONS

Personnel should wear protective clothing suitable for the task. Remove all ignition sources and incompatible materials before attempting clean up.

ENVIRONMENTAL PRECAUTIONS:

Do not flush into sanitary sewer system or surface water. If accidental release into the environment occurs, inform the responsible authorities. Keep the product away from drains, sewers, surface and ground water and soil.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Contain spill by collecting the liquid in a pit or holding behind a dam (sand or soil). Dilute to approximately 6% with water, and then reduce with sodium thiosulfate, a bisulfite or ferrous salt solution. The bisulfite or ferrous salt may require some dilute sulfuric acid (10% w/w) to promote reduction. Neutralize with sodium carbonate to neutral pH, if acid was used. Decant or filter and deposit sludge in approved landfill. Where permitted, the sludge may be drained into sewer with large quantities of water. To clean contaminated floors, flush with abundant quantities of water into sewer, if permitted by federal, state, and local regulations. If not, collect water and treat as above.

Section 7 Handling and Storage

WORK/HYGIENIC PRACTICES

Wash hands thoroughly with soap and water after handling RemOx™ L ISCO Reagent. Do not eat, drink or smoke when working with RemOx™ L ISCO Reagent. Wear proper protective equipment. Remove clothing, if it becomes contaminated.

VENTILATION REQUIREMENTS

Provide sufficient mechanical and/or local exhaust to maintain exposure below the TLV/TWA.

CONDITIONS FOR SAFE STORAGE

Store in accordance with NFPA 430 requirements for Class II oxidizers. Protect containers from physical damage. Store in a cool, dry area in closed containers. Segregate from acids, peroxides, formaldehyde, and all combustible, organic, or easily oxidizable materials including antifreeze and hydraulic fluid.

Section 8 Exposure Controls and Personal Protection

RESPIRATORY PROTECTION

In cases where overexposure to mist may occur, the use of an approved NIOSH-MSHA mist respirator or an air



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supplied respirator is advised. Engineering or administrative controls should be implemented to control mist.	
EYE	Faceshield, goggles, or safety glasses with side shields should be worn. Provide eyewash in working area.
GLOVES	Rubber or plastic gloves should be worn.
OTHER PROTECTIVE EQUIPMENT	Normal work clothing covering arms and legs, and rubber, or plastic apron should be worn. Caution: If clothing becomes contaminated, wash off immediately. Spontaneous ignition may occur with cloth or paper.

Section 9 Physical and Chemical Properties

APPEARANCE AND ODOR	Dark purple solution, odorless
BOILING POINT, 760 mm Hg	105 °C
VAPOR PRESSURE (mm Hg)	760 mm at 105°C
SOLUBILITY IN WATER % BY SOLUTION	Miscible in all proportions
PERCENT VOLATILE BY VOLUME	61% (as water)
EVAPORATION RATE	Same as water
FREEZING POINT	-15.0 °C
SPECIFIC GRAVITY	1.36-1.39
pH	5-9
OXIDIZING PROPERTIES	Strong oxidizer. May ignite wood and cloth.
EXPLOSIVE PROPERTIES	Explosive in contact with sulfuric acid or peroxides, or readily oxidizable substances.

Section 10 Stability and Reactivity

STABILITY	Under normal conditions, the material is stable.
CONDITIONS TO AVOID could	Contact with incompatible materials or heat (135°C / 275°F) result in violent exothermic chemical reaction.
INCOMPATIBLE MATERIALS	Acids, peroxides, formaldehyde, antifreeze, hydraulic fluids, and all combustible organic or readily oxidizable materials, including metal powders. With hydrochloric acid, toxic chlorine gas is liberated.
HAZARDOUS DECOMPOSITION PRODUCTS	When involved in a fire, liquid permanganate may form corrosive fumes.



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CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION

Material is not known to polymerize.

Section 11 Toxicological Information

SODIUM PERMANGANATE: Acute oral LD₅₀ not known.

1. Acute toxicity

Irritating to body tissue with which it comes into contact. No acute toxicity data is available for sodium permanganate. Toxicity is expected to be similar to that of potassium permanganate. The toxicity data for potassium permanganate is given below:

Ingestion:

LD 50 oral rat: 780 mg/kg male (14 days); 525 mg/kg female (14 days).

Harmful if swallowed. ALD: 10g. Ingestion may cause nausea, vomiting, sore throat, stomach-ache and eventually lead to a perforation of the intestine. Liver and kidney injuries may occur.

Skin contact:

LD 50 dermal no data available.

The product may be absorbed into the body through the skin. Major effects of exposure: severe irritation, brown staining of skin.

Inhalation:

LC 50 inhal. no data available.

The product may be absorbed into the body by inhalation. Major effects of exposure: respiratory disorder, cough.

2. Chronic toxicity

No known cases of chronic poisoning due to permanganates have been reported. Prolonged exposure, usually over many years, to heavy concentrations of manganese oxides in the form of dust and fumes may lead to chronic manganese poisoning, chiefly involving the central nervous system.

3. Carcinogenicity

Sodium permanganate has not been classified as a carcinogen by ACGIH, NIOSH, OSHA, NTP, or IARC.

4. Medical Conditions Generally Aggravated by Exposure

Sodium permanganate solution will cause further irritation of tissue, open wounds, burns or mucous membranes.

Section 12 Ecological Information

Entry to the Environment

Permanganate has a low estimated lifetime in the environment, being readily converted by oxidizable materials to insoluble MnO₂.

Bioconcentration Potential

In non-reducing and non-acidic environments MnO₂ is insoluble and has a very low bioaccumulative potential.



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Aquatic Toxicity

No data.

Section 13 Disposal Considerations

Waste Disposal

RemOx™ L ISCO Reagent, once it becomes a waste, is considered a D001 hazardous (ignitable) waste. For disposal of RemOx™ L ISCO Reagent solutions, follow procedures in Section 6 and deactivate the permanganate to insoluble manganese dioxide. Dispose of it in a permitted landfill. Contact Carus Chemical Company for additional recommendations.

Section 14 Transport Information

USA (land, D.O.T.)	Proper Shipping Name: 49 CFR 172.101 Permanganates, inorganic, aqueous Hazard Class: solution, n.o.s. (contains sodium permanganate) ID Number: 49 CFR 172.101....Oxidizer Packing Group: 49 CFR 172.101....UN 3214 Division: 49 CFR 172.101....II Division: 49 CFR 172.101....5.1
European Labeling in accordance Road/Rail Transport (ADR/RID)	ID Number: UN 3214 ADR/RID Class 5.1 Description of Goods: Permanganates, inorganic, aqueous solution, n.o.s (contains sodium permanganate) Hazard Identification No. 50
European Labeling in accordance with EC directive (Water, I.M.O.)	Proper Shipping Name: Permanganates, inorganic, aqueous solution, n.o.s (contains sodium permanganate) Hazard Class: Oxidizer ID Number: UN 3214 Packing Group: II Division: 5.1 Marine Pollutant: No
European Labeling in accordance with EC directive (Air, I.C.A.O.)	Proper Shipping Name: Permanganates, inorganic, aqueous solution, n.o.s (contains sodium permanganate) Hazard Class: Oxidizer ID Number: UN 3214 Packing Group: II Division: 5.1

Section 15 Regulatory Information (Sodium Permanganate)

TSCA	Listed in the Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
CERCLA	Not listed.
RCRA	Oxidizers such as RemOx™ L ISCO Reagent solution meet the criteria of ignitable waste. 40 CFR 261.21.
SARA TITLE III Information	
Section 302/303	Extremely hazardous substance: Not listed



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Section 311/312	Hazard categories: Fire, acute and chronic toxicity.
Section 313	RemOx™ L ISCO Reagent contains 40% manganese compounds as part of the chemical and is subject to the reporting requirements of Section 313 of Title III, Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.
FOREIGN LIST	Canadian Non-Domestic Substance List , EINECS

Section 16 Other Information

NIOSH	National Institute for Occupational Safety and Health
MSHA	Mine Safety and Health Administration
OSHA	Occupational Safety and Health Administration
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
PEL	Permissible Exposure Limit
C	Ceiling Exposure Limit
TLV-TWA	Threshold Limit Value-Time Weighted Average
CAS	Chemical Abstract Service
EINECS	Inventory of Existing Chemical Substances (European)

Chithambarathanu Pillai (S.O.F.)
February 2005

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Daily Tailgate Safety Meeting Log
(to be completed on site)

[illegible][illegible]

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Appendix 11
HOSPITAL DIRECTIONS & LOCATION MAP

Well Sampling Schedule



TABLE 02590-2
NATIONAL HEATSET PERMANGANATE INJECTION
PROPOSED MONITORING SCHEDULE

Well	status	TYPE	depth	Baseline	weekly during weeks 1-4	bi-weekly weeks 6 and 8	after purple disappears	Quarterly 3x
MW-A	existing	Injection	deep	Full	field parameters	field parameters	Full	Full
MW-7	existing	Injection	deep	Full	field parameters	field parameters	Full	Full
MW-6	existing	Injection	shallow	Full	field parameters	field parameters	Full	Full
MW-B	existing	Injection	deep	Full	field parameters	field parameters	Full	Full
IW-A-S	proposed	Injection	shallow	Full	field parameters	field parameters	Full	Full
IW-A-I	proposed	Injection	intermediate	Full	field parameters	field parameters	Full	Full
IW-6-I	proposed	Injection	intermediate	Full	field parameters	field parameters	Full	Full
IW-6-D	proposed	Injection	deep	Full	field parameters	field parameters	Full	Full
IW-7-S	proposed	Injection	shallow	Full	field parameters	field parameters	Full	Full
IW-7-I	proposed	Injection	intermediate	Full	field parameters	field parameters	Full	Full
IW-8-S	proposed	Injection	shallow	Full	field parameters	field parameters	Full	Full
IW-8-I	proposed	Injection	intermediate	Full	field parameters	field parameters	Full	Full
IW-1-I	proposed	Injection	intermediate	NM	field parameters	field parameters	NM	NM
IW-1-D	proposed	Injection	deep	NM	field parameters	field parameters	NM	NM
IW-2-S	proposed	Injection	shallow	NM	field parameters	field parameters	NM	NM
IW-2-I	proposed	Injection	intermediate	NM	field parameters	field parameters	NM	NM
IW-2-D	proposed	Injection	deep	NM	field parameters	field parameters	NM	NM
IW-3-S	proposed	Injection	shallow	NM	field parameters	field parameters	NM	NM
IW-3-I	proposed	Injection	intermediate	NM	field parameters	field parameters	NM	NM
IW-3-D	proposed	Injection	deep	NM	field parameters	field parameters	NM	NM
IW-4-S	proposed	Injection	shallow	NM	field parameters	field parameters	NM	NM
IW-4-I	proposed	Injection	intermediate	NM	field parameters	field parameters	NM	NM
IW-4-D	proposed	Injection	deep	NM	field parameters	field parameters	NM	NM
IW-5-S	proposed	Injection	shallow	NM	field parameters	field parameters	NM	NM
IW-5-I	proposed	Injection	intermediate	NM	field parameters	field parameters	NM	NM
IW-5-D	proposed	Injection	deep	NM	field parameters	field parameters	NM	NM
IW-8-I	proposed	Injection	intermediate	NM	field parameters	field parameters	NM	NM
IW-8-D	proposed	Injection	deep	NM	field parameters	field parameters	NM	NM
MW-C	existing	Monitoring	deep	Full	field parameters	field parameters	Full	Full
MW-E	existing	Monitoring	deep	Full	field parameters	field parameters	Full	Full
MW-F	existing	Monitoring	shallow	Full	field parameters	field parameters	Full	Full
MW-G	existing	Monitoring	deep	Full	field parameters	field parameters	Full	Full
MW-9	existing	Sentinel	deep	Full	field parameters	field parameters	Full	Full
MW-3A	existing	Sentinel	shallow	Full	field parameters	field parameters	Full	Full
MW-10	existing	Sentinel	deep	Full	field parameters	field parameters	Full	Full
MW-2A	existing	Sentinel	shallow	Full	field parameters	field parameters	Full	Full
MW-H	existing	Sentinel	deep	Full	field parameters	field parameters	Full	Full

Notes: 1.) Full indicates VOCs by GC/MS (method EPA 8260), and Field parameters.

2.) Field parameters indicates temperature, pH, conductivity, dissolved oxygen, redox potential (ORP) and permanganate.

3.) Performance standard is 4 quarters of groundwater at less than or equal to MCLs for PCE, TCE, and DCE in the "treatment area". The 4 quarters include the full parameters after the purple disappears, then the next 3 quarters (last column, "quarterly 3x").

4.) NM -- Not monitored.

Progress Meeting #1 – National Heatset

Date: 7-27-05

Contract: D005272

Site: 1-52-140 - National Heatset Printing

Attendees: Kevin Murphy (EnviroTrac), Edwin Rahn (OBG), Robert Szczepanski (EnviroTrac)

The following is a list of the items discussed during the on-site progress meeting at National Heatset Printing and associated actions:

- **Site Mobilization:** EnviroTrac needs to post signs on site perimeter fencing and at the main entrance to 1 Adams Blvd. The sign will be posted on the fence at the parking lot entrance. Hospital directions should be posted in easily visible areas within the site.
- **Outstanding Submittals:** List of outstanding submittals was given to Ed Rahn and will be forwarded to Marc Dent (OBG) and Wayne Hoagland (OBG). EnviroTrac had several questions about the well head installations and will forward an RFI to Marc, Wayne and Jeff Dyber from the NYSDEC.
- **Work Schedule:** Well Installation is complete; Rob Szczepanski is currently performing well development and should finish by 7-29-05. All completed wells have been developed to "sediment free" conditions and have been approved by Ed. Next week baseline sampling will occur however, there is a conflict in the contract specifications regarding which wells are to be sampled. Section 2590, subsection 3.02 indicates that all new injection wells will be sampled as part of the "Pre-Treatment Monitoring" and additionally, 13 existing wells will be sampled as part of the baseline event. Table 2590-2 (Proposed Monitoring Schedule) indicates that 16 of the injection wells will not be sampled in the baseline sampling event. Ed indicated that he had brought this to Marc Dent's attention and that he was awaiting a response. EnviroTrac will also forward an RFI.
- **Additional items of discussion:** EnviroTrac mentioned that through their experience with Permanganate, leaks in any above ground piping could be more effectively monitored and maintained if the pipes were not covered with the contract specified clean fill. Additionally, based upon the location of the SVE trailer on the back wall of the building, EnviroTrac also suggested moving the 10 point manifold header to the rear property line. EnviroTrac indicated that relocating the piping would reduce the risk of any future damage via vehicle or personnel traffic and that any benefit of covering the pipe would be negated after relocation. Ed Rahn indicated that he didn't see a problem with this and would speak with Mark and Wayne about it. EnviroTrac will also forward an RFI requesting the pipe covering be eliminated.

Progress Meeting #2 – National Heatset

Date: 8-25-05

Contract: D005272

Site: 1-52-140 - National Heatset Printing

Attendees: Jeff Dyber (NYSDEC), John Szymanski (EnviroTrac), Edwin Rahn (OBG), Robert Szczepanski (EnviroTrac), Dale Konas (EnviroTrac)

The following is a list of the items discussed during the on-site progress meeting at National Heatset Printing and associated actions:

- **Site Walk:** Attendees did a site walk of the entire work area. Dale Konas led a detailed discussion regarding how the above-ground injection manifold and well head connections are to be installed and how the flow rates will be controlled and measured during injection. The area for the system equipment was identified and it was agreed that a containment system will be placed beneath the system components. Jeff Dyber requested that the former Commissioner Erin Crotty's name be replaced on the site sign with the Acting Commissioners' name, Denise M. Sheehan. EnviroTrac is concerned that the tenants trailer located on the south side of the building may prevent access of system components, specifically the frac tank. Ed Rahn will contact site representative, Leo Orellana, and request that the trailer be moved prior to arrival of the equipment. The location of the new electric transformer and pad was identified, located on the south side of the building in front of the existing building service.
- **Work Schedule:** Construction of the well head manifolds were being performed off-site. Connection to the wellhead will be performed by EnviroTrac next week. Flow meters for wells are currently on backorder and should arrive in 2-3 weeks. Electrician will be on-site next week to begin installing conduit and wire from service area to treatment system. Carus Chemical equipment and product is expected to arrive by the end of next week.
- **Field Observation/Problems/Conflicts:** The issue of water supply was discussed. It is unclear as of now whether EnviroTrac will be able to use water supplied from the owner's property or if the fire hydrant in the street is still a viable option. EnviroTrac will continue to pursue this issue.
- **Submittals:** EnviroTrac is awaiting spec sheets/data sheets on the equipment provided by Carus Chemical. ET will forward upon receipt. Ed stated that Marc Dent verbally agreed to the design of the wellhead construction detail supplied by EnviroTrac. EnviroTrac will provide OBG a certification of clean fill supplied to the site.
- **Health and Safety:** No H & S incidents. EnviroTrac has provided all contract required items.
- **Changes/Substitutions:** RFI was forwarded to OBG regarding processing development water from wells through the treatment system. Ed stated that OBG did not appear to have any concerns regarding this. Jeff agreed. The above-ground header is to remain as is currently constructed. It was agreed that the well caps do not require to be vented as shown on the SHAW diagram listed in the contract specifications. Due to the discrepancy between the written specifications and Table 2590-2 regarding the injection monitoring requirements, the NYSDEC will accept field parameter monitoring in the monitoring wells (non injection wells) during the injection events. The injection wells will be included only after both injection events are completed. It was agreed that the intent was to begin monitoring at the on-set of injection but monitoring could not be performed in wells that were included in the injection event.

From: Wayne Hoagland
To: Dent, Marc; Rahn, Edwin
Date: 8/1/2005 9:26:53 AM
Subject: Re: National Heatset

It seems that this is either a field clarification or a mod. it seem there is a discrepancy in the number of samples and what testing is required. We will need to determine cost effects when we know what the tests are. We need to document this so let me know. Thanks -Wayne

>>> Marc Dent 07/28/05 5:15 PM >>>
Ed,

I spoke to Jeff Dyber today regarding the baseline sampling of the wells at National Heatset and we came up with the following clarification.

1. Refer to Table 02590-2 and not the text.
2. In the table under "Baseline", where ever it says "NM" replace it with "field parameters".

I called Chris Voci in our Blue Bell office to see if there are field tests to determine redox potential and permanganate. If I don't get a voice mail from him tomorrow, call him Monday and talk to him about this. He knows everything.

Marc

APPENDIX G

Field Daily Reports



Project: NYSDEC – National Heatset Printing	File No. 10653/35518	Date: Wednesday July 13, 2005
Weather Conditions: Temp. 70/75 Thunder Storm/Overcast	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	3.5	Drill Rig	1	Diedrich D 120
EnviroTrac	1	6	Model 580B OVM#3 Smart Portable	1	PID
Assoc. Environmental Services	2	8			

DESCRIPTION OF SITE ACTIVITIES:**7/13/05**

Met Rob Szczepanski of EnviroTrac and Brian and James (drillers) with Associated Environmental Services. Work was delayed due to thunder storms.

Rob and I laid out the location for wells 8 and 5.

Associated Env. Services drilled well IW-8-D to a depth of 80 feet. Rob checked the well cuttings with a PID. All readings were non-detect (ND). The well cuttings were medium brown sand. The 2-inch PVC well piping screw joints were glued using Weld-On PVC 705. Filtration Sand was installed around the screening. A bentonite seal was installed above the sand. The well was backfilled with cuttings and capped a foot from the surface with bentonite.

A field office trailer was delivered to the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday July 14, 2005	
Weather Conditions: Temp. 73/83 Overcast/Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Drill Rig	1	Diedrich D 120
EnviroTrac	1	8	Model 580B OVM#3 Smart Portable	1	PID
Assoc. Environmental Services	2	8			

DESCRIPTION OF SITE ACTIVITIES:**7/14/05**

Everyone on site at 6:00. Drilled bore hole for well IW-8-I (Intermediate) to a depth of 55 feet. Well cuttings (medium brown sand) were tested with PID. The results were ND.

Bore hole for well IW-5-S (shallow) was drilled to a depth of 35 feet. At a depth of 25 to 30 feet the well cuttings exhibited a light gray color and had a slight odor. The cuttings were placed on poly and tested with the PID. The PID results were ND.

Bore hole for well IW-5-D (deep) was drilled to a depth of 80 feet. Well cuttings tested with the PID showed readings of 3 to 6 ppm. The cuttings were placed on poly.

Bore hole for well IW-5-I was drilled to a depth of 55 feet. At approximately 40 feet the well cuttings had a reading on the PID of 9 ppm. The material was placed on poly.

The 10-foot sections of 2-inch well piping are screwed together and glued with Weld-On PVC 705. A PVC cap is placed on the bottom of the 10-foot screened section. The well piping is placed on a PVC plug at the bottom of the auger. The 10 feet of screen is surrounded with FliPro Filtration Sand & Gravel. A bentonite seal of Cetco Coated ¼-inch Bentonite Tablets is placed above the sand. The boring is then filled with cuttings. The last foot is sealed with Pure Gold Medium Chips (bentonite). A 2-foot stickup is placed on top of the well piping.

An electrician was on site to schedule connecting electrical power to the Field Office trailer.

The drillers informed Rob and me they would not be on site tomorrow.

The drillers were completed with well work at 2:00.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Friday July 15, 2005
Weather Conditions: Overcast	Temp. 79/85	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	2.5	Drill Rig		Diedrich D 120
EnviroTrac	1	.5	Model 580B OVM#3 Smart Portable		PID
Assoc. Environmental Services					
Gray Electric, Inc.	2	8			

DESCRIPTION OF SITE ACTIVITIES:**7/15/05**

The well drillers were not on site due to another assignment.

Two electricians and John Norris from Gray Electric, Inc. arrived on site at 8:15. The electricians ran power to the Field Office trailer. The power source they utilized was the circuit box for the existing soil vapor extraction (SVE) system at the site.

John Norris took a look at the blower meter connection for the SVE. John stated the meter was correctly connected to the blower. He also stated the panel box, when opened, was extremely hot. He recommended drilling a couple of vent holes in the bottom of the box and covering the holes with screening.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday July 18, 2005	
Weather Conditions: Temp. 77/86 Overcast		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Drill Rig	1	Diedrich D 120
EnviroTrac	1	8	Model 580B OVM#3 Smart Portable	1	PID
Assoc. Environmental Services	2	7			
National Fence	2	¾			

DESCRIPTION OF SITE ACTIVITIES:**7/18/05**

The Geoprobe rig was scheduled to be on site to install shallow wells. Due to rain over the weekend the auger rig was available and arrived on site at 7:00.

Well IW-B-S was installed to a depth of 35 feet. At 25 feet the brown sand turned to a tan color. The cuttings exhibited no odor and there were no readings on the PID.

Well IW-B-I was installed to a depth of 55 feet. As the auger was being removed a PID reading of 3 ppm was recorded. All other PID readings were ND.

A 9:45 National Fence arrived on site. They installed 29.5 feet of 8-foot high fencing at the east end of the work area behind the building, from the edge of the building the existing perimeter fence. They also installed 47 feet of 8-foot high fencing to fill in the opening in the existing perimeter fence where the railroad spur entered the facility.

Kevin Murphy of EnviroTrac was on site for a short visit. John Norris of Gray Electric was also on site. John asked Kevin what power was needed for the equipment to be installed on site. Kevin told John he would have to get back to him with the answer.

Well IW-4-S was installed to a depth of 35 feet. All PID readings were ND.

Well IW-4-D was installed to a depth of 80 feet. All PID readings were ND.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday July 19, 2005	
Weather Conditions: Temp. 76/90 Sunny/Rain		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Drill Rig	1	Diedrich D 120
EnviroTrac	1	8	Model 580B OVM#3 Smart Portable	1	PID
Assoc. Environmental Services	2	7.5			

DESCRIPTION OF SITE ACTIVITIES:**7/19/05**

Associated Environmental Services on site at 6:00.

Well IW-4-I was installed to a depth of 55 feet. All PID readings were ND.

Well IW-6-D was installed to a depth of 80 feet. PID readings at 10 feet and 20 feet were ND. At approximately 25 feet the PID had a reading of 105 ppm. The well cuttings were placed on poly. The following PID readings were recorded: 35 feet 127 ppm; 60 – 65 feet 136 ppm; 75 feet 71 ppm; and 80 feet 8,000+ ppm. All of this material was placed on poly and covered.

Well IW-6-I was installed to a depth of 55 feet. The following PID readings were recorded: 30 feet 179 ppm; 40 feet 730 ppm; 45 feet 1089 ppm; and 50 feet 1,029 ppm. All of this material was placed on poly and covered.

At 11:30 it began raining.

Well IW-7-S was installed to a depth of 35 feet. The PID was not used due to the rain. All the well cuttings were placed on poly and covered.

The drillers left at 1:00 due to the possibility of thunder storms in the area.

At 1:20 Call-A-Head arrived to install a new toilet in the Field Office trailer and a water tank and holding tank outside the trailer.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Wednesday July 20, 2005
Weather Conditions: Sunny	Temp. 81/91	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Drill Rig	1	Diedrich D 120
EnviroTrac	1	5	Model 580B OVM#3 Smart Portable	1	PID
Assoc. Environmental Services	2	5			

DESCRIPTION OF SITE ACTIVITIES:**7/20/05**

Drillers on site at 6:00.

Well IW-7-I was installed to a depth of 55 feet. A PID reading at approximately 30 to 35 feet was 605 ppm. Additional PID readings will be noted in Rob Szczepanski's (EnviroTrac) drilling logs.

Well IW-A-I was installed to a depth of 55 feet. All PID readings were ND.

Well IW-A-S was installed to a depth of 35 feet. All PID readings were ND.

Well IW-3-S was installed to a depth of 35 feet. All PID readings were ND.

Verizon arrived at 10:25 to install a telephone line to the Field Office trailer.

Rob Szczepanski had to attend an 8 hour OSHA Refresher course at EnviroTrac's office, therefore, he and the drillers left by 11:15.

Verizon was finished installing the phone line by 1:45. The number for the Field Office is (631) 420-3721. EnviroTrac still needs to supply a telephone.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday July 21, 2005	
Weather Conditions: Temp. 72/91 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Drill Rig		Diedrich D 120
EnviroTrac			Model 580B OVM#3 Smart Portable		PID
Assoc. Environmental Services					

DESCRIPTION OF SITE ACTIVITIES:**7/21/05**

The well drillers were not on site due to another assignment. Rob Szczepanski also was not on site.

Wayne Hoagland (OBG) notified me the weekly progress meeting was cancelled.

At 10:30 Jodi Feld with the Office of Attorney General (OAG), John Iannone with Day Engineering (consultant to OAG), Leo Orellana with Finkelstein Realty and his general contractor, Yarek were on site. I gave them a review of the work that has taken place. We also went inside the northwest end of the building to look around.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Friday July 22, 2005
Weather Conditions: Sunny	Temp. 76/91	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	6	Drill Rig	1	Diedrich D 120
EnviroTrac	1	6	Model 580B OVM#3 Smart Portable	1	PID
Assoc. Environmental Services	2	5			

DESCRIPTION OF SITE ACTIVITIES:**7/22/05**

The drillers were on site at 6:00.

Rob Szczepanski hooked up a telephone with speaker and message capabilities (631-420-3721).

Well IW-3-D was installed to a depth of 80 feet. PID readings at 45 feet and 55 feet were ND. Rob stated the remaining PID readings were ND.

Kevin Murphy and John Szymansky with EnviroTrac were on site. Kevin dropped off a lap top computer for Rob with internet capabilities.

Well IW-3-I was installed to a depth of 55 feet. PID readings on the cuttings as the auger sections were being removed were all ND.

Well IW-2-S was installed to a depth of 35 feet. All PID readings were ND.

Kevin asked were to place the Project Sign. Marc Dent is going to ask Jeff DYber. Rob asked what can be done with well development water. Can it be placed on the ground or does it have to be containerized? Marc with ask Jeff this question.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday July 25, 2005	
Weather Conditions: Temp. 76/86 Overcast/Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	3	Drill Rig	1	Diedrich D 120
EnviroTrac	1	8	Model 580B OVM#3 Smart Portable	1	PID
Assoc. Environmental Services	2	7			

DESCRIPTION OF SITE ACTIVITIES:**7/25/05**

The drillers reportedly were on site between 6:30 and 7:00. Rob Szczepanski was on site.

I arrived on site at 10:50. Well IW-2-D to 80 feet and well IW-2-I to 55 feet were already installed. Reportedly all PID readings were ND. The drillers were working on well IW-1-D. This well was completed to a depth of 80 feet. All PID readings were ND.

Well IW-1-I was installed to a depth of 55 feet. The PID was giving false readings and could not be used. We will check the cuttings with a PID later.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Tuesday July 26, 2005
Weather Conditions: Sunny	Temp. 72/93	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Generator	1	
EnviroTrac	1	8	Grundfos BM1/MP1 – 115V	1	Submersible Pump
			Testwell	1	Water Probe

DESCRIPTION OF SITE ACTIVITIES:**7/26/05**

Rob Szczepanski on site at 6:00. Rob begins developing the newly installed injection wells starting with well IW-1-I. The depth to the groundwater from the top of the riser is 18.65 feet and the total depth of the well from the top of the riser is 57.50 feet.

The flow rate of the pump being used to develop the wells is approximately .5 gpm.

Well IW-1-D was developed. Groundwater depth = 20.20 feet and total depth = 83.20 feet.

Well IW-2-I was developed. Groundwater depth = 18.30 feet and total depth = 57.10 feet.

Well IW-2-D was developed. Groundwater depth = 19.28 feet and total depth = 83.60 feet.

Well IW-2-S was developed. Groundwater depth = 17.70 feet and total depth = 36.90 feet.

Well IW-3-I was developed. Groundwater depth = 18.30 feet and total depth = 57.20 feet.

Well IW-3-D was developed. Groundwater depth = 19.30 feet and total depth = 83.01 feet.

The development of well IW-3-S was begun, however, the pump kept turning off. Rob ordered a new pump that will arrive tomorrow.

The quantity of water removed from each well during the development will be recorded in the contractor's log.

The contractor asked yesterday if the well development water could be placed on the ground. Marc Dent informed me that Jeff Dyber stated the water could not be placed on the ground, in any dry well or in a drainage ditch.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday July 27, 2005	
Weather Conditions: Temp. 77/93 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Generator	1	
EnviroTrac	1	8	Grundfos BM1/MP1 – 115V	1	Submersible Pump
EnviroTrac	1	4	Testwell	1	Water Probe

DESCRIPTION OF SITE ACTIVITIES:**7/27/05**

6:30 arrived on site, Rob Szczepanski is waiting for the delivery of a replacement pump for well development.

8:20 Rob arrives on site and begins developing the newly installed injection wells.

Well IW-3-S was developed. Groundwater depth = 18.12 feet and total depth = 36.70 feet.

Well IW-A-I was developed. Groundwater depth = 18.12 feet and total depth = 57.36 feet.

Well IW-A-S was developed. Groundwater depth = 17.65 feet and total depth = 37.80 feet.

9:45 Kevin Murphy arrived on site.

Well IW-4-I was developed. Groundwater depth = 16.89 feet and total depth = 56.92 feet.

Well IW-4-D was developed. Groundwater depth = 18.31 feet and total depth = 83.90 feet.

Well IW-4-S was developed. Groundwater depth = 17.35 feet and total depth = 36.60 feet.

Well IW-B-S was developed. Groundwater depth = 17.60 feet and total depth = 37.28 feet.

Well IW-B-I was developed. Groundwater depth = 18.90 feet and total depth = 57.18 feet.

Well IW-5-S was developed. Groundwater depth = 17.60 feet and total depth = 37.10 feet.

2:00 stopped well development for the day.

Note: The wells have not been surveyed. The well stickups are not at the same height above grade nor at the same elevations. Therefore, the groundwater depth and total depth are for reference only.

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Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday July 28, 2005	
Weather Conditions: Temp. 72/81 Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Generator	1	
EnviroTrac	1	8	Grundfos BM1/MP1 – 115V	1	Submersible Pump
EnviroTrac	1	2	Testwell	1	Water Probe
EnviroTrac	1	2.5			

DESCRIPTION OF SITE ACTIVITIES:**7/28/05**

6:00 Rob Szczepanski on site setting up to develop newly installed injection wells.

Well IW-5-I was developed. Groundwater depth = 16.90 feet and total depth = 56.30 feet.

Well IW-5-D was developed. Groundwater depth = 18.09 feet and total depth = 83.50 feet.

Well IW-8-I was developed. Groundwater depth = 17.15 feet and total depth = 57.20 feet.

9:20 Kevin Murphy on site.

Well IW-8-D was developed. Groundwater depth = 17.92 feet and total depth = 83.42 feet.

Well IW-7-I was developed. Groundwater depth = 17.50 feet and total depth = 56.90 feet.

Well IW-7-S was developed. Groundwater depth = 17.37 feet and total depth = 37.18 feet.

Well IW-6-I was developed. Groundwater depth = 18.10 feet and total depth = 57.40 feet.

10:50 Mike Hart (EnviroTrac) on site to erect the project sign on posts in the ground against the perimeter fence at the front of the property.

Well IW-6-D was developed. Groundwater depth = 19.20 feet and total depth = 83.47 feet.

Keep Out signs and Authorized Personnel Only signs were hung around the project site.

Rob and Mike picked up trash then left the site by 2:00.

Project: NYSDEC – National Heatset Printing	File No. 10653/35518	Date: Friday July 29, 2005
Weather Conditions: Temp. 69/81 Partly Sunny	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	6			
EnviroTrac	1	8			

DESCRIPTION OF SITE ACTIVITIES:**7/29/05**

6:25 Arrived on site.

6:45 Rob Szczepanski arrived on site.

A telephone message from Marc Dent stated Jeff Dyber wants the sixteen injection wells in Table 02590-2 under the Baseline Sampling not scheduled for monitoring to be monitored for Field Parameters only during the baseline sampling.

I called Jeff Dyber and asked if he wanted samples collected from the sixteen injection wells, to be monitored for Field Parameters only, and sent to be analyzed for permanganate. He said no, he only wants field parameters performed that can be checked on site.

Rob began modifying the well stickups by cutting them to a height of two feet above the ground. He asked if I knew of vented well caps as shown on Figure 02520-1B. I said no and told him to drill a hole in the side of the caps near the top for venting.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Monday August 1, 2005
Weather Conditions: Sunny	Temp. 72/88	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	3			
EnviroTrac	1	8			

DESCRIPTION OF SITE ACTIVITIES:

8/1/05

Arrived on site at 11:00. Rob Szczepanski and Kevin Murphy were on site. Rob finished modifying the stick-ups on the new injection wells. He then worked on filling out well logs.

Kevin left the site at 11:50.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday August 2, 2005	
Weather Conditions: Temp. 74/95 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Generator	1	
EnviroTrac	1	8	Grundfos BM1/MP1 – 115V	1	Submersible Pump
Y.E.C., Inc.	3	3.5	Testwell	1	Water Probe
			Horiba U-22	1	Water Quality Monitor

DESCRIPTION OF SITE ACTIVITIES:**8/2/05**

Rob was on site at 6:00. Began purging Well IW-A-S. Well water was pumped very slowly through the Horiba U-22 water quality monitor and into a 55-gallon drum. Readings were taken with the Horiba for turbidity, temperature, specific conductance, pH, ORP/Eh and DO. Once the readings stabilized samples were collected to be analyzed for VOCs.

Samples were collected from the following wells: IW-A-S; MW-A-D; IW-A-I; IW-7-I; MW-7-D; IW-7-S; IW-B-I; MW-B-D; IW-B-S; and IW-6-I.

A field duplicate sample was collected from well IW-7-S. Split samples were collected from well MW-B-D and well IW-6-I.

At 9:45 Don Stedge, Alan Tokarski and Ryan Tokarski from Y.E.C., Inc. arrived on site to survey the newly installed injection wells. The crew was finished and left by 1:30.

Rob was leaving the site at 2:30 when he noticed the contractor for Finkelstein Realty removing the State project sign from the front of the property. The contractor said he was instructed by the Owner's lawyer to take the sign down. Rob and I helped remove the sign and placed the sign in the back of EnviroTrac's truck.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Wednesday August 3, 2005
Weather Conditions: Temp. 75/95 Sunny		Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Generator	1	
EnviroTrac	1	8	Grundfos BM1/MP1 – 115V	1	Submersible Pump
			Testwell	1	Water Probe
			Horiba U-22	1	Water Quality Monitor

DESCRIPTION OF SITE ACTIVITIES:**8/3/05**

Rob was on site at 6:00. Began purging Well IW-6-D.

Samples for VOC analysis were collected from the following wells: IW-6-D; MW-6-S; MW-C; MW-F; MW-H; MW-10; and MW-2A.

The blower for the SVE system was turned off from 8:30 to 9:15 while collecting the sample from MW-F.

Samples for matrix spike and matrix spike duplicate (MS/MSD) were collected from well MW-10. A split sample was also collected from well MW-10 and MW-C.

I called Leo Orellana of Finkelstein Realty (631-293-7393 Ex. 25) to inquire about the placement of the project sign. Leo stated the owner did not want the sign displayed in the front of the facility where prospective tenant would see it. Leo said it is alright to display the sign near where the project is being constructed.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday August 4, 2005	
Weather Conditions: Temp. 78/97 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Generator	1	
EnviroTrac	1	8	Grundfos BM1/MP1 – 115V	1	Submersible Pump
			Testwell	1	Water Probe
			Horiba U-22	1	Water Quality Monitor

DESCRIPTION OF SITE ACTIVITIES:**8/4/05**

Rob was on site at 6:00. Began purging Well MW-3A.

Samples for VOC analysis were collected from the following wells: MW-3A; MW-9; MW-E and MW-G.

A split sample was collected from well MW-E.

An equipment blank sample was collected from the submersible pump.

Kevin Murphy and I conducted a progress meeting by telephone. We discussed the collecting of field parameter readings from the remaining injection wells without purging the wells and without stabilizing the readings. We decided to collect the readings that way as there is plenty of time before injection begins to perform another method of collecting the field parameters if it is so directed. We also discussed scheduling.

Next week work will be performed in preparation of running the system piping. The following week EnviroTrac is planning to demobilize for a week.

I tried to call Jeff Dyber but he is off until next week. I spoke with Guy Boberski (DEC) about our decision to collect the field parameters only without purging the wells. Guy stated the purging of the wells is usually what is accomplished by developing the wells, which has been completed. Guy and I agreed to let the contractor collect the field parameters by grab sample and the subject will be discussed when Jeff returns.

Rob collected field parameter readings from the other sixteen injection wells listed on Table 02590-2.

Dan Simpson from Y.E.C., Inc. was on site to check and collect samples from the SVE system.

The split samples collected were shipped by UPS from EnviroTrac's office to Mitkem Corp. in Warwick, Rhode Island.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Friday August 5, 2005
Weather Conditions: Temp. 78/95 Sunny		Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4.5			
EnviroTrac	1	2			

DESCRIPTION OF SITE ACTIVITIES:**8/5/05**

Arrived on site at 6:30. No activity today. Rob arrived at 8:00. Both of us working on paperwork. Kevin Murphy arrived at 9:45. Discussed next week's activities. Rob is going to be on vacation next week.

Rob and Kevin left the site at 10:15. Rob was going to their office to continue working on logs.

Finished daily reports and left at 11:05.

Project: NYSDEC – National Heatset Printing	File No. 10653/35518	Date: Monday August 8, 2005
Weather Conditions: Temp. 74/81 Overcast	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4	Daewoo 450	1	Skid Steer
EnviroTrac	3	6			

DESCRIPTION OF SITE ACTIVITIES:**8/8/05**

Arrived on site at 11:00. On site for EnviroTrac were Kevin Murphy, Jim Burns and Bob Gimbel. Jim and Bob had removed the project sign posts from the front of the facility. They were now using a skid steer to grub and remove trash from the northwestern edge of the property between the tracks and the western fence.

The SVE system was shut down from 11:25 to 11:33 while a new blower meter was installed. The meter had a starting time of 0.11 hours.

Jim and Bob left the site at 1:00. Kevin left at 1:15. I left at 3:00.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Tuesday August 9, 2005
Weather Conditions: Temp. 77/78 Overcast		Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Daewoo 450	1	Skid Steer
EnviroTrac	3	6			

DESCRIPTION OF SITE ACTIVITIES:**8/9/05**

Arrived on site at 6:30. Kevin Murphy arrived on site at 7:00. Jim Burns and Bob Gimbel arrived on site at 7:20.

At 7:30 the dumpster containing debris and brush was picked up and an empty dumpster placed.

Jim and Bob used a backhoe attachment on the skid steer to excavate a trench from the western edge of the building extending in front of the northwestern overhead door, across the pavement, under the tracks and to the western fence line. The trench is for electrical conduit. They used 2-inch Schedule 40 rigid PVC conduit placed at 24 inches below the surface. Then backfilled the excavation. Where the conduit sticks up above the ground at each end a temporary cap was placed on the conduit.

At 11:20 four plus yards of sand was delivered to the site to be used as berm material for the injection piping. I told Kevin he needs to submit a certificate indicating the material came from a clean source.

Kevin left the site for his office at 11:30. Jim and Bob left the site at 1:30. I left the site at 2:20.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Wednesday August 10, 2005
Weather Conditions: Temp. 74/87 Rain/Sunny		Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Daewoo 450	1	Skid Steer
EnviroTrac	3	8			

DESCRIPTION OF SITE ACTIVITIES:

8/10/05

Arrived on site at 6:30. Kevin Murphy arrived on site at 7:00. Jim Burns and Bob Gimbel arrived on site at 7:20.

Jim and Bob began moving the 55-gallon drums containing well water to the west side of the building.

8:25 Angel Hernandez from Service Tech arrived on site to remove the spent carbon from the SVE system and replace it with new carbon. The SVE blower was turned off at 8:30.

Jim and Bob started constructing a bermed trench along the northern fence line for the containment of the injection header piping. Sand was used to form the berm. Poly sheeting was used to line the berm. Then the piping, 2-inch schedule 40 PVC was placed in the berm with wood block supports every 10 to 15 feet.

10:30 Jim VanHorn (EnviroTrac) and John Norris (Gray Electrical) were on site to discuss the electrical requirements for the injection system. It was explained that they could not take power from the existing SVE system circuit. Therefore, they explored the need to mount a meter on the south side of the building at the facility's existing electrical supply. They also want to install a step-down transformer with protective bollards at that location. John said he would contact LIPA for service.

I called Leo Orellana to let him know about the electrical requirements. He asked to have a letter written explaining the requirements. He will forward the letter to the owner.

2:00 Jim and Bob left the site and Kevin left the site for his office.

3:00 Angel was finished with the carbon exchange. Angel stated the gaskets and bolts on the top hatches of the carbon tanks should be replaced. I signed the manifest and left the site at 3:15.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Thursday August 11, 2005
Weather Conditions: Temp. 75/93 Sunny		Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Daewoo 450	1	Skid Steer
EnviroTrac	3	7			

DESCRIPTION OF SITE ACTIVITIES:

8/11/05

Arrived on site at 6:30. Jim Burns and Bob Gimbel were on site. They were working on the construction of the injection header pipe berm, and installing piping in the berm.

6:45 Maggio's picked up a filled dumpster and left an empty dumpster.

7:00 Kevin Murphy arrived on site.

9:40 John Szymansky (EnviroTrac) arrived on site with a couple of spare 55-gallon drums for the contaminated well cuttings.

1:10 Jim and Bob left the site. 1:45 Kevin left the site for his office.

2:50 Tom from Autumn Transportation called to say he was out front and here to pick up the ten 55-gallon drums of spent carbon. Tom could not get his semi-tractor trailer behind the building. His lift gate was broken. And he had no way of picking up the drums to get them into his truck. He decided to stay overnight.

4:15 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday August 12, 2005	
Weather Conditions: Temp. 78/95 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5.5	Daewoo 450	1	Skid Steer
EnviroTrac	3	5.5			

DESCRIPTION OF SITE ACTIVITIES:**8/12/05**

Arrived on site at 6:25. Jim Burns and Bob Gimbel were on site. They were helping the truck driver from Autumn Transportation with the loading of the ten 55-gallon drums of spent carbon. They used their skid steer to transport the drums to the front of the facility and into the back of his trailer. The driver signed the manifest and left the generator's copy with me.

7:15 Kevin Murphy arrived on site. Jim, Bob and Kevin worked covering the edges of the berm liner with sand to keep it in place. Bob used the skid steer bucket to back-blade the ground west of the tracks.

Jim and Bob installed posts and mounted the project sign inside the fence at the south end of the work area.

10:15 Kevin left the site.

11:30 Jim and Bob left the site.

11:30 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Monday August 22, 2005
Weather Conditions: Sunny	Temp. 78/90	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4			
EnviroTrac	2				

DESCRIPTION OF SITE ACTIVITIES:**8/22/05**

Arrived on site at 11:05. On site were John Szymanski and Rob Szczepanski of EnviroTrac. John told me the well head piping and fixtures were being shipped to EnviroTrac's office and assembled there. Someone should be on site Wednesday or Thursday to begin installing the piping and to pressure test the manifold pipe.

The project sign has been moved approximately 25 feet from behind the fence to a better observed area beyond the gate about half way to the back of the western side of the building.

12:10 John left the site.

1:30 Andy Kahn of YEC called to let me know he's running behind and won't be on site today.

2:00 Called Jeff Dyber (NYSDEC) to let him know what's going on. Jeff was not in today. Left a message.

Rob worked on well logs then left the site at 2:30.

I left the site at 3:10.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday August 23, 2005	
Weather Conditions: Temp. 68/83 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8.5	ppbRAE Plus PGM-7240	1	VOC Monitor
EnviroTrac	1	4			
YEC	1	11			

DESCRIPTION OF SITE ACTIVITIES:**8/23/05**

Arrived on site at 6:45. Andy Kahn of YEC, Inc. arrived on site at 8:00. Rob Szczepanski arrived on site at 8:10.

Andy is on site to work on the sub-slab air sampling. At 9:00 Andy met with Leo Orellana of Finkelstein Realty. They walked around the facility and Andy described what was going to occur in each area of the building.

At 9:20 I called Jeff Dyber to update him on the site activities. Jeff stated he is planning on attending the progress meeting on Thursday of this week.

Rob worked on well logs.

Andy walked the site where sampling is to occur filling out the Indoor Air Quality Questionnaires and checking the areas with a PID.

2:15 Rob left the site and Andy left to rent equipment at Home Depot.

4:40 I left the site.

Andy returned to the site and drilled 3/8 inch holes through the floor slab in Eagle Box and Whitney Printing (VP-15) but could not finish the holes in the northwest portion of the building due to being locked out.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday August 24, 2005	
Weather Conditions: Temp. 67/81 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	10	ppbRAE Plus PGM-7240	1	VOC Monitor
EnviroTrac	1	6			
YEC	1	12			

DESCRIPTION OF SITE ACTIVITIES:**8/24/05**

Arrived on site at 6:40. Andy Kahn of YEC, Inc. arrived on site at 7:25. Andy finished drilling 3/8 inch holes at vapor points VP-7, 8, and 9. He also drilled a new hole next to existing VP-2.

8:20 Rob Szczepanski arrived on site. John Szymanski of EnvironTrac was on site from 9:00 to 9:45 and again in the afternoon. John dropped off an emergency eye washer.

I helped Andy set up air sampling SUMMA canisters at VP-10, VP-14 and VP-2. It was too late to set up a canister at VP-15 as the tenant was going to leave before the sampling would have been complete.

3:50 Rob left the site.

4:20 Andy left to go to Staples to get supplies and to grab something to eat.

5:15 I left the site.

Andy returned to collect the canisters and left by 8:20 he told me.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday August 25, 2005	
Weather Conditions: Temp. 67/80 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	10	ppbRAE Plus PGM-7240	1	VOC Monitor
EnviroTrac	1	6	Skid Steer Mounted 5400	1	Geoprobe
YEC	1	9.5	Track Mounted 6610	1	Geoprobe
EnviroTrac	2	2			
Zebra	2	8			

DESCRIPTION OF SITE ACTIVITIES:

8/25/05

Arrived on site at 6:45. Andy Kahn of YEC, Inc. arrived on site at 7:20. Andy and I set up the last SUMMA canister for air sampling at VP-15.

Chris Berotti and Rick Lyons of Zebra Environmental arrived on site at 8:10. Zebra is on site to collect geoprobe soil core samples and install vapor monitoring points at the nine locations.

8:30 Rob Szczepanski arrived on site.

Andy tells me Michael Hoffman of Eagle Box does not want him and Zebra in their warehouse coring for samples.

Zebra could not remove the last core sample at VP-8 with the skid steer mounted 5400 machine they were using. At 12:00 they left for their shop to exchange that machine for a track mounted 6610 machine.

1:00 Jeff Dyber of the NYSDEC arrived on site. At 1:10 John Szymanski and Dale Konas of EnviroTrac arrived on site. Following a walk around the site a progress meeting was held with Jeff, John, Dale, Rob and myself.

3:00 John and Dale left the site. 3:20 Jeff left the site. And at 4:00 Rob left the site.

4:20 The husband of one of the building owners told me the project sign was illegal and had to come down. He called Leo Orellana and told him it had to come down. I took the sign down.

5:15 Zebra left the site. They had finished with VP-8 and VP-7.

5:30 Andy and I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday August 26, 2005	
Weather Conditions: Temp. 66/82 Sunny/Partly Cloudy		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5	ppbRAE Plus PGM-7240	1	VOC Monitor
EnviroTrac	1	.5	Track Mounted 6610	1	Geoprobe
YEC	1	9			
Zebra	2	8			

DESCRIPTION OF SITE ACTIVITIES:**8/26/05**

Arrived on site at 6:35. Andy Kahn of YEC, Inc. arrived on site at 7:20. Zebra arrived on site at 7:45.

8:05 Rob Szczepanski called me to let me know he is going to EnviroTrac's office to pick up lab analyses.

9:00 I called Leo Orellana. I asked who had requested the project sign be removed. He told me it was the husband of one of the owners. I asked if the trailer at the southwest corner of the building could be removed before EnviroTrac's equipment arrives next week. He said he will tell the tenant to move it. And I asked about the status of access to Eagle Box to perform the coring. He said he is working on that.

11:30 Rob Szczepanski arrived on site. Rob gave me copies of the baseline sample results to give to Marc Dent.

11:45 I left the site.

4:30 I called Andy Kahn. Zebra had finished installing vapor points at VP-9, 15, 10, 11 and 12. Remaining to do at VP-13 and VP-14.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday August 29, 2005	
Weather Conditions: Temp. /86 Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5	Daewoo 450	1	Skid Steer
EnviroTrac	1	6			
EnviroTrac	1	8			
EnviroTrac	2	2			

DESCRIPTION OF SITE ACTIVITIES;**8/29/05**

Arrived on site at 11:00. Rob Szczepanski had left me note that he and Jim Burns were picking up material.

Rob and Jim arrived at 11:15 and unloaded 13 sheets of ½ inch plywood, stacked it then Jim left the site at noon.

I located and measured where the vapor points were constructed in Eagle Box.

At 2:00 Dale Konas and Jim VanHorn from EnviroTrac arrived and began assembling well head piping for the injection wells.

Rob left the site at 3:00.

Dale, Jim and I left the site at 4:00.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday August 30, 2005	
Weather Conditions: Temp. 78/82 Overcast		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Daewoo 450	1	Skid Steer
EnviroTrac	1	7			
EnviroTrac	1	7.5			
EnviroTrac	1	4.5			

DESCRIPTION OF SITE ACTIVITIES:**8/30/05**

Arrived on site at 6:35. Rob Szczepanski on site. Jim Burns off site getting gas for skid steer.

9:10 to 9:50 Kevin Murphy on site.

Jim and Rob measured the distance from the fire hydrant on the cul-de-sac around the east side and north side of the building to where water is needed at the proposed equipment location. It measured roughly 800 feet.

At 9:45 20 yards of sand was delivered from Olson's Creative Landscaping Corp., 1507 Bellmore Ave., Bellmore, NY 11710 (516-409-0940) to be used as berm material around the mix tank and permanganate equipment. Jim and Rob begin constructing the berm for the equipment. A hydraulic hose for the skid steer bucket broke. Jim and Rob dealt with the hose.

11:30 Dale Konas of EnviroTrac arrives and continues to install well head piping: hoses, valves, gages and meters.

12:00 called Leo Orellana about having the empty trailer at the southwest corner of the building moved. He said he would have the tenant move it.

1:00 Jim and Rob went to Home Depot to purchase more plywood for the equipment to sit on. They could not get what they wanted in a timely manner so they decided to wait until tomorrow.

1:30 Jim left the site. 2:00 Rob left the site.

Dale finished as much as he could. He only had 9 totalization meters. The other 19 meters needed are on order and scheduled to arrive on September 14th.

Dale and I both left the site at 4:00.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Wednesday August 31, 2005
Weather Conditions: Temp. 77/84 Overcast		Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Daewoo 450	1	Skid Steer
EnviroTrac	1	6.5			
EnviroTrac	1	7			
EnviroTrac	2	.5			

DESCRIPTION OF SITE ACTIVITIES:

8/31/05

Arrived on site at 6:40. Rob Szczepanski on site. Rob and Jim Burns had picked up plywood at Home Depot. Jim arrived with wood at 7:00. Rob and Jim place the plywood on poly sheeting which will act as the secondary containment for the mix tank.

11:20 Ken Wrenn an electrical inspector with the New York Board Of Fire Underwriters (NYBFireU) Long Island Division was on site to the electrical connection to the SVE system.

12:10 to 1:10 Kevin Murphy was on site.

12:30 to 1:10 Mike Hart and Rob Bauer of EnviroTrac were on site. Mike used a concrete saw to saw-cut the asphalt where the electrical conduit was buried. The asphalt will be repaired later.

1:15 Jim left the site.

1:45 Rob left the site.

Marc Dent told me he spoke with Leo Orellana. With regard to the trailer at the southwest corner of the building Marc said Leo told him he would have the tenant move it today.

3:20 I left the site.

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Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday September 1, 2005	
Weather Conditions: Temp. 69/85 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Daewoo 450	1	Skid Steer
EnviroTrac	1	7.5	Extendable arm forklift Model D4P80	1	TCI Telehandler
EnviroTrac	1	7			
EnviroTrac	1	4			
EnviroTrac	1	2			

DESCRIPTION OF SITE ACTIVITIES:**9/1/05**

Arrived on site at 6:50. Jim Burns arrived on site at 7:00.

7:40 to 8:00 Andy Kahn was on site dropping off sampling supplies to be used tomorrow with the last two vapor point installations.

7:45 Rob Szczepanski arrived on site.

At 9:15 I noticed two employees from Gray Electrical installing a meter panel, conduit and wires at the service location on the south side of the building. At 9:45 John Norris of Gray Electrical stopped on site. This work was needed in order for LIPA to connect service.

9:45 the equipment (pumps and potassium permanganate totes) from Carus arrived on site. Waiting for EnviroTrac's forklift to unload the trailer.

10:30 Dale Konas and Jim VanHorn on site. EnviroTrac borrowed pallet jack from Whitney Printing. Broke the jack and had to replace. Dale picked up replacement at another job site.

12:00 Forklift (Lull) arrived on site. Removed from the trailer 8 potassium permanganate totes with net weight of 3,307.5 lbs., and feed equipment: cycle bin batch system and injection pumps.

EnviroTrac placed the unloaded equipment inside the northwest corner of the building. I informed them they could not use the building as storage without the permission of the owner. I called Leo Orellana and asked about the use of the building for storage for EnviroTrac. He said it would have to be negotiated with the owner. Marc Dent called and said the equipment must be removed from inside the building. The forklift was a rental and had already left the site. The equipment will be removed tomorrow.

2:30 Rob, Jim and Jim left the site.

4:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday September 2, 2005	
Weather Conditions: Temp. 68/82 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4	Daewoo 450	1	Skid Steer
EnviroTrac	2	1	Hyster 50	1	Forklift
O'Brien & Gere Engineers	1	3	Track Mounted 6610	1	Geoprobe
Zebra Environmental	2	3			

DESCRIPTION OF SITE ACTIVITIES:

9/2/05

Arrived on site at 6:45.

7:45 Rob Trent (OBG geologist) arrived on site.

8:00 Rob Szczepanski and Jim VanHorn of EnviroTrac arrived on site.

8:05 Zebra Environmental (Chris Berotti and Rick Lyons) arrived on site. They went with Rob Trent to Eagle Box to finish the last two vapor point installations at VP-13 and VP-14.

Rob and Jim use a rented forklift (Hyster 50, P8217 from Pride Rental) to move the equipment inside the building to outside the building.

Rob and Jim left the site at 9:00.

The forklift was picked up by Pride Rental.

10:30 The installation of the vapor points is finished. Rob left to send samples by FedEx. Zebra is preparing to leave.

10:40 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday September 6, 2005	
Weather Conditions: Sunny		Temp. 70/83		Inspector: Edwin B. Rahn	
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4			
EnviroTrac	3	7.5			
Double Eagle	2	1			

DESCRIPTION OF SITE ACTIVITIES:**9/6/05**

Arrived on site at 11:10. Kevin Murphy and Rob Szczepanski were on site. Off site were Jim Burns and Bob Gimbel picking up flexible hose to be used to transport the water supply.

11:55 Called Leo Orellana to ask if the water line could be run across the roof of the building. Leo sees no reason why it couldn't be. He needs a letter from EnviroTrac describing the water line installation.

FedEx delivered a 3rd injection pump from Carus.

12:00 Kevin left the site.

12:25 Glen from Ambrosio Plumbing arrived on site to check out the work required to connect into the existing water line. He will send EnviroTrac an estimate.

1:15 Jim and Bob return to the site with 3" flexible hose.

1:35 Matt and Chris from Double Eagle arrived to repair the asphalt at the location where the conduit trench had been excavated.

2:00 Jim and Bob left the site. 2:15 Rob left the site.

2:45 Matt and Chris returned to the site. They were unable to pickup asphalt today so they will be back tomorrow morning. They left the site.

3:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday September 7, 2005	
Weather Conditions: Temp. 60/82 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	2	7			
EnviroTrac	1	6			
Double Eagle	2	2.5			

DESCRIPTION OF SITE ACTIVITIES:

9/7/05

Arrived on site at 6:50. On site were Jim Burns and Bob Gimbel. They worked on mounting 3-inch PVC piping to the east and west sides of the building to be used with the water supply.

7:45 Rob Szczepanski arrived on site.

8:25 Matt and Chris from Double Eagle arrive with asphalt to patch the top of the trench where the electrical conduit was buried.

10:25 Kevin Murphy arrived on site.

11:00 Dale Konas arrived on site. Matt and Chris left the site.

Laid four one hundred foot lengths of reinforced flexible 3-inch diameter hose across the roof for use with the water supply.

12:00 Kevin left the site.

1:00 Dale is gone and Jim and Bob left the site.

2:15 Rob left the site.

2:55 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday September 8, 2005	
Weather Conditions: Temp. 63/83 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Extendable arm forklift Model D4P80	1	TCI Telehandler
EnviroTrac	1	7			
EnviroTrac	1	3.5			

DESCRIPTION OF SITE ACTIVITIES:**9/8/05**

Arrived on site at 7:00.

At 8:00 an extendable arm all-terrain forklift was delivered by Island Forklifts. Also Rob Szczepanski arrived on site.

10:05 Jim VanHorn of EnviroTrac arrived on site. Rob and Jim used the forklift to move tenant's dumpsters at the southwest corner of the building in preparation for arrival of the Baker Tank.

11:30 to 11:45 Kevin Murphy was on site. Jim tells us the Baker Tank arrival is changed from 11:00 to 2:00, therefore, he leaves the site.

2:00 Jim VanHorn returns and the Baker Tank arrives on site. The tank is placed in the northwest corner of the property on plywood on top of poly sheeting. Jim and Rob used the forklift to move the potassium permanganate totes and the cycle bin along the fence line.

4:00 Jim and Rob left the site.

5:25 I left the site.

Project: NYSDEC – National Heatset Printing	File No. 10653/35518	Date: Friday September 9, 2005
Weather Conditions: Temp. 67/83 Partly Cloudy	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	3	Extendable arm forklift Model D4P80	1	TCI Telehandler
EnviroTrac	1				
EnviroTrac	1				

DESCRIPTION OF SITE ACTIVITIES:**9/9/05**

Arrived on site at 6:55.

EnviroTrac is not on site today. They have a meeting scheduled on site this afternoon with John Norris of Gray Electrical to go over the electrical requirements of the injection system.

9:00 Kevin Murphy arrived on site with draft survey and draft meeting minutes from 8/25/05 meeting. I returned minutes with a comment. Kevin left at 9:30.

9:55 Rob Szczepanski arrived on site.

10:10 Called Jeff Dyber to update him on the week's progress. He wasn't at his desk. I left a message explaining the week's activities.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday September 19, 2005	
Weather Conditions: Temp. /84 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	1.5	Arm Lift Bucket Truck	1	
EnviroTrac	1	2.5			
Gray Electrical	2	?			

DESCRIPTION OF SITE ACTIVITIES:**9/19/05**

10:00 I called Rob Szczepanski at the job site to let him know I was on my way. He told me a shipment of 3,314 gallons of sodium permanganate had arrived and had been off-loaded into the Baker tank. Rob left the site shortly there after and went to his office.

Arrived on site at 3:15. Two electricians with Gray Electrical were on site. They left before I could talk to them.

Checked messages. Talked with Kevin Murphy. Left the site at 4:45.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday September 20, 2005	
Weather Conditions: Temp. 74/78 Overcast		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Arm Lift Bucket Truck	1	
EnviroTrac	1	6			
Gray Electrical	2	6			
EnviroTrac	2	5			

DESCRIPTION OF SITE ACTIVITIES:**9/20/05**

Arrived on site at 7:25. Rob Szczepanski arrived on site at 7:55.

8:05 a truck from Fenley & Nicol Environmental, Inc. arrived to pick up five 55-gallon drums of contaminated well cuttings. Manifest Document Number NYB7495299 was issued.

8:35 two Gray Electrical employees arrived to continue running conduit on the west side of the building.

9:10 Jim VanHorn of EnviroTrac arrived.

9:30 Dale Konas of EnviroTrac arrived.

9:50 to 10:40 Kevin Murphy was on site.

Dale, Jim and Rob worked on piping water to the Baker Mix Tank. They had trouble with the pipe splitting and the hose leaking around the camlocks. They needed more clamps to repair the hose. They all left the site at 2:30.

The electricians continued working until 3:00 when they left the site.

I left the site at 5:00.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday September 21, 2005	
Weather Conditions: Temp. 67/87 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Arm Lift Bucket Truck	1	
EnviroTrac	1	7			
Gray Electrical	2	5			
EnviroTrac	1	3.5			
Gray Electrical	2	3			

DESCRIPTION OF SITE ACTIVITIES:**9/21/05**

Arrived on site at 7:15. Rob Szczepanski arrived on site at 8:15.

8:15 a Schneider Tanker Truck arrived with a shipment of 3,282 gallons of sodium permanganate which was pumped in the Baker Mix Tank.

9:45 to 11:05 Kevin Murphy was on site.

10:00 two electricians from Gray Electrical arrived on site to continue working on the electrical connections.

12:30 Dale Konas arrived on site to continue working on piping water to the mix equipment. He installed a flow regulator in the manhole where the water source is connected to reduce the pressure in the piping.

12:30 two additional Gray Electrical employees arrived to help pull wires through the conduits.

1:30 Rick Wells a rep. for Carus and Steve Eng and Todd Martinson, engineers with Carus from Peru, IL, arrived on site. They were here for the start-up of the injection system. Since electricity has not been connected they gave us a walk through of the operation of the system.

3:00 Rick, Steve and Todd left the site.

Water added to the Mix Tank totaled 4,225 gallons.

3:45 the electricians left the site.

4:00 Rob, Dale and I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday September 22, 2005	
Weather Conditions: Temp. 63/84 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Arm Lift Bucket Truck	1	
EnviroTrac	1	6.5			
Gray Electrical	2	5.5			
EnviroTrac	1	2.5			

DESCRIPTION OF SITE ACTIVITIES:**9/22/05**

Arrived on site at 7:25. Rob Szczepanski arrived on site at 8:30.

8:40 Steve Eng and Todd Martinson of Carus arrived on site. Still no power so they talked more about dos and don'ts of running the permanganate mixing system.

9:45 Two electricians from Gray Electrical arrived on site.

10:00 Steve and Todd found a slight leak in the Baker Tank on the back side. A small amount (less than a gallon) of sodium permanganate is on the poly sheeting in the containment area.

10:15 Kevin Murphy arrived on site. Kevin and Rob neutralized the permanganate with water, hydrogen peroxide and vinegar.

Steve and Todd described in further detail the operation of the injection system. They and Kevin left the site at 12:05.

1:05 Dale Konas arrived on site. Dale installed 17 more totalizers on the piping to the injection wells. This leaves two more needed at injection wells IW-5-I and IW-5-D.

3:40 Rob and Dale left the site.

3:45 the electricians left the site.

4:45 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday September 23, 2005	
Weather Conditions: Temp. 72/83 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4			
EnviroTrac	1	2			
Gray Electrical	2	?			
EnviroTrac	1	2.5			

DESCRIPTION OF SITE ACTIVITIES:**9/23/05**

Arrived on site at 7:25. Rob Szczepanski called at 8:45 to let me know he was picking up equipment and supplies.

9:25 Kevin Murphy arrived on site.

9:45 called Jeff Dyber (NYSDEC) to update him on the week's activities.

10:00 Rob arrived on site.

11:15 I left site.

Reportedly Kevin and Rob left the site around noon. The electricians were on site sometime after that because temporary power was connected from the SVE power source to the injection system lines.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday September 26, 2005	
Weather Conditions: Temp. 73/74 Overcast		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	2	6.5			
EnviroTrac	2	7			

DESCRIPTION OF SITE ACTIVITIES:**9/26/05**

Arrived on site at 10:50. Kevin Murphy, Rob Szczepanski, Dale Konas and John Szymanski of EnviroTrac were on site.

11:30 Began adding more water to the mix tank. Total amount of water added to mix tank was 6,596 gallons. That equals the total gallons of 40% sodium permanganate in the mix tank therefore making the solution 20%. The mix motors were turned on for an hour.

1:00 Recorded beginning readings on the totalizer meters at each well. Two wells do not have meters.

1:30 Turned on the injection pumps. Repaired leaks at some of the tees on the wells. Ran the system adjusting the amount of flow at each well. The totalizer meter at IW-8-I did not work until it was tapped lightly.

2:00 Someone from the fire department was looking at the water hose connections on the east side of the building. Rob Szczepanski talked to him through the fence. By the time I walked around to meet him he was gone.

3:00 Shut down the injection pumps. Total pumped was 318.62 gallons at approximately 10 gpm. Kevin and John left the site.

3:30 Dale and Rob left the site.

4:55 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday September 27, 2005	
Weather Conditions: Temp. 65/78 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	2	6.5			
EnviroTrac	2	7			

DESCRIPTION OF SITE ACTIVITIES:**9/27/05**

Arrived on site at 7:30. Rob Szczepanski arrived on site at 8:10. Dale Konas arrived on site at 8:15.

Dale worked on repairing leaks. Turned on the mixers at 8:35 for about 45 minutes. Started pumping sodium permanganate at 8:45.

8:50 Kevin Murphy arrived on site.

In order to repair a leak at well IW-6-I the well casing had to be cut, therefore, the survey elevation for that well is invalid.

John Szymanski was on site between 11:30 and 12:00.

1:10 Kevin left the site when Dale returned from lunch.

1:40 to 2:40 Rob checked and recorded field parameter data at monitoring wells C, F, H, 2A, 10, 3A, 9, G and E.

3:30 Shut off the injection system. The total sodium permanganate pumped was 5,090.45 gallons at approximately 12 gpm.

3:50 Rob and Dale left the site.

4:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday September 28, 2005	
Weather Conditions: Sunny/Partly Cloudy		Temp. 54/74		Inspector: Edwin B. Rahn	
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	7.5			
EnviroTrac	1	7			

DESCRIPTION OF SITE ACTIVITIES:**9/28/05**

Arrived on site at 7:30. Rob Szczepanski arrived on site at 8:05.

8:25 Began pumping sodium permanganate to the injection wells.

8:40 Dale Konas arrived on site. Dale left the site at 9:30.

8:45 Jim VanHorn arrived on site.

9:00 to 10:00 Kevin Murphy was on site.

1:30 Rob collected the field parameter readings from the nine monitoring wells down gradient.

2:50 Jim turned the injection system off. The system had pumped 4,451.53 gallons of sodium permanganate at an approximate rate of 11.5 gpm. Final totalizer readings at the wells were recorded.

We noticed that Long Island Power Authority (LIPA) had installed an electric meter on the south side of the building.

3:55 Jim and Rob left the site.

4:55 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday September 29, 2005	
Weather Conditions: Temp. 65/70 Overcast/Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	7.5			
EnviroTrac	1	2			
Gray Electrical	2	1			

DESCRIPTION OF SITE ACTIVITIES:**9/29/05**

Arrived on site at 7:35. A tanker truck was on site with a shipment of 3,282 gallons of sodium permanganate.

8:10 Rob Szczepanski arrived on site. The sodium permanganate was off-loaded into the Baker Tank.

9:00 Rob had water running into the Baker Tank and told me the electricians are connecting the incoming electrical power to the newly installed electric meter. The electricity was turned off for 15 minutes then turned back on.

9:45 Kevin Murphy arrived on site.

10:00 Tanker truck left the site. Stopped adding water to the Baker Tank when the meter read 3,282 gallons. Turned on the four mixers on the Baker Tank. Let the mixers run for twenty minutes then turned on the injection pumps. More than half of the totalizer meters at the wells were not working even though permanganate was flowing into the wells. Kevin and Rob worked on trying to get the totalizers working. They did not have much success. The Omega meters were working. The Kobold meters, purchased when not enough Omega meter could be supplied, were not working. The flow to each well was adjusted visually to be some what equal.

12:10 Kevin left the site. Rob checked the field parameters of the nine down-gradient monitoring wells.

3:30 Rob shut the injection system off. The injection pumps totalizer read 13,458.10 gallons; therefore, a total of 3,597.52 gallons of sodium permanganate was injected today at a rate of approximately 10.9 gpm.

3:55 Rob left the site.

4:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday October 3, 2005	
Weather Conditions: Temp. 72/77 Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4.5			
EnviroTrac	1	7.5			
EnviroTrac	1	6.5			

DESCRIPTION OF SITE ACTIVITIES:**10/3/05**

Arrived on site at 11:20. Jim VanHorn was on site. Rob Szczepanski had gone to lunch. The injection system was running. Jim said he turned it on at 8:00. Pumping at a rate of 10.9 gpm. The beginning injection pump totalizer reading was 13,458.1 gallons.

3:00 Jim stopped injecting to all the wells. The injection pumps totalizer read 17,691.0 gallons. Jim closed all the valves except to wells MW-A, MW-B, IW-6-D and MW-7. These four wells are scheduled to receive more product than the other 24 wells. Continued injecting into these four wells at a rate of 5 gpm.

3:10 Leo Orellana arrived and opened the door to the back of the building. Rob checked the field parameters of the two wells inside that section of the building. He had checked the other seven wells earlier.

3:50 Stopped the injecting. Pump totalizer read 17,937.9 gallons.

4:00 Jim and Rob left the site.

4:35 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday October 4, 2005	
Weather Conditions: Temp. 61/79 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	7.5			
EnviroTrac	1	7			

DESCRIPTION OF SITE ACTIVITIES:**10/4/05**

Arrived on site at 7:20. Jim VanHorn had been on site for 5 minutes. He had the middle two mixing motors running. The other two motors on the ends of the tank are above the solution.

7:45 The injection system was started and run at 5 gpm to the four wells (MW-A, MW-B, IW-6-D and MW-7) that are to receive additional product.

8:00 Rob Szczepanski arrived on site.

9:20 Dale Konas arrived on site with replacement Omega Totalizers to switch for the Kobold Totalizer which are not functioning properly.

10:00 Stopped pumping just to the four wells. Injection pump totalizer read 18,691, therefore, 1,000 gallons of permanganate was dispensed to the four wells. Roughly 250 additional gallons to each one.

2:00 Finished the injection of the sodium permanganate to the wells. Injection pump totalizer read 20,094.8 gallons. This is a difference of 338.8 gallons from the total of 19,756 gallons we estimated was in the Baker Tank.

A water line was connected to the header pipe and the piping was flushed with clean water at 6 gpm in preparation of changing the totalizers. 269.3 gallons of water was flushed through the piping changing the locked totalizer reading from 20,310.2 gallons to 20,579.5 gallons.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday October 5, 2005	
Weather Conditions: Sunny/Foggy		Temp. 62/81		Inspector: Edwin B. Rahn	
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	2	6.5			
EnviroTrac	1	3.5			

DESCRIPTION OF SITE ACTIVITIES:**10/5/05**

Arrived on site at 7:25. Jim VanHorn and Rob Szczepanski arrived on site at same time.

7:50 Mike Rose with EnviroTrac arrived on site.

A tote of potassium permanganate was placed on the cycle bin. The beginning weight on the scale was 4,020 pounds.

9:10 to 10:00 Kevin Murphy was on site.

Jim and Mike mixed the permanganate while Rob changed out the Kobold totalizers with the new Omega totalizers.

11:15 Mike left the site.

11:35 Stopped mixing the potassium permanganate in the cycle bin. The weight read 1,466 pounds. 2,554 pounds of potassium permanganate was used, therefore, at 6 gallons of water per pound of permanganate, 15,324 gallons of water was needed to make a 2% solution.

1:55 the water totalizer had reached 15,324 gallons of water in the mix tank.

2:20 Rob and Jim left the site.

4:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday October 6, 2005	
Weather Conditions: Temp. 67/74 Foggy/Sunny/Overcast		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Extendable arm forklift Model D4P80	1	TCI Telehandler
EnviroTrac	1	8			
EnviroTrac	1	7.5			

DESCRIPTION OF SITE ACTIVITIES:**10/6/05**

Arrived on site at 7:25.

7:40 Jim VanHorn arrived on site. Started the mix motors on the Baker Tank.

7:53 Jim started the injection system running at a rate of approximately 10.9 gpm.

8:15 Rob Szczepanski arrived on site.

8:40 Jim left the site for another job site. Returned at 10:35.

2:55 Begin batching potassium permanganate and sending it to the mix tank. The mix tank has approximately 11,000 gallons of solution. Batched only 300 pounds of potassium permanganate so the percentage in the tank does not get out of balance. Continued to add water to the mix tank.

3:30 Decide to turn off the injection system and finish batching the remaining potassium permanganate from the first tote. The injection pump totalizer read 4,792.07 gallons and the locked totalizer read 25,259.9 gallons.

4:00 Finished emptying the tote. The final weight of the tote was 707 pounds. Therefore, subtracting from the beginning weight of 4,020 pounds the net weight of the potassium permanganate was 3,313 pounds.

4:25 Finished adding 4,554.04 gallons of water to the mix tank. The water totalizer locked total is 29,960.2 gallons.

Jim and Rob placed a new tote on the cycle bin stand, then left the site at 4:50.

5:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday October 7, 2005	
Weather Conditions: Temp. 71/73 Partly Cloudy		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	2.5			
EnviroTrac	1	8			
EnviroTrac	1	7			

DESCRIPTION OF SITE ACTIVITIES:**10/7/05**

Arrived on site at 7:25. Jim VanHorn had been on site for 5 minutes and had the mix motors turned on.

7:50 Turned off mix motors and turned on injection system. Pumping at approximately 10.7 gpm.

8:35 Rob Szczepanski arrived on site.

9:55 I left the site.

Jim and Rob ran the injection system into the afternoon. The ending injection pump totalizer reading was 10,652.0 gallons and the locked totalizer reading was 31,017.7 gallons.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday October 11, 2005	
Weather Conditions: Temp. 58/61 Rain/Overcast		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	8			

DESCRIPTION OF SITE ACTIVITIES:**10/11/05**

Arrived on site at 7:45. Jim VanHorn was on site at 7:30 and turned on the mix motors on the Baker Tank at that time.

8:05 Jim turned on the injection system. He failed to open the header pipe valve. The pressure forced a small quantity of permanganate solution out of the totalizer housing. This was cleaned up and a new totalizer reading of 10,799.5 was recorded.

3:20 The injection system was turned off. The injection pump totalizer read 15,371.5 gallons. The total quantity of solution injected today was 4,572.0 gallons.

3:40 Jim left the site.

5:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday October 12, 2005	
Weather Conditions: Temp. 54/55 Rain.		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	8			
EnviroTrac	1	5			

DESCRIPTION OF SITE ACTIVITIES:**10/12/05**

Arrived on site at 7:40. Rob Szczepanski arrived on site at 7:45 and turned on the mix motors on the Baker Tank.

8:00 Jim VanHorn arrived on site.

8:10 Began the process of mixing the potassium permanganate slurry. The beginning weight on the scale was 4,043 pounds. Turned on the water supply. The hose ruptured around the back of the building. Repaired the hose and ran water at a rate of 44 gpm.

9:00 to 9:40 Kevin Murphy was on site.

10:20 Quit mixing slurry. Scale reading was 2,407 pounds. Therefore, 1,636 pounds used times 6 gallons of water per pound of potassium permanganate equals 9,816 gallons of water needed to make the solution 2%.

12:10 Finished adding water to the Baker Tank. Water added equaled 9,816.4 gallons. Water meter locked total equals 39,674.4 gallons.

12:15 Began injection pumps. Pumping at approximately 11 gpm.

1:45 Jim left the site.

4:15 Rob turned off the injection system. Raining too hard to read the well totalizers. Will get them in the morning. Injection pump total equaled 17,976.1 gallons. 2,604.6 gallons injected today. Locked pump total equaled 38,333.5 gallons.

4:25 Rob left the site.

5:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Thursday October 13, 2005
Weather Conditions: Temp. 58/59 Rain.	Inspector: Edwin B. Rahn		

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	6			

DESCRIPTION OF SITE ACTIVITIES:**10/13/05**

Arrived on site at 7:35. Read well totalizers in between showers.

8:23 Turned on mix motors on the Baker Tank.

8:46 Turned on the injection system. Pumping at approximately 10.8 gpm.

8:53 Turned off the mix motors.

9:25 to 10:05 Kevin Murphy was on site.

9:35 Jim VanHorn arrived on site.

11:00 Jim checked outside wells (10, 2A, 3A, 9 and H) for field parameters. Could not get into Eagle Box. They were closed for the holiday (Yom Kippur). And Leo Orellana did not show up to let us into the back of the building.

3:20 Jim turned off the injection system. The pump totalizer read 22,250.1 gallons. 4,274 gallons injected for the day. The locked total equaled 42,654 gallons.

3:50 Jim left the site.

5:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday October 14, 2005	
Weather Conditions: Temp. 64/65 Rain.		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5.5			
EnviroTrac	1	8			

DESCRIPTION OF SITE ACTIVITIES:**10/14/05**

Arrived on site at 7:30. Jim VanHorn arrived right behind me and turned on the mixer motors in the Baker Tank.

8:00 Jim turned on the injection system. The system was pumping at 11 gpm.

11:00 Jim and I checked the inside monitoring wells (MWs C, F, E and G) for field parameters. Permanganate was observed in a sample collected from the bottom of MW-C. Permanganate was not observed in the other three wells.

12:40 Called Jeff Dyber (NYSDEC) to update. Jeff was not there. Left a message.

1:00 I left the site.

Jim stayed until approximately 5:00. The injection pump total was 27,701.7 gallons. 5,451.6 gallons were injected for the day. The locked total read 48,071.7 gallons.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday October 17, 2005	
Weather Conditions: Temp. 55/63 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4			
EnviroTrac	1	7			

DESCRIPTION OF SITE ACTIVITIES:**10/17/05**

Arrived on site at 12:30. Jim VanHorn was on site. Jim said he started the injection system at 8:00 after 15 minutes of mixing the solution in the Baker Tank.

12:50 Jim shut down the injection system when it became apparent the Bank Tank was empty.

Jim repaired the water supply line and turned on the water to mix potassium permanganate slurry. The water line ruptured again. Jim ordered repair parts.

2:45 Jim left the site.

The injection pump totalizer read 30,499.6 gallons. 2,797.9 gallons were injected today. The locked total read 50,920.9 gallons.

5:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday October 18, 2005	
Weather Conditions: Temp. 54/69 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	6.5			

DESCRIPTION OF SITE ACTIVITIES;**10/18/05**

Arrived on site at 8:25. Jim VanHorn was on site repairing the water supply line.

8:50 The forklift rental company exchanged the on site forklift for a smaller, easier to handle, model.

9:00 Jim has water flowing to the Baker Tank. After discharging 650 gallons of water into the Baker Tank Jim and I switched the water to the cycle bin and began making potassium permanganate slurry. The flow rate was 46 gpm.

9:15 to 10:15 Kevin Murphy was on site.

11:15 Finished with the second potassium permanganate tote. The ending weight was 713 pounds. The net weight for the second tote was 3,330 pounds. Jim, at Kevin's urging, calculated, by weight, a new water per pound of permanganate ratio. The result was 5.87 gallons of water per pound of KMNO₄ equals a 2% KMNO₄ solution. Therefore, with a beginning weight today of 2,407 pounds, 9,943.78 gallons of water was required.

11:50 Jim and I set the third KMNO₄ tote on the cycle bin. The beginning weight was 4041 pounds. Began making more slurry.

12:50 Stopped making slurry. Ending weight equaled 3,204 pounds. Therefore, 837 pounds was mixed requiring an additional 4,913.19 gallons of water.

1:50 Finished adding water to the Baker Tank at 14,857 gallons. The water totalizer locked total equals 54,349.7 gallons.

2:00 Left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday October 19, 2005	
Weather Conditions: Temp. 52/68 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	7			
EnviroTrac	1	8			
EnviroTrac	1	4.5			

DESCRIPTION OF SITE ACTIVITIES:**10/19/05**

Arrived on site at 7:50. Rob Szczepanski was on site. Rob said he turned on the mix motors at 7:00 and turned on the injection system at 7:30. Flow rate is approximately 11 gpm.

10:10 I left the site for an hour to go to another job site.

11:30 Jim VanHorn arrived on site.

3:30 Rob left the site.

3:40 Jim turned off the injection system. The pump total read 35,346.1 gallons. Therefore, 4,846.5 gallons were injected today. The locked total read 55,773.8 gallons.

3:50 Jim left the site.

4:55 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday October 20, 2005	
Weather Conditions: Temp. 51/62 Mostly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	6			
EnviroTrac	1	6			

DESCRIPTION OF SITE ACTIVITIES:**10/20/05**

Arrived on site at 7:50. Jim VanHorn was on site and had the mix motors running.

8:05 Jim turned on the injection system. Pumping at approximately 10.8 gpm.

8:10 Rob Szczepanski arrived on site.

8:50 Turned off mixer motors.

11:00 to 11:50 Rob and I checked field parameters in the nine monitoring wells. Permanganate was observed at the surface in MW-C. Permanganate was not seen in the other wells.

12:00 Rob left for his office. Returned at 1:30.

2:05 Jim left the site.

3:25 Rob turned off the injection system. The injection pump total was 39,961.1 gallons. Therefore, 4,615 gallons was injected today. The locked total was 60,388.8 gallons.

3:40 Rob left the site.

5:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday October 21, 2005	
Weather Conditions: Temp. 55/58 Overcast		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5.5			
EnviroTrac	1	7.5			
EnviroTrac	1	6.5			

DESCRIPTION OF SITE ACTIVITIES:**10/21/05**

Arrived on site at 7:30. Turned on the mix motors on the Baker Tank.

8:05 Rob Szczepanski arrived on site. He turned on the injection system. Pumping at approximately 10.6 gpm.

9:00 Jim VanHorn arrived on site. Kevin Murphy arrived on site. Kevin left at 9:30.

10:50 Called Jeff Dyber (NYSDEC) to update. Jeff was not in today. Left message.

1:10 Left the site.

Reportedly Rob and Jim remained on site until approximately 4:00.

The injected pump totalizer reading for the day was 44,949.0 gallons. Therefore, the daily total injected was 4,987.9 gallons. The pump locked total was 65,376.7 gallons.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday October 24, 2005	
Weather Conditions: Overcast		Temp. 49/54		Inspector: Edwin B. Rahn	
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4.5			
EnviroTrac	1	7.5			
EnviroTrac	1	6			

DESCRIPTION OF SITE ACTIVITIES:

10/24/05

Arrived on site at 11:22. Jim VanHorn and Rob Szczepanski were on site. They had just finished emptying potassium permanganate tote number 3. The ending weight on the scale read 742 pounds. The ending weight from 10/18 was 3204 pounds., therefore 2,462 pounds of KMNO4 times 5.87 gallons of water per pound equals 14,451.94 gallons of water needed for a 2% solution.

12:45 Read the injection pump and well totalizers with Rob.

1:10 Finished adding water to the Baker Tank. Water added equaled 14,451.9 gallons. The water locked total equals 68,640.3 gallons.

1:15 Turned the injection system on. The flow is approximately 11 gpm.

1:25 Jim left the site.

3:15 Rob turned off the injection system. The injection pump reading was 46,486.8 gallons. Therefore, the daily injection was 1,537.8 gallons. The locked total reading was 66,896.3 gallons.

3:30 Rob left the site.

4:30 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday October 25, 2005	
Weather Conditions: Temp. 45/50 Rain/Windy		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	9.5			
EnviroTrac	1	7.5			
EnviroTrac	1	6			

DESCRIPTION OF SITE ACTIVITIES:**10/25/05**

Arrived on site at 8:10. Jim was on site. He said he was on site a little after 6:00 and started the injection system approximately at 6:25. The system was running at 11.5 gpm.

10:35 Rob Szczepanski arrived on site.

12:10 Jim left the site for the day.

5:45 Rob turned off the injection system and he and I read the meters. The injection pump total read 54,186.0 gallons. Therefore, the daily total injected was equal to 7,699.2 gallons. The locked total read 74,522.1 gallons.

6:00 Rob left the site.

6:10 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday October 26, 2005	
Weather Conditions: Temp. 42/54 Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8	Extendable arm forklift	1	DM-54
EnviroTrac	1	9			
EnviroTrac	1	5.5			

DESCRIPTION OF SITE ACTIVITIES:

10/26/05

Arrived on site at 8:00. Jim was on site. He said he started the injection system approximately at 6:15. The system was running at 11.5 gpm.

10:30 Kevin Murphy was on site. He left the site at 11:10.

10:45 Jim turned off the injection system and turned on the water to the Baker Tank. The Injection Pump Total was 57,369.9 gallons.

The fourth of eight KMNO4 totes was placed on the cycle bin. The scale weight reading was 4043 pounds.

11:00 Rob Szczepanski arrived on site.

1:45 Fire Marshall, Joseph Arcuri, from the Town of Babylon arrived on site. He had been notified about the water hose coming out of the manhole out front and wanted to know what was going on. Jim informed him about the operation. He asked for a copy of the KMNO4 MSDS and Jim gave him one. He asked to have additional caution placed around the manhole when water is being used.

2:40 Finished making KMNO4 slurry. Ending scale weight was 1862 pounds. Therefore, 2,181 pounds used times 5.87 equals 12,802.47 gallons of water needed.

3:05 Finished adding water to the Baker Tank. The pump total added was 12,802.7 gallons. The locked meter total was 81,205.6 gallons.

The injection system was turned on and was running at approximately 11.3 gpm.

3:10 Jim left the site.

3:37 Rob turned off the mix motors in the Baker Tank.

5:00 Rob turned off the injection system. The pump total equaled 58,647.1 gallons. Therefore, the daily total injected equaled 4,461.1 gallons. The locked total was 78,908.6 gallons.

5:10 Rob left the site. 5:15 I left the site.

Project: NYSDEC – National Heatset Printing	File No. 10653/35518	Date: Thursday October 27, 2005
Weather Conditions: Temp. 40/54 Partly Sunny	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	9			
EnviroTrac	1	10			

DESCRIPTION OF SITE ACTIVITIES:**10/27/05**

Arrived on site at 8:00. Rob Szczepanski was on site. Rob said he started the injection system approximately 6:00. The system was running at 10.5 gpm.

9:35 Kevin Murphy was on site until 10:45.

Rob calibrated the Horiba before he and I checked the nine monitoring wells for Field Parameters. MW-C continues to have permanganate at the surface of the water. MW-E had permanganate at the bottom of the well. We also checked the bottom of wells MW-G and MW-9 with no signs of permanganate present.

5:32 Rob turned off the injection system. The injection pump total was 66,000.5 gallons. Therefore, the daily total injected was 7,353.4 gallons. The locked total read 78,908.6 gallons.

5:45 Rob left the site.

5:55 I left the site.

Project: NYSDEC – National Heatset Printing	File No. 10653/35518	Date: Friday October 28, 2005
Weather Conditions: Temp. 44/52 Partly Sunny	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5			
EnviroTrac	1	7.5			

DESCRIPTION OF SITE ACTIVITIES:**10/28/05**

Arrived on site at 7:45. Rob Szczepanski was on site. Rob started the injection system approximately 7:00. The system was running at 11.2 gpm.

11:20 Called Jeff Dyber (NYSDEC) to update him with the weekly progress. He was not at his desk. I left a message.

1:00 I left the site.

Rob reportedly shut the system down around 4:00. The injection pump total read 72,000.0 gallons. Therefore, the daily total pumped was 5,999.5 gallons. The locked total read 92,147.9 gallons.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday October 31, 2005	
Weather Conditions: Temp. 50/67 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	2.5			
EnviroTrac	2	7.5			
EnviroTrac (Manager)	1	5			

DESCRIPTION OF SITE ACTIVITIES:**10/31/05**

I called Rob Szczepanski to let him know there was a delay at the George Washington Bridge. Rob told me there was a potassium permanganate release at the site and that injection would probably not occur today.

Arrived on site at 12:00. On site were Rob, Kevin Murphy and Steve Sussman, all from EnviroTrac. They were in the process of cleaning up a potassium permanganate (KMNO₄) release which was in both the Cycle Bin Feed System containment and the containment berm. The KMNO₄ was being watered down and neutralized with hydrogen peroxide and vinegar.

Apparently when Rob and Steve were starting the feed system the booster pump was not turned on at the moment the water valves were opened. This caused the water to rise in the eduction hopper come in contact with KMNO₄ in the screw conveyor assembly and discharge through the overflow port.

What was not realized by the workers on site was when the water rose in the eduction hopper it tripped a level float switch which would not allow the booster pump to run. When they tried to start the system again additional product was discharged through the overflow. Nothing was accomplished for the day.

2:00 Kevin left the site. Rob and Steve remained continuing to clean the area.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday November 1, 2005	
Weather Conditions: Temp. 54/64 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	7			
EnviroTrac	1	6			
EnviroTrac (Manager)	1	3			

DESCRIPTION OF SITE ACTIVITIES:

11/1/05

Arrived on site at 7:35.

8:05 Rob Szczepanski arrived on site.

8:53 Kevin Murphy arrived on site. Rob and Kevin continued to clean up the area effected by the permanganate release.

9:18 Jim VanHorn arrived on site.

9:50 The making of potassium permanganate (KMNO4) slurry began.

11:40 Finished with the 4th KMNO4 tote. The ending weight was 740 pounds. The beginning weight today was 1,820 pounds making the total used 1,080 pounds. Multiplied by 5.87 gals./lb. equals 6,339.6 gallons of water needed to make a 2% solution.

11:45 The 5th KMNO4 tote was placed on the Cycle Bin Feed System. The beginning weight was 4,014 pounds.

12:15 Kevin left the site.

1:15 Finished making KMNO4 slurry. The ending weight was 2,616 pounds making the total used from the 5th tote 1,398 pounds. Multiplied by 5.87 gals./lb. equals 8,206.26 gallons of water needed to make a 2% solution.

2:05 Finished adding water to the Baker Tank. The total added was 14,545.8 gallons of water. The locked total on the meter read 95,480.7 gallons. Began the injection system.

3:12 Rob shut off the injection system. The injection pump total was 72,607.4 gallons. The daily total of injection was 607.4 gallons. The locked total read 92,755.3 gallons.

3:18 Rob and Jim left the site. 4:25 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday November 2, 2005	
Weather Conditions: Temp. 52/59 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	9			
EnviroTrac	1	6			
EnviroTrac	1	5.5			

DESCRIPTION OF SITE ACTIVITIES:**11/2/05**

Arrived on site at 7:35. Jim VanHorn was on site cleaning the strainer for injection pump 1. Jim stated he started the injection system approximately at 7:15.

9:50 to 10:35 Kevin Murphy was on site.

10:25 Rob Szczepanski arrived on site.

1:00 Jim left the site.

5:35 Rob turned off the injection system. The injection pump total read 79,738.1 gallons. Therefore, the daily total was 7,130.7 gallons. The locked total read 99,886.0 gallons.

5:45 Rob and I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday November 3, 2005	
Weather Conditions: Temp. 47/64 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8.5			
EnviroTrac	1	9.5			
EnviroTrac	1	6			

DESCRIPTION OF SITE ACTIVITIES:**11/3/05**

Arrived on site at 7:35. Jim VanHorn was on site. Jim stated he started the injection system approximately at 7:15.

10:00 Rob Szczepanski arrived on site.

10:50 Rob and I checked field parameters at the monitoring wells. MW-C continues to have MNO4 in it. No MNO4 was observed in monitoring wells F and 9. MNO4 was observed in the bottoms of wells E and G. The MNO4 observed in MW-G was darker than that observed in MW-E. The other four wells (H, 10, 2A and 3A) were routinely checked for field parameters.

11:20 to 11:50 Kevin Murphy was on site.

11:38 Jim turned off the injection system and began making potassium permanganate (KMNO4) slurry. The starting weight was 2,616 pounds. Jim and Rob had a difficult time getting the KMNO4 to drop out of the tote. A small amount of KMNO4 was spilled in the containment. This was cleaned up and neutralized.

4:20 The 5th tote was emptied and the slurry making stopped. The ending weight was 741 pounds. Therefore, 11,006.25 gallons of water was required to make a 2% solution. The 6th tote was placed on the cycle bin feed system.

I read the well totalizers. The injection pumps total was 82,889.0 gallons. Therefore, the daily total was 3,150.9 gallons. The locked total was 103,036 gallons.

5:00 Rob turned off the water supply and left the site.

The water meter reading was 11,006.4 gallons and the locked total was 106,358 gallons.

5:10 Jim left the site. 5:25 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday November 4, 2005	
Weather Conditions: Temp. 53/65 Sunny/Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5			
EnviroTrac	1	8.5			

DESCRIPTION OF SITE ACTIVITIES:**11/4/05**

Arrived on site at 7:40. Rob Szczepanski was on site. Rob had turned the injection system on at approximately 6:55 running at 10.25 gpm.

10:15 I called Jeff Dyber (NYSDEC) and updated him on the progress.

12:45 I left the site.

Rob stayed until approximately 4:00. The Injection Pump Total was 88,711.8 gallons. Therefore, the daily total was 5,822.8 gallons. The locked total was 108,859 gallons.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Monday November 7, 2005
Weather Conditions: Temp. 52/62 Sunny		Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4.5			
EnviroTrac	1	8.5			

DESCRIPTION OF SITE ACTIVITIES:

11/7/05

Arrived on site at 11:18. Rob Szczepanski was on site. Rob stated he had started the injection system at approximately 7:00. The system was running at 11.3 gpm.

4:00 Rob turned off the injection system. The injection pump total was 94,901.0 gallons. Therefore, the daily total was 6,189.2 gallons. The locked total was 115,048 gallons.

4:15 Rob left the site.

4:30 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday November 8, 2005	
Weather Conditions: Temp. 49/64 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	8			
EnviroTrac	1	5.5			

DESCRIPTION OF SITE ACTIVITIES:**11/8/05**

Arrived on site at 7:45. Jim VanHorn was on site. Jim stated he was on site at 6:00 and started the injection system after running the mixing motors in the Baker Tank.

9:50 to 10:55 Kevin Murphy was on site.

9:55 Jim shut off the injection system. The injection pump total was 97,242.6 gallons.

The sixth tote on the cycle bin feed system had a beginning weight of 4,039 pounds.

10:00 Rob Szczepanski arrived on site. Jim and Rob began the cycle bin feed system to make slurry.

12:45 Finished making slurry. Ending weight was 1,463 pounds. Therefore, $4,039 - 1,463 = 2,576$ lbs. $\times 5.87 = 15,121.12$ gallons of water required to make the 2% KMNO₄ solution.

2:05 Jim left the site.

2:45 Finished adding water to the Baker Tank. Water meter total added was 15,121.3 gallons. The locked total was 121,255 gallons.

2:50 Rob turned on the injection system running at 11.5 gpm.

4:30 Rob turned off the injection system. The injection pump total was 98,319.3 gallons. The daily total was 3,418.3 gallons. The locked total was 118,467 gallons.

4:40 Rob left the site.

4:55 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday November 9, 2005	
Weather Conditions: Temp. 49/60 Overcast/Rain		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	9			
EnviroTrac	1	7			
EnviroTrac	1	5			

DESCRIPTION OF SITE ACTIVITIES:**11/9/05**

Arrived on site at 7:30. Jim VanHorn was on site. Jim stated he was on site at 5:30 and started the injection system after running the mix motors in the Baker Tank.

12:40 Rob Szczepanski arrived on site. Jim left the site.

1:15 to 1:55 Rob and I checked the nine monitoring wells for field parameters. Monitoring well MW-C continued to have purple permanganate in the full water column. MW-F, MW-H and MW-9 were checked to the bottom of the wells for the presence of permanganate. None was observed. Permanganate was observed at the top of the water columns in MW-E and MW-G. The other wells (MWs 2A, 3A and 10) were only checked for field parameters.

5:30 Rob turned off the injection system. The injection pump total was 106,406 gallons. The daily total was 8,086.7 gallons. The locked total was 126,554 gallons.

5:42 Rob and I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday November 10, 2005	
Weather Conditions: Temp. 48/55 Overcast/Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	7			
EnviroTrac	1	5			
EnviroTrac	1	7.5			

DESCRIPTION OF SITE ACTIVITIES:**11/10/05**

Arrived on site at 7:30. 7:40 Turned on the mix motors in the Baker Tank.

8:00 Turned on the injection system. 8:10 Turned off the mix motors.

8:15 Jim VanHorn arrived on site.

9:20 Jim turned off the injection system and began making KMNO₄ slurry.

10:00 Rob Szczepanski arrived on site. Marc Dent and Joe Button (OBG) and Dan Simpson and Fernando Perez (YEC) arrived on site. I showed them around the site before we left the site to visit two other job sites.

Jim VanHorn asked Marc Dent what should be done with any extra potassium permanganate once the 25,000 pounds which were bid on were reached. At this time it looks like 1,000 plus pounds may remain in the final tote once the 25,000 pounds is reached. Marc told Jim he would check the specs and talk with Jeff Dyber about it. Jim wanted to know what could be done with water used to clean the Baker Tank. Marc said he would get back to him about that. Jim asked if all the electrical equipment (wiring, conduits) is to come down at the end of the job. Marc said he would get back to him on that. Jim asked if the stick ups on the wells remain at the end of the job. Marc said he would get back to him on that.

10:40 Finished with the 6th tote. Ending weight was 730 pounds. Therefore, $1,463 - 730 = 733 \text{ lbs.} \times 5.87 = 4,302.71$ gallons of water required.

10:50 Placed the 7th tote (#258) on the cycle bin. The beginning weight was 4,049 pounds.

12:30 Stopped making slurry. The ending weight was 3,065 pounds. Therefore, $4,049 - 3,065 = 984 \text{ lbs.} \times 5.87 = 5,776.08$ gallons of water required.

1:00 Finished adding water to the Baker Tank. The water meter total was 10,079.0 gallons. The locked total was 131,161 gallons. Jim left the site.

2:00 Marc and I returned to the site.

5:35 Rob turned off the injection system. The injection pump total was 110,625 gallons. The daily total was 4,219 gallons. The locked total was 130,773 gallons.

5:45 Rob, Marc and I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday November 11, 2005	
Weather Conditions: Temp. 44/55 Overcast/Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5.5			
EnviroTrac	1	7			
EnviroTrac	1	6.5			

DESCRIPTION OF SITE ACTIVITIES:**11/11/05**

Arrived on site at 7:35. Jim VanHorn was on site. Jim stated he was on site at 5:30 and started the injection system shortly after turning on the mix motors in the Baker Tank. The system was running at 11.7 gpm.

9:50 Dan Simpson of YEC arrived on site to service the SVE system.

9:55 Rob Szczepanski arrived on site.

10:05 Fernando Perez of YEC arrived to work with Dan.

11:15 Called Jeff Dyber to update him with the week's progress. Left Jeff a message.

11:30 Dan and Fernando were finished and left the site.

12:45 Jim left the site.

1:00 I left the site.

Rob shut down the injection system sometime after 4:00. The injection pump total was 118,000 gallons. The daily total was 7,375 gallons. And the locked total was 138,284 gallons.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday November 14, 2005	
Weather Conditions: Temp. 50/68 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5			
EnviroTrac	1	8.5			
EnviroTrac	1	7.5			

DESCRIPTION OF SITE ACTIVITIES:**11/14/05**

Arrived on site at 11:50. Jim VanHorn and Rob Szczepanski were on site. Jim stated he had been on site since around 6:00 and had started the injection system after letting the mixers run in the Baker Tank.

They had shut off the injection system with a pump total of 121,163 gallons. They were in the process of making slurry from the 7th tote of potassium permanganate.

2:00 Finished with the making of slurry from the 7th tote. The beginning weight of the tote today was 3,065 pounds and the ending weight of the tote was 736 pounds. Therefore, $3,065 - 736 = 2,329 \times 5.87 = 13,671.23$ gallons of water was needed to make the 2% solution of KMNO₄.

2:25 Jim left the site.

3:20 Finished adding water to the Baker Tank. Water meter reading was 13,671.2 gallons. The locked reading was 144,700 gallons.

3:25 Rob started the injection system.

5:35 Rob turned off the injection system. The injection pump total was 122,613 gallons. The daily total was 4,613 gallons. And the locked total was 142,941 gallons.

5:43 Rob and I left the site.

Project: NYSDEC – National Heatset Printing	File No. 10653/35518	Date: Tuesday November 15, 2005
Weather Conditions: Temp. 54/60 Overcast/Light Rain	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	9.5			
EnviroTrac	2	6			

DESCRIPTION OF SITE ACTIVITIES:

11/15/05

Arrived on site at 7:40. Jim VanHorn was on site. Jim said he arrived around 6:00 and turned the injection system on.

9:55 Rob Szczepanski arrived on site.

10:15 to 11:35 Kevin Murphy was on site.

11:45 Jim left the site.

3:30 to 4:00 Jeff Dyber and Joe Jones from the NYSDEC were on site. I explained the operation to them and gave them a tour. The following questions were directed to Jeff:

- (1) There is going to be extra potassium permanganate. Can it be added (injected) to the wells? YES!
- (2) Can water generated during cleaning of the Baker Tank be injected into the wells? YES, as long as it is done slowly.
- (3) What equipment or material, with regard to the wells does the State want left on site? The job isn't over until it's over. Leave as much as possible. Cut and cap the header pipe inside the fence. Leave the wells as is. Remove the hose and gages and ask the owner if they can be stored in the back room.
- (4) What does the State want done with the electrical hook up? Leave as much as is practical.
- (5) Jeff mentioned he wants the fence left in place to secure the area.

5:35 Rob turned off the injection system. The injection pump total was 130,837 gallons. The daily total was 8,224 gallons. And the locked total was 151,204 gallons.

5:45 Rob and I left the site.

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Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Wednesday November 16, 2005	
Weather Conditions: Temp. 63/67 Overcast/Partly Sunny/Windy		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	9.5			
EnviroTrac	1	8			
EnviroTrac	1	7.5			

DESCRIPTION OF SITE ACTIVITIES:**11/16/05**

Arrived on site at 7:40. Jim VanHorn was on site. Jim said he arrived around 5:45 and turned the injection system on after running the mixers in the Baker Tank.

9:55 Rob Szczepanski arrived on site.

10:35 Jim turned off the injection system. Injection pump reading was 134,144 gallons. Jim and Rob turned on the water supply and began mixing slurry. The 8th tote (081) weight was 4010 pounds.

Jim and Rob pumped sampling purge water from 10 55-gallon drums into the Baker Tank. The calculated amount from the drums was 430 gallons.

12:40 Finished making slurry. Ending tote weight was 1,562 pounds. Therefore, $4,010 - 1,562 = 2,448 \times 5.87 = 14,369.76$ – the 430 gallons from the drums = 13,939.76 gallons of water needed.

1:30 to 2:15 Rob and I checked the monitoring wells for field parameters. Wells C, E and G continue to have permanganate present in them. The other wells were checked for field parameters.

1:45 Jim left the site.

3:00 Finished adding water to the Baker Tank. The water added was 13,939.7 gallons. The locked total was 158,485 gallons.

3:05 Started the injection system running at 11.75 gpm.

5:30 Rob shut off the injection system. The injection pump total was 135,819 gallons. The daily total was 4,982 gallons. And the locked total was 156,188 gallons.

5:40 Rob and I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday November 17, 2005	
Weather Conditions: Temp. 41/45 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	3			
EnviroTrac	1	5			

DESCRIPTION OF SITE ACTIVITIES:

11/17/05

Arrived on site at 7:45. Jim VanHorn was on site. Jim said he arrived around 6:50 and turned the injection system on after running the mixers in the Baker Tank.

10:00 Jim left the site for his office.

10:18 Rob Szczepanski arrived on site.

3:35 I left the site.

Approximately 5:00 Rob shut the injection system off and left the site.

The injection pump total was 142,621 gallons. The daily total was 6,802 gallons. And the locked total was 162,990 gallons.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday November 18, 2005	
Weather Conditions: Temp. 38/45 Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4			
EnviroTrac	1	6			
EnviroTrac	1	6.5			

DESCRIPTION OF SITE ACTIVITIES:**11/18/05**

Arrived on site at 8:15. Jim VanHorn was on site. Jim said he arrived around 7:00 and turned the injection system on after running the mixers in the Baker Tank. Jim said there was ice in the injection pump strainers.

9:20 Jim turned off the injection system. The pump total was 143,989 gallons. Began making potassium permanganate slurry.

10:20 Rob Szczepanski arrived on site.

10:35 Finished with the 8th tote. The ending weight was 701 pounds. Therefore, $1,562 - 701 = 861 \times 5.87 = 5,054.07$ gallons of water needed.

Note: The total weight of the KMNO₄ from the 8 totes was 26,448 pounds.

10:50 to 11:10 Dale Konas (EnviroTrac) was on site.

11:13 Finished adding water to the Baker Tank. Water meter reading was 5,087.49 gallons. The locked total was 163,508 gallons.

Jim and Rob cleaned the cycle bin feed system.

11:30 I called Jeff Dyber (NYSDEC) to update him on the weekly progress.

11:45 Turned the injection system on.

12:20 I left the site. Jim was showing Rob how to winterize the injection pumps with antifreeze, then he left.

Rob ran the system through the afternoon. The injection pump total was 145,500 gallons. The daily total was 2,879 gallons. And the locked total was 165,869 gallons.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Monday November 21, 2005	
Weather Conditions: Temp. 30/53 Overcast		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5			
EnviroTrac	1	7			
EnviroTrac	1	6			

DESCRIPTION OF SITE ACTIVITIES:**11/21/05**

Arrived on site at 11:35. Jim VanHorn and Rob Szczepanski were on site. Jim said when he arrived at around 6:00 the pumps were froze. Once he got the pumps working he then noticed leaks from the piping in the well field. Jim and Rob were in the process of getting everything thawed out and running.

Due to the weather conditions the injection pumps totalizer/flow meter erroneously recorded 272 gallons of solution, which was not injected. The new total reading was 145,772 gallons. And the locked total was 166,141 gallons.

The totalizers at wells MW-6 and IW-6-D were not working due to the cold condition. The totalizers from wells IW-1-I and IW-1-D which were both reading 5,710 were used in place of the totalizers not working.

As many of the wells were reaching their target quantity for injection they were being shut off.

1:05 Jim left the site.

4:55 Rob shut off the system. The injection pump total reading was 151,310 gallons. The daily total was 5,538 gallons. And the locked total was 171,679 gallons.

5:00 Rob and I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Tuesday November 22, 2005	
Weather Conditions: Temp. 42/47 Overcast/Rain		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	9			
EnviroTrac	1	5			
EnviroTrac	1	6.5			

DESCRIPTION OF SITE ACTIVITIES:**11/22/05**

Arrived on site at 7:45.

9:07 Jim VanHorn arrived on site. The injection pump totalizer/flow meter was not working. Jim tried to fix it but it was damaged when the solution froze in it. Started the injection system using the individual well totalizers to calculate the amount of solution being injected.

9:55 Rob Szczepanski arrived on site.

10:10 to 10:55 Kevin Murphy was on site.

Jim and Rob were cleaning meters as injection to wells was being completed and the flow to them turned off.

2:00 Jim left the site.

4:30 Rob and I checked the field parameters in the monitoring wells on site. Permanganate was still observed in wells MW-C, MW-E and MW-G. The bottoms of wells MW-9 and MW-H were checked for the presents of permanganate. None was observed.

5:10 Rob turned off the injection system. I read the totalizers while Rob winterized the pumps. The daily total injected was calculated to be 2,654.2 gallons.

5:15 Rob left the site.

5:30 I left the site.

Project: NYSDEC – National Heatset Printing	File No. 10653/35518	Date: Wednesday November 23, 2005
Weather Conditions: Temp. 28/33 Sunny	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	4			
EnviroTrac	1	7.5			
EnviroTrac	1	6			

DESCRIPTION OF SITE ACTIVITIES:**11/23/05**

Arrived on site at 7:50.

8:00 Rob Szczepanski arrived on site.

9:30 Jim VanHorn arrived on site.

Jim and Rob turned on the water supply, removed ice from the hose and put approximately 300 gallons of water in the Baker Tank. The walls of the tank were not stained and did not require cleaning. The mix motors were turned on and the residue in the bottom of the tank was mixed into solution. The solution was then injected (not metered) into the first well cluster, at a slow rate of injection (~ 5 gpm).

11:30 I called Jeff Dyber and update him on the progress.

12:00 I left the site.

Jim and Rob reportedly worked until 4:00.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Monday November 28, 2005
Weather Conditions: Partly Sunny	Temp. 50/65	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	2			
EnviroTrac	1	7			
EnviroTrac	1	7.5			

DESCRIPTION OF SITE ACTIVITIES:**11/28/05**

Arrived on site at 3:05. Jim VanHorn and Rob Szczepanski were on site.

Jim and Rob had been adding water to the Baker Tank, running the mix motors to dilute the permanganate remaining in the tank and pumping the solution via one injection pump to the wells. The wells receiving the solution by straight tubing with no valves or meters are the following: IW-1-I; IW-2-D; IW-3-S; MW-A; MW-7; IW-6-I; IW-4-S; MW-B; IW-5-D and IW-8-D.

The flow rate was running at approximately 4 to 5 gpm.

3:30 Jim left the site.

3:45 Rob left the site.

4:00 I left the site.

Project: NYSDEC – National Heatset Printing	File No. 10653/35518	Date: Tuesday November 29, 2005
Weather Conditions: Temp. 60/64 Overcast	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5.5			
EnviroTrac	1	6.5			
EnviroTrac	1	4.5			

DESCRIPTION OF SITE ACTIVITIES:**11/29/05**

Arrived on site at 7:55. Jim VanHorn was on site. Jim said he was on site at 6:10. He was pumping diluted solution from the Baker Tank to the wells.

10:50 Rob Szczepanski arrived on site.

Jim and Rob began cleaning up the area and continued pumping to the wells.

12:45 Jim left the site.

1:35 I left the site.

4:00 Rob shut off the injection pump and left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518	Date: Wednesday November 30, 2005
Weather Conditions: Overcast	Temp. 57/62	Inspector: Edwin B. Rahn	

Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	7			
EnviroTrac	1	8			
EnviroTrac	1	1			

DESCRIPTION OF SITE ACTIVITIES:**11/30/05**

Arrived on site at 7:50. Jim VanHorn was on site. Jim said he was on site at 5:30. Double D Express was also on site at that time. Double D was there to pick up the Carus cycle bin feed system, the three injection pumps and the eight KMNO4 totes.

Jim finished pumping water from the Baker Tank to the wells. The water meter total used in the Baker Tank to dilute the permanganate was 5,000 gallons. The locked total was 168,461 gallons.

8:20 Rob Szczepanski arrived on site.

9:10 Double D Express was loaded and leaving site. Rob left site to guide the truck to another job site.

11:30 to 12:00 Kevin Murphy was on site.

Jim flushed the header pipe and hose to the wells with fresh water. He used an additional 475 gallons of water. The meter reading was 5,475.39 gallons with a locked total of 168,933 gallons. No additional water went to the injection wells.

Jim added 1,400 gallons of water to the Baker Tank, ran the mix motors and let the water run into the containment area. In the containment area the permanganate in the water was neutralized with hydrogen peroxide and vinegar.

1:20 Jim left the site.

3:00 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Thursday December 1, 2005	
Weather Conditions: Temp. 40/47 Sunny/Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	8			
EnviroTrac	1	6			
EnviroTrac	1	1			

DESCRIPTION OF SITE ACTIVITIES:**12/1/05**

Arrived on site at 7:30.

8:15 Jim VanHorn arrived on site. Jim continued to clean the Baker Tank. He also began to demobilize the containment berm and cut up some of the piping.

1:20 to 2:20 Rob Szczepanski was on the site.

2:30 Jim left the site.

2:35 I checked monitoring wells MW-C, MW-F, MW-E and MW-G for the presents of permanganate. The presents of permanganate remained in wells MW-C, MW-E and MW-G. None was observed in MW-F.

4:50 I left the site.

Project: NYSDEC – National Heatset Printing		File No. 10653/35518		Date: Friday December 2, 2005	
Weather Conditions: Temp. 40/47 Overcast/Partly Sunny		Inspector: Edwin B. Rahn			
Occupation	Total		Make & Model No.	No.	Type
	Staff	Hours			
O'Brien & Gere Engineers	1	5			
EnviroTrac	1	6			
EnviroTrac	1	7			

DESCRIPTION OF SITE ACTIVITIES:**12/2/05**

Arrived on site at 7:30. Rob Szczepanski was on site along with the driver on site to pick up the Baker Tank.

8:20 The Baker Tank was removed from the site.

8:45 Jim VanHorn arrived on site.

The final water meter locked reading was 171,101 gallons.

Jim and Rob continued to clean up the containment berm area. They also began picking up the lengths of water hose from around the building.

We placed the well totalizer meters, valves and half-inch diameter PVC piping in the old remediation room at the back of the building.

10:50 Leo Orellana stopped on site to pick up the key to the back door. I gave him the water meter total I had read.

11:00 I called Jeff Dyber (NYSDEC) and left a message of the weekly progress.

1:00 I left the site.

**Injection Well Backfill Material -
Product Data Sheets**





PRODUCT DATA

FilPro® WELL GRAVELS

PLANT: MAURICETOWN, NEW JERSEY

FilPro Well Gravel sands are produced from round and subround monocrystalline industrial quartz. Chemically inert and free of organic contaminants, they will not alter the chemistry of water-producing wells, nor distort the analytical results of effluents drawn from monitoring wells. These durable and dense sands are sized to uniformity coefficients that range from 1.35 to 2.5.

In water-producing wells, FilPro Well Gravels will increase the yield from the aquifer by increasing the permeable zone around the well screen. FilPro's ability to effectively bridge and filter finer or highly laminated formations at the interface offer drillers the option to use larger slot sizes for improved hydraulic transmission and faster development. With its superior permeability, FilPro Well Gravels will maximize hydraulic conductivity with little or no head loss through the filter pack. Excellent structural support and placement properties also make them an effective gravel pack in environmental monitoring wells and a productive leachate in sanitary landfill or leak detection systems.

All FilPro well gravel grades are processed and sized with strict adherence to statistical and quality assurance controls, and meets AWWA B-100, ANSI, and NSF-61 standards for consistently uniform and chemically inert filter media.

TYPICAL PARTICLE SIZE ANALYSIS AND PROPERTIES (THESE DO NOT REPRESENT A SPECIFICATION)

Mesh*	#4	#3	#2	#1	#0	#00N	#00	#000
ASTM E-11								
4	2.7	-	-	-	-	-	-	-
6	60.7	2.8	-	-	-	-	-	-
8	29.7	47.1	3.2	-	-	-	-	-
10	3.7	30.1	17.7	0.2	-	-	-	-
12	1.8	13.2	29.8	4.3	-	-	-	-
14	0.9	4.9	33.6	29.7	0.1	-	-	-
16	-	0.9	10.3	32.1	1.9	-	-	-
18	-	0.4	3.8	25.7	16.0	-	-	-
20	-	-	0.6	5.2	22.8	0.1	-	-
25	-	-	0.3	1.5	32.7	6.4	0.1	-
30	-	-	-	0.5	19.4	37.2	1.9	0.7
35	-	-	-	0.3	5.7	42.8	31.5	-
40	-	-	-	-	0.9	10.1	36.0	23.0
50	-	-	-	-	-	2.9	26.7	34.1
70	-	-	-	-	-	-	3.0	21.0
100	-	-	-	-	-	-	-	14.1
140	-	-	-	-	-	-	-	5.2
200	-	-	-	-	-	-	-	1.6
270	-	-	-	-	-	-	-	0.2
PAN	0.5	0.6	0.7	0.5	0.5	0.5	0.8	0.1

*Typical Mean % Retained on Individual Sieves

	#4	#3	#2	#1	#0	#00N	#00	#000
Recommended Screen Slot Size (in.)	0.090	0.060	0.050	0.030	0.025	0.020	0.010	0.005
Effective Size (mm)	2.47	1.76	1.29	1.02	0.61	0.48	0.33	0.16
Uniformity Coefficient	<1.8	<1.7	<1.6	<1.6	<1.6	<1.5	<1.6	<2.5
Bulk Density, Aerated (lb./ft. ³)	92-95	ASTM C-29		Specific Gravity		2.65	ASTM C-128	
Bulk Density, Compacted (lb./ft. ³)	98-100	ASTM C-29		Grain Shape		Subround	Visual	
Hardness	7.0	Mohs Scale		Acid Solubility		<0.5%	API RP56	

July 17, 2000

DISCLAIMER: The information set forth in this Product Data Sheet represents typical properties of the product described; the information and the typical values are not specifications. U. S. Silica Company makes no representation or warranty concerning the Products, expressed or implied, by this Product Data Sheet.

WARNING: The product contains crystalline silica - quartz, which can cause silicosis (an occupational lung disease) and lung cancer. For detailed information on the potential health effect of crystalline silica - quartz, see the U. S. Silica Company Material Safety Data Sheet.

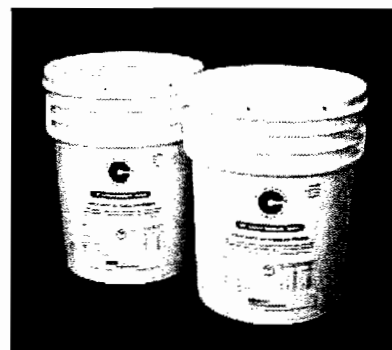




TECHNICAL DATA

CETCO® Coated Tablets

High Quality Time Released
Bentonite Tablets for Sealing
and Plugging



Description:

CETCO® Coated Tablets are coated using an aqueous carrier to apply the coating. The coating allows the tablets to reach a discrete depth within the waterwell, piezometer, monitoring well, or annular space. These untreated organic tablets are compressed into 1/4" and 3/8" sizes. Coated Tablets are certified to NSF/ANSI Standard 60, Drinking Water Treatment Chemicals - Health Effects.

Recommended Use:

Coated Tablets are designed to fall through standing water columns of up to 150 vertical feet without bridging. Coated Tablets form a chemically resilient, low-permeable flexible seal.

- Provide a protective barrier between gravel pack and high solids grout
- Isolate screen intervals, subsurface instrumentation, and sampling zones
- Seal or grout plastic or steel casing
- Plug abandoned boreholes and cavities
- Build a stable, permanent below-grade seal in:
 - piezometer/water sampling wells
 - monitor/observation wells
 - waterwells
 - mineral exploration holes
 - soil/geotechnical sampling holes
 - caisson holes

Mixing and Applications:

Refer to web matrix chart in "My Calculations" for tablet quantities.

Packaging:

50 lb plastic pails, 36 pails per pallet. All pallets are plastic-wrapped.





TECHNICAL DATA



Volclay[®] Coarse Chips PureGold[®] Medium Chips

Hole Abandonment Material



Description: Volclay[®] Coarse Chips are natural sodium bentonite screened to 3/8" to 3/4" in size. PureGold[®] Medium Chips are natural sodium bentonite screened to 1/4" to 3/8" in size. Volclay[®] Coarse Chips and PureGold[®] Medium Chips are certified to NSF/ANSI Standard 60, Drinking Water Treatment Chemicals - Health Effects.

Recommended Use: Sealing shallow boreholes and seismic shot holes; decommissioning wells; providing an interface between gravel pack and bentonite or cement grout.

Characteristics:

- Chemically stable. Results from TCLP Priority Pollutants analysis are below RCRA limits for hazardous constituents.
- Provide a high-solids clay seal.
- Prevent infiltration of surface contamination.
- Provide a permanent, flexible seal.

Mixing and Applications: Bagged material should be screened of fines before placement. Pour chips slowly down hole to prevent bridging or binding. In unsaturated condition water should be added at 2-ft. intervals to ensure adequate hydration.

Application Matrix

Hole Diameter (In.)	2	4	6	8	10	12	14
Approximate Pounds of Chips per Linear Foot	1.5	6	14	24	37.5	54	73

Bulk Density : Coarse Chips = 67.30 lbs./ft.³ Medium Chips = 69.25 lbs./ft.³

Packaging: 50 lb. multiwall, water-resistant bags, 48 bags per pallet. All pallets are plastic-wrapped.



Injection Well Boring Logs



Log of Injection Well: MW-A (S/I)

1 Adams Boulevard
Farmingdale, New York

Client: O'Brien and Gere		Job No.: 1-52-140		Depth to Water (ft. from measuring pt.)		Site Elevation Datum
Site Name: National Heatset Printing		Address: 1 Adams Boulevard		Date	DTW	Ground Elevation
Drilling Company: Associated Environmental		Method: Hollow Stem Auger		NM	NM	NM
Date Started: 7/20/05		Date Completed: 7/20/2005				Measuring Point Elevation
Completion Depth: 55'/35'		ENVIOTRAC Geologist: Rob Szczepanski				NM

MONITORING WELL CONSTRUCTION (NTS)	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION
		Reco- very (ft.)	Blow per 6 in.	QVM (ppm)	
	0	NM	NA	0	0-5'
	5	NM	NA	0	Hand cleared, grass, med to coarse sands
	10	NM	NA	0	5-10'
	15	NM	NA	0	It brown med to coarse sand traces of gravel and cobbles
	20	NM	NA	0	10-12'
	25	NM	NA	0	Same as above
	30	NM	NA	0	15-17'
	35	NM	NA	0	Same as above
	40	NM	NA	0	20-22'
	45	NM	NA	0	Same as above
	50	NM	NA	0	25-27'
	55	NM	NA	0	dark brown, coarse sands mixed with cobbles, no odor
	60	NM	NA	NM	30-32'
					Same as above
				35-37'	
				Same as above	
				40-42'	
				Same as above	
				45-47'	
				Same as above	
				50-52'	
				Same as above	
				55-57'	
				Same as above	
				60-62'	

LEGEND:

- Bentonite
- Gravel pack (morie #2)
- Common fill
- Screen
- End/Top cap

Well Construction Details (Intermediate)

Bottom of Well: 55'

Screen Zone: 55'-45'

Screen material: 2" 0.020 Slot Schedule 40 PVC

Casing material: 2" Schedule 40 PVC

Sand Pack: morie #2

Well Construction Details (Shallow)

Bottom of Well: 35'

Screen Zone: 35'-25'

Screen material: 2" 0.020 Slot Schedule 40 PVC

Casing material: 2" Schedule 40 PVC

Sand Pack: morie #2

DTW - Depth to Water

Log of Injection Well: MW-B (S/I)

1 Adams Boulevard
Farmingdale, New York

Client: O'Brien and Gere		Job No.: 1-52-140		Depth to Water (ft. from measuring pt.)		Site Elevation Datum
Site Name: National Heatset Printing		Address: 1 Adams Boulevard		Date	DTW	Ground Elevation
Drilling Company: Associated Environmental		Method: Hollow Stem Auger		NM	NM	NM
Date Started: 7/18/2005		Date Completed: 7/18/2005				Measuring Point Elevation
Completion Depth: 55'/35'		ENVIROTRAC Geologist: Rob Szczepanski				NM

MONITORING WELL CONSTRUCTION (NTS)	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION
		Reco- very (ft.)	Blow per 6 in.	OVM (ppm)	
MW-B (VS)	0	NM	NA	0	0-5' Hand cleared, grass, med to coarse sands
	5	NM	NA	0	5-10' It brown fine to med sand
	10	NM	NA	0	10-12' Same as above
	15	NM	NA	0	15-17' Same as above
	20	NM	NA	0	20-22' Same as above
	25	NM	NA	0	25-27' It brown to tan med to coarse, traces of gravel and cobbles, no odor
	30	NM	NA	0	30-32' Same as above
	35	NM	NA	0	35-37' Same as above
	40	NM	NA	0	40-42' Same as above
	45	NM	NA	0	45-47' Same as above
	50	NM	NA	0	50-52' Same as above
	55	NM	NA	0	55-57' Same as above
	Well Construction Details (Intermediate) Bottom of Well: 55' Screen Zone: 55'-45' Screen material: 2" .020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PCV Sand Pack: morie #2				
Well Construction Details (Shallow) Bottom of Well: 35' Screen Zone: 35'-25' Screen material: 2" .020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PCV Sand Pack: morie #2					

LEGEND:

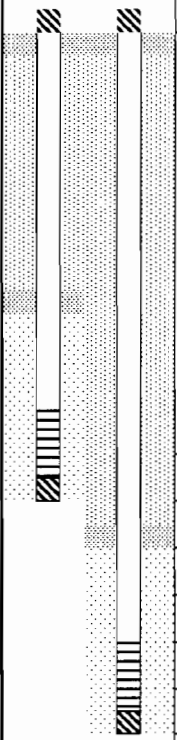
- Bentonite
- Gravel pack (morie #2)
- Common fill
- Screen
- End/Top cap

DTW - Depth to Water

Log of Injection Well: 1 D/I

1 Adams Boulevard
Farmingdale, New York

Client: O'Brien and Gere		Job No.: 1-52-140		Depth to Water (ft. from measuring pt.)		Site Elevation Datum	
Site Name: National Heatset Printing		Address: 1 Adams Blvd., Farmingdale, New York		Date		DTW	
Drilling Company: Associated Environmental		Method: Hollow Stem Auger		NM		NM	
Date Started: 7/25/2005		Date Completed: 7/25/2005				Ground Elevation NM	
Completion Depth: 80'/55'		ENVIROTRAC Geologist: Rob Szczepanski				Measuring Point Elevation NM	

MONITORING WELL CONSTRUCTION (NTS)	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION Note: PID Malfunction(no PID readings recorded)
		Reco- very (ft.)	Blow per 6 in.	OVM (ppm)	
	0	NM	NA	NM	0-5'
	5	NM	NA	NM	5-10'
	10	NM	NA	NM	10-12'
	15	NM	NA	NM	15-17'
	20	NM	NA	NM	20-22'
	25	NM	NA	NM	25-27'
	30	NM	NA	NM	30-32'
	35	NM	NA	NM	35-37'
	40	NM	NA	NM	40-42'
	45	NM	NA	NM	45-47'
	50	NM	NA	NM	50-52'
	55	NM	NA	NM	55-57'
	60	NM	NA	NM	60-62'
	65	NM	NA	NM	65-67'
	70	NM	NA	NM	70-72'
	75	NM	NA	NM	75-77'
80	NM	NA	NM	80-82'	
Well Construction Details (Deep) Bottom of Well: 80' Screen Zone: 80'-70' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2					
Well Construction Details (Intermediate) Bottom of Well: 55' Screen Zone: 55'-45' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2					

LEGEND:

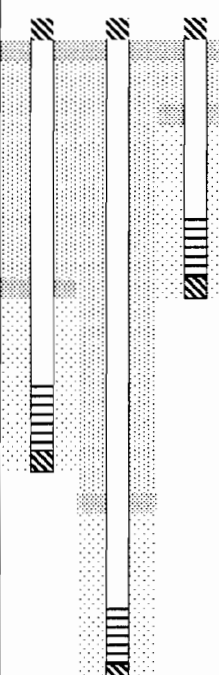
-  Bentonite
-  Gravel pack (morie #2)
-  Common fill
-  Screen
-  End/Top cap

NTS - Not to scale

DTW - Depth to Water

Log of Injection Well: IW-2 S/D/I

1 Adams Boulevard
Farmingdale, New York

Client: O'Brien and Gere		Job No.: 1-52-140		Depth to Water (ft. from measuring pt.)		Site Elevation Datum
Site Name: National Heatset Printing		Address: 1 Adams Blvd.		Date	DTW	Ground Elevation
Drilling Company: Associated Environmental		Method: Hollow Stem Auger		NM	NM	NM
Date Started: 7/22/05		Date Completed: 7/25/2005				Measuring Point Elevation
Completion Depth: 80'/55'/35'		ENVIROTRAC Geologist: Rob Szczepanski				NM
MONITORING WELL CONSTRUCTION (NTS)		DEPTH (ft below grade)			SOIL DESCRIPTION	
		SAMPLES				
		Reco- very (ft.)	Blow per 6 in.	OVM (ppm)		
IW-2 I/D/S		0	NM	NA	0	0-5'
		5	NM	NA	0	5-10' Hand cleared, grass, med to coarse sands
		10	NM	NA	0	10-12' It brown med to coarse, traces of gravel and cobbles
		15	NM	NA	0	15-17' Same as above
		20	NM	NA	0	20-22' Same as above
		25	NM	NA	0	25-27' brown coarse sands, no odor
		30	NM	NA	0	30-32' Same as above
		35	NM	NA	0	35-37' brown coarse sands, no odor
		40	NM	NA	0	40-42' Same as above
		45	NM	NA	0	45-47' Same as above
		50	NM	NA	0	50-52' Same as above
		55	NM	NA	0	55-57' med to coarse brown sand, no odor
		60	NM	NA	0	60-62' Same as above
		65	NM	NA	0	65-67' Same as above
		70	NM	NA	0	70-72' Same as above
		75	NM	NA	0	75-77' Same as above
		80	NM	NA	0	80-82' Same as above
LEGEND:						
 Bentonite						
 Gravel pack (morie #2)						
 Common fill						
 Screen						
 End/Top cap						
Well Construction Details (Deep)						
Bottom of Well: 80'						
Screen Zone: 80'-70'						
Screen material: 2" 0.020 Slot Schedule 40 PVC						
Casing material: 2" Schedule 40 PVC						
Sand Pack: morie #2						
Well Construction Details (Intermediate)						
Bottom of Well: 55'						
Screen Zone: 55'-45'						
Screen material: 2" 0.020 Slot Schedule 40 PVC						
Casing material: 2" Schedule 40 PVC						
Sand Pack: morie #2						
Well Construction Details (Intermediate)						
Bottom of Well: 35'						
Screen Zone: 35'-25'						
Screen material: 2" 0.020 Slot Schedule 40 PVC						
Casing material: 2" Schedule 40 PVC						
Sand Pack: morie #2						
NTS - Not to scale						

NTS - Not to scale

DTW - Depth to Water

Log of Injection Well: IW-3 S/D/I
 1 Adams Boulevard
 Farmingdale, New York

Client: O'Brien and Gere		Job No.: 1-52-140		Depth to Water (ft. from measuring pt.)		Site Elevation Datum
Site Name: National Heatset Printing		Address: 1 Adams Blvd.		Date	DTW	Ground Elevation
Drilling Company: Associated Environmental		Method: Hollow Stem Auger		NM	NM	NM
Date Started: 7/20/05		Date Completed: 7/22/2005				Measuring Point Elevation
Completion Depth: 80'55"/35'		ENVIROTRAC Geologist: Rob Szczepanski				NM

MONITORING WELL CONSTRUCTION (NTS)	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION
		Reco- very (ft.)	Blow per 6 in.	OVM (ppm)	
	0	NM	NA	0	0-5' Hand cleared, grass, med to coarse sands
	5	NM	NA	0	5-10' lt brown med to coarse, traces of gravel and cobbles
	10	NM	NA	0	10-12' Same as above
	15	NM	NA	0	15-17' Same as above
	20	NM	NA	0	20-22' Same as above
	25	NM	NA	0	25-27' Same as above
	30	NM	NA	0	30-32' brown coarse sands, no odor
	35	NM	NA	0	35-37' Same as above
	40	NM	NA	0	40-42' Same as above
	45	NM	NA	0	45-47' Same as above
	50	NM	NA	0	50-52' med to coarse brown sand, no odor
	55	NM	NA	0	55-57' Same as above
	60	NM	NA	0	60-62' Same as above
	65	NM	NA	0	65-67' Same as above
	70	NM	NA	0	70-72' Same as above
	75	NM	NA	0	75-77' Same as above
80	NM	NA	0	80-82'	
Well Construction Details (Deep) Bottom of Well: 80' Screen Zone: 80'-70' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2					
Well Construction Details (Intermediate) Bottom of Well: 55' Screen Zone: 55'-45' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2					
Well Construction Details (Intermediate) Bottom of Well: 35' Screen Zone: 35'-25' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2					

LEGEND:

- Bentonite
- Gravel pack (morie #2)
- Common fill
- Screen
- End/Top cap

NTS - Not to scale

DTW - Depth to Water

Log of Injection Well: IW-4 S/D/1
1 Adams Boulevard
Farmingdale, New York

Client: O'Brien and Gere		Job No.: 1-52-140		Depth to Water (ft. from measuring pt.)		Site Elevation Datum	
Site Name: National Heaset Printing		Address: 1 Adams Boulevard, Farmingdale, New York		Date		Ground Elevation	
Drilling Company: Associated Environmental		Method: Hollow Stem Auger		DTW		NM	
Date Started: 7/18/2005		Date Completed: 7/19/2005		NM		Measuring Point Elevation	
Completion Depth: 80/55/35'		ENVIROTRAC Geologist: Rob Szczepanski				NM	

MONITORING WELL CONSTRUCTION (NTS)	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION
		Reco- very (ft.)	Blow per 6 in.	OVM (ppm)	
	0	NM	NA	0	0-5'
	5	NM	NA	0	Hand cleared, grass, med to coarse sands 5-10'
	10	NM	NA	0	It brown med to coarse, traces of gravel and cobbles 10-12'
	15	NM	NA	0	Same as above 15-17'
	20	NM	NA	0	Same as above 20-22'
	25	NM	NA	0	Same as above 25-27'
	30	NM	NA	0	Same as above 30-32'
	35	NM	NA	0	brown coarse sands, trace of silts, no odor 35-37'
	40	NM	NA	0	Same as above 40-42'
	45	NM	NA	0	Same as above It brown med to coarse sand, no odor
	50	NM	NA	0	Same as above 50-52'
	55	NM	NA	0	Same as above 55-57'
	60	NM	NA	0	Same as above 60-62'
	65	NM	NA	0	Same as above 65-67'
	70	NM	NA	0	Same as above 70-72'
	75	NM	NA	0	Same as above 75-77'
80	NM	NA	0	Same as above 80-82'	
Well Construction Details (Deep) Bottom of Well: 80' Screen Zone: 80'-70' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2					
Well Construction Details (Intermediate) Bottom of Well: 55' Screen Zone: 55'-45' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2					
Well Construction Details (Intermediate) Bottom of Well: 35' Screen Zone: 35'-25' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2					

LEGEND:

- Bentonite
- Gravel pack (morie #2)
- Common fill
- Screen
- End/Top cap

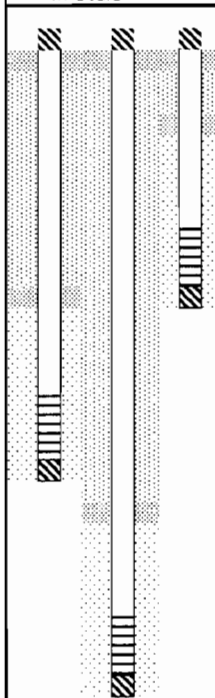
NTS - Not to scale

DTW - Depth to Water

Log of Injection Well: IW-5 S/D/I

1 Adams Boulevard
Farmingdale, New York

Client: O'Brien and Gere		Job No.: 1-52-140		Depth to Water (ft. from measuring pt.)		Site Elevation Datum
Site Name: National Heatset Printing		Address: 1 Adams Blvd, Farmingdale, New York		Date	DTW	Ground Elevation
Drilling Company: Associated Environmental		Method: Hollow Stem Auger		NM	NM	NM
Date Started: 7/14/2005		Date Completed: 7/14/2005				Measuring Point Elevation
Completion Depth: 80'/55'/35'		ENVIROTRAC Geologist: Rob Szczepanski				NM

MONITORING WELL CONSTRUCTION (NTS)	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION
		Reco- very (ft.)	Blow per 6 in.	CVM (ppm)	
	0	NM	NA	0	0-5' Hand cleared, grass, med to coarse sands
	5	NM	NA	0	5-10' It brown med to coarse, traces of gravel and cobbles
	10	NM	NA	3.1	10-12' Same as above
	15	NM	NA	0	15-17' Same as above
	20	NM	NA	0	20-22' Same as above
	25	NM	NA	6.1	25-27' Same as above
	30	NM	NA	0	30-32' Same as above
	35	NM	NA	0	35-37' Same as above
	40	NM	NA	3.1	40-42' brown coarse sand:
	45	NM	NA	0	45-47' Same as above
	50	NM	NA	0	50-52' Same as above
	55	NM	NA	0	55-57' Same as above
	60	NM	NA	6.1	60-62' Same as above
	65	NM	NA	0	65-67' Same as above
	70	NM	NA	0	70-72' Same as above
	75	NM	NA	0	75-77' Same as above
	80	NM	NA	0	80-82' Same as above

LEGEND:

 Bentonite

 Gravel
pack (morie #2)

 Common fill

 Screen

 End/Top
cap

Well Construction Details (Deep)

Bottom of Well: 80'

Screen Zone: 80'-70'

Screen material: 2" 0.020 Slot Schedule 40 PVC

Casing material: 2" Schedule 40 PVC

Sand Pack: morie #2

Well Construction Details (Intermediate)

Bottom of Well: 55'

Screen Zone: 55'-45'

Screen material: 2" 0.020 Slot Schedule 40 PVC

Casing material: 2" Schedule 40 PVC

Sand Pack: morie #2

Well Construction Details (Intermediate)

Bottom of Well: 35'

Screen Zone: 35'-25'

Screen material: 2" 0.020 Slot Schedule 40 PVC

Casing material: 2" Schedule 40 PVC

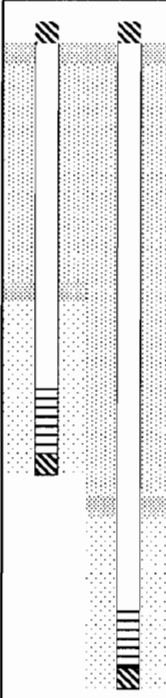
Sand Pack: morie #2

NTS - Not to scale

NTS - Not to scale

DTW - Depth to Water

Log of Injection Well: MW-6 I/D
 1 Adams Boulevard
 Farmingdale, New York

Client: O'Brien and Gere		Job No.: 1-52-140		Depth to Water (ft. from measuring pt.)		Site Elevation Datum Ground Elevation
Site Name: National Heatset Printing		Address: 1 Adams Blvd.		Date	DTW	NM
Drilling Company: Associated Environmental		Method: Hollow Stem Auger		NM	NM	Measuring Point Elevation
Date Started: 7/19/2005		Date Completed: 7/19/2005				NM
Completion Depth: 80'/55'		ENVIROTRAC Geologist: Rob Szczepanski				
MONITORING WELL CONSTRUCTION (NTS)	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION	
		Reco- very (ft.)	Blow per 6 in.	OVM (ppm)		
	0	NM	NA	0	0-5'	Hand cleared, grass, med to coarse sands
	5	NM	NA	0	5-10'	It brown med to coarse, traces of gravel and cobbles
	10	NM	NA	0	10-12'	Same as above
	15	NM	NA	0	15-17'	Same as above
	20	NM	NA	1000+	20-22'	It brown coarse sands, strong odor
	25	NM	NA	105	25-27'	Same as above
	30	NM	NA	179	30-32'	Same as above
	35	NM	NA	127	35-37'	Same as above
	40	NM	NA	730	40-42'	Same as above
	45	NM	NA	1000+	45-47'	Same as above
	50	NM	NA	1000+	50-52'	Same as above
	55	NM	NA	1000+	55-57'	Same as above
	60	NM	NA	136	60-62'	Same as above
	65	NM	NA	1000+	65-67'	Same as above
	70	NM	NA	1000+	70-72'	Same as above
	75	NM	NA	71	75-77'	Same as above
	80	NM	NA	1000+		
LEGEND:		Well Construction Details (Deep) Bottom of Well: 80' Screen Zone: 80'-70' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2				
 Bentonite  Gravel pack (morie #2)  Common fill  Screen  End/Top cap		Well Construction Details (Intermediate) Bottom of Well: 55' Screen Zone: 55'-45' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2				
NTS - Not to scale						

DTW - Depth to Water

Log of Injection Well: MW-7 (S/I)

1 Adams Boulevard
Farmingdale, New York

Client: O'Brien and Gere		Job No.: 1-52-140		Depth to Water (ft. from measuring pt.)		Site Elevation Datum Ground Elevation	
Site Name: Nation Heatset Printing		Address: 1 Adams Blvd., Farmingdale, NY		Date		DTW	
Drilling Company: Associated Environmental		Method: Hollow Stem Auger		NM		NM	
Date Started: 7/19/2005		Date Completed: 7/20/2005				Measuring Point Elevation NM	
Completion Depth: 55'/35'		ENVIROTRAC Geologist: Rob Szczepanski					

MONITORING WELL CONSTRUCTION (NTS)	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION Note: PID not used during installation of 7S(due to rain)
		Reco- very (ft.)	Blow per 6 in.	OVM (ppm)	
MW-7 (S/I)	0	NM	NA	0	0-5'
	5	NM	NA	0	5-10' Hand cleared, grass, med to coarse sands
	10	NM	NA	0	10-12' It brown med to coarse, traces of gravel and cobbles
	15	NM	NA	0	15-17' Same as above
	20	NM	NA	1000+	20-22' Same as above
	25	NM	NA	1000+	25-27' It brown coarse sands, strong odor
	30	NM	NA	605	30-32' Same as above
	35	NM	NA	1000+	35-37' Same as above
	40	NM	NA	1000+	40-42' Same as above
	45	NM	NA	1000+	45-47' Same as above
	50	NM	NA	1000+	50-52' Same as above
	55	NM	NA	1000+	55-57' Same as above
	Well Construction Details (Intermediate) Bottom of Well: 55' Screen Zone: 55'-45' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2				
	Well Construction Details (Shallow) Bottom of Well: 35' Screen Zone: 35'-25' Screen material: 2" 0.020 Slot Schedule 40 PVC Casing material: 2" Schedule 40 PVC Sand Pack: morie #2				

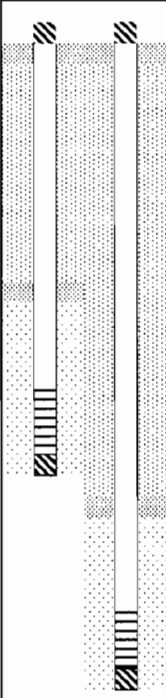
LEGEND:

- Bentonite
- Gravel pack (morie #2)
- Common fill
- Screen
- End/Top cap

DTW - Depth to Water

Log of Injection Well: IW-8 D/I
1 Adams Boulevard
Farmingdale, New York

Client: O'Brien and Gere		Job No.: 1-52-140		Depth to Water (ft. from measuring pt.)		Site Elevation Datum
Site Name: National Heatset Printing		Address: 1 Adams Blvd., Farmingdale, NY		Date	DTW	Ground Elevation
Drilling Company: Nation Heaset		Method: Hollow Stem Auger		NM	NM	NM
Date Started: 7/13/2005		Date Completed: 7/14/2005				Measuring Point Elevation
Completion Depth: 80/55		ENVIROTRAC Geologist: Rob Szczepanski				NM

MONITORING WELL CONSTRUCTION (NTS)	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION
		Reco- very (ft.)	Blow per 6 in.	QVM (ppm)	
	0	NM	NA	0	0-5'
	5	NM	NA	0	Hand cleared, grass, med to coarse sands
	10	NM	NA	0	5-10' It brown med to coarse, traces of gravel and cobbles
	15	NM	NA	0	10-12' Same as above
	20	NM	NA	0	15-17' Same as above
	25	NM	NA	0	20-22' Same as above
	30	NM	NA	0	25-27' Same as above
	35	NM	NA	0	30-32' brown coarse sands, no odor
	40	NM	NA	0	35-37' Same as above
	45	NM	NA	0	40-42' Same as above
	50	NM	NA	0	45-47' Same as above
	55	NM	NA	0	50-52' Same as above
	60	NM	NA	0	55-57' Same as above
	65	NM	NA	0	60-62' Same as above
	70	NM	NA	0	65-67' Same as above
	75	NM	NA	0	70-72' Same as above
80	NM	NA	0	75-77' Same as above	

LEGEND:

-  Bentonite
-  Gravel pack (morie #2)
-  Common fill
-  Screen
-  End/Top cap

NTS - Not to scale

Well Construction Details (Deep)

Bottom of Well: 80'

Screen Zone: 80'-70'

Screen material: 2" 0.020 Slot Schedule 40 PVC

Casing material: 2" Schedule 40 PVC

Sand Pack: morie #2

Well Construction Details (Intermediate)

Bottom of Well: 55'

Screen Zone: 55'-45'

Screen material: 2" 0.020 Slot Schedule 40 PVC

Casing material: 2" Schedule 40 PVC

Sand Pack: morie #2

DTW - Depth to Water

Waste Disposal Forms



HAZARDOUS WASTE MANIFEST

Form Approved, OMB No. 2050-0039, Expires 9-30-96

Please print or type. Do not Staple.

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.



TRIUMVIRATE ENVIRONMENTAL (NYC), LLC

WASTE PROFILE DATA FORM

NYC 006036

A GENERAL INFORMATION

1. GENERATOR NAME: NYSDOE
 3. FACILITY NAME: National Hotcat Printing
 Street Address: 1 Adams Blvd
 City/State/Zip: Farmingdale NY
 4. BILLING CONTACT: Bernie Ludwig
 5. TECHNICAL CONTACT: Same
 6. PROCESS GENERATING THE WASTE (MUST BE SPECIFIC): Drilling

2. EPA ID NUMBER: _____
 BILLING NAME: _____
 Street Address: _____
 City/State/Zip: _____
 Phone#: _____ Fax# _____
 Phone#: _____ Fax# _____

7. COMMON NAME OF THE WASTE: PCE

8. AMOUNT TO BE SHIPPED (Approx.) 8 Drums ☐ WEEK ☐ MONTH ☐ QUARTER ☐ YEAR ☒ ONE TIME ONLY ☐ OTHER _____

B CHEMICAL COMPOSITION

9. CONSTITUENT	RANGE (%)	ACTUAL (%)
Soil	99	
Perchloroethylene	1	

E PROFILE CATEGORIES

Generator Knowledge X
 Laboratory Analysis _____
 M.S.D.S. _____

F CHEMICAL CHARACTERISTICS

C PHYSICAL PROPERTIES

10. COLOR: Brown
 11. ODOR: ☐ None ☒ Mild ☐ Strong ☐ Describe _____
 12. PHYSICAL STATE:
☒ Solid ☐ Liquid ☐ Sludge ☐ Semi-solid ☐ Gas ☐ Powder
 13. PHASE LAYERING: ☒ None ☐ Bilayered ☐ Multilayered
 14. pH: ☐ <2 ☐ 2-4 ☐ 4.1-7 ☒ 7.1-9 ☐ 9.1-12.5 ☐ >12.5
 15. FLASHPOINT:
☐ <70 F ☐ 70 F-100 F ☐ 101 F-140 F ☐ 141 F-200 F ☐ >200.0
 16. SPECIFIC GRAVITY:
☐ <0.8 ☐ 0.8-1.0 ☐ 1.1-1.2 ☒ 1.3-1.4 ☐ 1.5-1.6 ☐ >1.7
 17. SOLIDS: _____

G REGULATORY INFORMATION

18. Proper Shipping Name: _____
 ERG: _____ RQ (Pounds): _____ HANDLING CODE: _____
 USEPA HAZARDOUS WASTE CODES: _____ STATE WASTE CODE: _____

19. LAND DISPOSAL RESTRICTION ☒ Wastewater ☒ Non-wastewater

CONSTITUENT/Common Name	CONCENTRATION mg/kg	TECHNOLOGY

D HAZARDOUS CHARACTERISTICS

Acute Toxicity _____ Polymerizable _____ Other Components _____
 Air Reactive _____ Pyrophoric _____ Chlorine _____
 Benzene NESHP _____ Radioactive _____ Cyanides _____
 Dioxins _____ Shock Sensitive _____ Sulfides _____
 Explosive _____ Water Sensitive _____ PCB's _____
 Organic Peroxide, Type _____ Asbestos _____

Check box if NON Applicable for above listed characteristics ☒

H ANNUAL REPORT CODES

FORM Code: 609
W002
 MGMT METHOD Code: H141

I PROFILE APPROVALS

Approval Code: _____
 Approval Date: 11
 Approval Exp: 11
 Approval Status: _____
 Approved By: _____

I hereby certify that I have personally examined and am familiar with the information in this and all attached documents. Based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete to the best of my knowledge and that all known and suspected hazards have been disclosed in accordance with 40 CFR 262.11 and 6 NYCRR 372.2 (a)(2).

Signature: [Signature] Print Name: Pol Szczepanski

Title: Project Scientist Date: 9/20/05



Generator Name NYS DEC EPA ID Number N/A
Manifest Number NYS 745529 9 Is Waste Analysis Available? Yes ☒ No ☐ On file at facility

[illegible]

How must the waste streams above be managed? (Please check one box below.)

- The waste identified above must be treated to meet the applicable treatment standards in 40 CFR 268.40 in accordance with 40 CFR 268.7(a)(2). I certify under penalty of law that the above information is accurate and true.
- The waste identified above is hazardous waste contaminated soil. I certify under penalty of law that I personally have examined this contaminated soil and it does/ does not (*circle one*) contain listed hazardous waste and does/ does not (*circle one*) exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 40 CFR 268.49(c).
- This hazardous debris identified above must be treated to the alternative treatment standards in 40 CFR 268.45.

Signature [Signature] Print Name Bob Szczelanski Date 9/20/05

Table I (for column e)

Code	Number	Subcategory
D001	1	High TOC (>10% total organic carbon) ignitable characteristic liquids
	2*	Ignitable characteristic wastes
003	3	Reactive sulfides
	4*	Other Reactives
	5*	Water Reactives
	6	Reactive Cyanides
006	7*	Characteristic for Cadmium based on TCLP
	8	Cadmium containing batteries
D008	9	Characteristic for Lead based on TCLP
	10	Lead acid batteries
009	11*	Low Mercury (<260 ppm mercury)
	12	High Mercury- containing organics (>260 ppm mercury)
	13	High mercury - containing only inorganics (>260 ppm mercury)
	14*	All D009 Wastewaters
03/F005	15	Wastes that contain only one or more of the following: carbon disulfide, cyclohexanone and/or methanol
F005	16	Contains only 2-Nitropropane
	17	Contains only Ethylene Glycol monoethyl ether (2-Ethoxyethanol)
51	18	Nonwastewaters that contain >260 mg/kg total mercury
	19	All U151 (mercury) wastewaters
F047	20	4,6 - Dinitro-o-cresol
	21	4,6 - Dinitro-o-cresol salts
92	22	Nonwastewaters, not incinerator or RMERC residues
	23	All P092 wastewaters
U240	24	2,4-Dichlorophenoxyacetic acid
	25	2,4-Dichlorophenoxyacetic acid salts and esters
	*	Indicates that UHC's are required to be identified for these categories as well as D002, D004, D005, D007, D010-D043

Table II (for column g)

1	Acetone	27	Xylene (Total)
2	Benzene	28	1,1,2-Trichloro-1,2,2-Trifluoroethane
3	N-Butyl Alcohol		
4	Carbon Disulfide		
5	Carbon Tetrachloride		
6	Chlorobenzene		
7	Cresols (o,m or p isomers)		
8	Cresylic Acid		
9	Cyclohexanone		
10	1,2-Dichlorobenzene		
11	Ethyl Acetate		
12	Ethyl Benzene		
13	Ethyl Ether		
14	Isobutanol		
15	Methanol		
16	Methylene Chloride		
17	Methyl Ethyl Ketone		
18	Methyl Isobutyl Ketone		
19	Nitrobenzene		
20	Pyridine		
21	Tetrachloroethylene		
22	Toluene		
23	1,1,1 Trichloroethane		
24	1,1,2 Trichloroethane		
25	Trichloroethylene		
26	Trichlorofluoromethane		

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WASTE AND HAZARDOUS MATERIALS DIVISION
MICHIGAN DEPARTMENT OF
ENVIRONMENTAL QUALITY

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

and Part 121 of Act 451, 1994, as amended.

Failure to file may subject you to criminal and/or civil penalties under Section 324.11151 or 324.12116 MCL.

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address NYS.D.E.C 625 Broadway, 11th Floor Albany, NY 12233-5027		NYD101199693	06001		
4. Generator's Phone (518 402-9311					
5. Transporter 1 Company Name American Haz-Mat Mgmt., Inc.		6. US EPA ID Number NY0000182675			
7. Transporter 2 Company Name St. Joseph Motor Lines		8. US EPA ID Number PAD987358587			
9. Designated Facility Name and Site Address EQ Detroit, Inc. 1923 Frederick Street Detroit, MI 48211		10. US EPA ID Number MID980991566			
11. US DOT Description (including Proper Shipping Name, Hazard Class, and HM		12. Containers	13. Total Quantity	14. Unit	
		No.	Type	Quantity	Unit
a. X Hazardous Waste, Liquid, n.o.s., 9, NA3082, PGIII (Trichloroethylene)					
b.					
c.					
d.					
15. Special Handling Instructions and Additional Information 24 HR Phone 631-924-5967 ERG#171					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name		Signature		Date Month Day Year	
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Date Month Day Year	
Printed/Typed Name		Signature		Date Month Day Year	
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Date Month Day Year	
Printed/Typed Name		Signature		Date Month Day Year	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.					
Printed/Typed Name		Signature		Date Month Day Year	





Land Disposal Restriction & Certification Form

Please check the appropriate facility:

☐ Michigan Disposal Waste Treatment Plant	49350 N. I-94 Service Drive, Belleville, MI 48111	EPA ID # MID 000 724 831
☐ Wayne Disposal, Inc. Site #2 Landfill	49350 N. I-94 Service Drive, Belleville, MI 48111	EPA ID # MID 048 090 633
☒ EQ Detroit, Inc.	1923 Frederick Street, Detroit, MI 48211	EPA ID # MID 980 991 566
☐ EQ Resource Recovery, Inc.	36345 Van Born Road, Romulus, MI 48174	EPA ID # MID 060 975 844
☐ EQ North Carolina	1005 Investment Blvd, Apex, NC 27502	EPA ID # NCD 982 170 292
☐ EQ Florida, Inc.	7202 East 8 th Ave, Tampa, FL 33619	EPA ID # FLD 981 932 494

Generator Name: NYS. D.E.C. U.S. EPA ID No.: NYD101199143
 Generator Address: 625 Broadway 11th Floor Albany, NY 12233-5027
 State Manifest No.: MT 9054173 Manifest Doc. No.: 06001

Instructions

Column 1: Identify all U.S. EPA hazardous waste codes that apply to this waste shipment.
 Column 2: Choose the appropriate treatability group: Non-Wastewater (NWW) or Wastewater (WW).
 Column 3: Enter the appropriate Subcategory, if applicable, and also enter "Contaminated Soil" or "Debris" if the waste will be treated using one of the alternative treatment technologies provided by 268.49 (c) - soil, or 268.45 - debris.
 Column 4: Enter the letter of the appropriate paragraph from pages 1-2 of this form.
 Column 5: For F001 - F005, F039, D001 - D043, Debris and Contaminated Soil: please enter the Reference Number(s) for any constituents in your waste stream subject to treatment. The Reference Number(s) can be found in the EQ Resource Guide, LDR/UHC Constituent Table.

Manifest Line Item	U.S. EPA Hazardous Waste Code (s)	NWW or WW	Subcategory	How Must the Waste be Managed?	Reference Number(s) of Hazardous Constituents contained in the waste. Complete for F001-F005, F039, D001-D043, Soil and Debris wastes.
11A	F002, D040	NWW	Trichloroethylene	A	190
11B					
11C					
11D					

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Generator Signature: _____ Title: _____

Printed Name: _____ Date: _____

How Must the Waste Be Managed?

5. THIS CONTAMINATED SOIL DOES / DOES NOT CONTAIN LISTED HAZARDOUS WASTE AND DOES / DOES NOT EXHIBIT A
 (CIRCLE ONE)
CHARACTERISTIC OF HAZARDOUS WASTE AND IS SUBJECT TO / COMPLIES WITH THE SOIL TREATMENT STANDARDS
 (CIRCLE ONE)

AS PROVIDED BY 268.49(c) OR THE UNIVERSAL TREATMENT STANDARDS. I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.



From: "Kevin Murphy" <kevinm@envirotrac.com>
To: "Marc Dent" <DentMJ@obg.com>
Date: 9/5/2006 2:51:34 PM
Subject: Purge Water Removal

Marc,

I just got a call from American Haz. Management and they'll be out at National Heatset tomorrow at 11:00am to load out the 14 purge water drums. I'll meet them on-site to sign the manifests. I'll call you if there are any issues. Thanks

Kevin Murphy

Project Manager, EnviroTrac, Ltd.

Office - (631) 471-1500

Fax - (631) 471-6363

Cell - (516) 807-8981

CC: "Edwin Rahn" <RahnEB@obg.com>

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APPENDIX K

Well Sampling Logs



FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-A (s)	PID at wellhead	0
GAUGE DATE:	8/2/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	36.68
B. Depth to Water (ft.):	18
C. Liquid Depth(ft.)(A-B):	18.68
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	2.99
F. Three Well Vols [E*3]:	9

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	22 min
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.03	0.095	167	4.64	17.61	107	7:38	18.49
Mid-Purge	6.02	0.094	162	4.65	17.62	111	7:42	18.49
Post-Purge	6.02	0.094	165	4.65	17.61	113	7:45	18.49

SAMPLING ACTIVITIES

Sampling Date:	8/2/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
purge volume ~8 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-A (i)	PID at wellhead	0
GAUGE DATE:	8/2/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

		<u>D.: Well Vol./Ft.:</u>	
		<u>Well Diameter</u>	<u>Gallon/Ft.</u>
A. Well Depth (ft.):	57		
B. Depth to Water (ft.):	18.33	2-in.	0.16
C. Liquid Depth(ft.)[A-B]:	38.67	4-in.	0.65
D. Well Vol./Ft.(see table):	0.16	6-in.	1.47
E. Well Volume (gal.) [C*D]:	6.19	8-in.	2.61
F. Three Well Vols [E*3]:	19	12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grunfos pump
Purge Time: 28 min
Purge Rate (gpm): .4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	5.95	0.064	45.2	9.48	18.68	261	8:34	18.23
Mid-Purge	5.95	0.064	45.3	9.4	18.69	263	8:37	18.23
Post-Purge	5.94	0.064	44.2	9.4	18.73	264	8:40	18.23

SAMPLING ACTIVITIES

Sampling Date: 8/2/2005
Inventory of sample containers: Three 40ml VOAs with HCL

Description of groundwater: clear, and sediment free
Comments & Observations: used grunfos pump and Horiba U-22 meter
purge volume ~9 gallons

Name of sampler(s): Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-A (d)	PID at wellhead	0
GAUGE DATE:	8/2/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	82.3
B. Depth to Water (ft.):	18
C. Liquid Depth(ft.)[A-B]:	64.3
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	10.29
F. Three Well Vols [E*3]:	31

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	20 min
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	5.75	0.12	53.9	9.02	17.96	116	6:55	18.01
Mid-Purge	5.74	0.121	53.4	9.02	17.96	118	7:00	18
Post-Purge	5.74	0.121	53.6	9.01	17.99	121	7:05	18

SAMPLING ACTIVITIES

Sampling Date:	8/2/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
total purge volume ~7 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-B (s)	PID at wellhead	0
GAUGE DATE:	8/2/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	37.28
B. Depth to Water (ft.):	18.28
C. Liquid Depth(ft.)[A-B]:	19
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	3.00
F. Three Well Vols [E*3]:	9

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITES

Purge Method: Grunfos pump

Purge Time: 25 min

Purge Rate (gpm): .4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.18	0.041	54.8	6.96	17.44	243	13:12	18.28
Mid-Purge	6.18	0.041	52.8	6.96	17.43	244	13:15	18.28
Post-Purge	6.18	0.041	51.7	6.96	17.43	244	13:18	18.28

SAMPLING ACTIVITIES

Sampling Date: 8/2/2005

Inventory of sample containers: Three 40ml VOAs with HCL

Description of groundwater: clear, and sediment free

Comments & Observations: used grunfos pump and Horiba U-22 meter

Total purge volume ~ 8 gallons

Name of sampler(s): Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-B (i)	PID at wellhead	0
GAUGE DATE:	8/2/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter

Gallon/Ft.

A. Well Depth (ft.):	57.18		
B. Depth to Water (ft.):	18.28	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	38.9	4-in.	0.65
D. Well Vol./Ft.(see table):	0.16	6-in.	1.47
E. Well Volume (gal.) [C*D]:	6.20	8-in.	2.61
F. Three Well Vols [E*3]:	19	12-in.	5.87

PURGING ACTIVITES

Purge Method:	Grunfos pump
Purge Time:	30 Minutes
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
odor, slighty turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.03	0.054	347	7.05	18.59	257	11:34	18.21
Mid-Purge	6.03	0.054	347	7.02	18.58	260	11:37	18.21
Post-Purge	6.02	0.054	340	6.99	18.59	262	11:40	18.21

SAMPLING ACTIVITIES

Sampling Date:	8/2/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~ 10 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-B (D)	PID at wellhead	0
GAUGE DATE:	8/2/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	80.69
B. Depth to Water (ft.):	18.15
C. Liquid Depth(ft.)(A-B):	62.54
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	10.00
F. Three Well Vols [E*3]:	30

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	30 Minutes
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.39	0.062	380	6.39	17.09	257	11:34	18.21
Mid-Purge	6.38	0.063	379	6.34	17.09	260	11:37	18.21
Post-Purge	6.38	0.063	379	6.39	17.1	262	11:40	18.21

SAMPLING ACTIVITIES

Sampling Date:	8/2/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~ 10 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-1 (I)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter

Gallon/Ft.

A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.84	0.037	46.3	10.35	17.71	130	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-1 (D)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

		D.: Well Vol./Ft.:	
		Well Diameter	Gallon/Ft.
A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	7.08	0.094	81.5	10.39	16.76	148	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-2 (S)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)[A-B]:	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	7.79	0.089	27.9	3.7	15.85	116	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-2 (I)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	NM
B. Depth to Water (ft.):	NM
C. Liquid Depth(ft.)[A-B]:	NM
D. Well Vol./Ft.(see table):	NM
E. Well Volume (gal.) [C*D]:	NM
F. Three Well Vols [E*3]:	NM

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	7.6	0.044	32.5	4.79	15.85	127	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-2 (D)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	7.55	0.083	21.8	4.29	15.89	120	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-3 (S)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	NM
B. Depth to Water (ft.):	NM
C. Liquid Depth(ft.)[A-B]:	NM
D. Well Vol./Ft.(see table):	NM
E. Well Volume (gal.) [C*D]:	NM
F. Three Well Vols [E*3]:	NM

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	7.48	0.087	28.4	6.79	15.51	122	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-3 (I)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

		<u>D.: Well Vol./Ft.:</u>	
		<u>Well Diameter</u>	<u>Gallon/Ft.</u>
A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	7.52	0.07	25.8	5.49	15.98	120	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-3 (D)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	NM
B. Depth to Water (ft.):	NM
C. Liquid Depth(ft.)[A-B]:	NM
D. Well Vol./Ft.(see table):	NM
E. Well Volume (gal.) [C*D]:	NM
F. Three Well Vols [E*3]:	NM

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	7.73	0.052	20.8	6.29	16.18	121	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-4 (S)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter

Gallon/Ft.

A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.29	0.048	54.1	5.12	17.52	271	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-4 (I)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter

Gallon/Ft.

A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	7.24	0.096	39.4	9.41	17.59	127	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-4 (D)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter

Gallon/Ft.

A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITIES

Purge Method: No purge

Purge Time: NA

Purge Rate (gpm): NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.07	0.127	54	8.69	17.19	189	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date: 8/4/2005

Inventory of sample containers: NA

Description of groundwater: clear, and sediment free

Comments & Observations: Horiba U-22

Name of sampler(s): Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-5 (S)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	NM
B. Depth to Water (ft.):	NM
C. Liquid Depth(ft.)[A-B]:	NM
D. Well Vol./Ft.(see table):	NM
E. Well Volume (gal.) [C*D]:	NM
F. Three Well Vols [E*3]:	NM

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	5.92	0.038	23.7	10.39	16.16	157	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-5 (I)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	7.09	0.049	22.5	7.39	16.26	132	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-5 (D)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.05	0.078	38.4	9.99	15.94	142	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-6 (s)	PID at wellhead	0
GAUGE DATE:	8/3/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	35
B. Depth to Water (ft.):	18.18
C. Liquid Depth(ft.)(A-B):	16.82
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	2.69
F. Three Well Vols [E*3]:	8

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	21 minutes
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6	0.118	60.7	4.21	16.36	124	7:05	18.15
Mid-Purge	6.01	0.118	60.2	4.18	16.36	122	7:08	18.15
Post-Purge	6.01	0.118	59.2	4.22	16.37	122	7:11	18.15

SAMPLING ACTIVITIES

Sampling Date:	8/2/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~7 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-6 (i)	PID at wellhead	0
GAUGE DATE:	8/2/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	57.4
B. Depth to Water (ft.):	18.18
C. Liquid Depth(ft.)(A-B):	39.22
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	6.30
F. Three Well Vols [E*3]:	19

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	25 minutes
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	5.42	0.04	29.2	7.23	17.74	265	13:36	18.18
Mid-Purge	5.42	0.04	26.2	7.19	17.75	268	13:39	18.18
Post-Purge	5.42	0.04	26.1	7.22	17.74	269	13:42	18.18

SAMPLING ACTIVITIES

Sampling Date:	8/2/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~ 8 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-6 (d)	PID at wellhead	0
GAUGE DATE:	8/3/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.):	83.47		
B. Depth to Water (ft.):	18.15	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	65.32	4-in.	0.65
D. Well Vol./Ft.(see table):	0.16	6-in.	1.47
E. Well Volume (gal.) [C*D]:	10.40	8-in.	2.61
F. Three Well Vols [E*3]:	31	12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	25 min
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.12	0.095	275	3.64	17.27	166	6:40	18.18
Mid-Purge	6.11	0.095	270	3.62	17.22	168	6:43	18.18
Post-Purge	6.11	0.095	270	3.61	17.27	169	6:46	18.18

SAMPLING ACTIVITIES

Sampling Date:	8/3/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~ 9 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-7 (s)	PID at wellhead	0
GAUGE DATE:	8/2/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	37.25
B. Depth to Water (ft.):	17.65
C. Liquid Depth(ft.)(A-B):	19.6
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	3.10
F. Three Well Vols [E*3]:	9

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	25 min
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.39	0.063	147	9.1	18.2	222	10:44	17.65
Mid-Purge	6.39	0.063	145	9.09	18.18	222	10:47	17.65
Post-Purge	6.39	0.063	143	9.09	18.2	223	10:50	17.65

SAMPLING ACTIVITIES

Sampling Date:	8/2/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~ 8 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-7 (i)	PID at wellhead	0
GAUGE DATE:	8/2/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	57
B. Depth to Water (ft.):	17.6
C. Liquid Depth(ft.)(A-B):	39.4
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	6.30
F. Three Well Vols [E*3]:	19

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	20 min
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	5.82	0.043	69.3	7.49	19.9	304	9:31	17.61
Mid-Purge	5.82	0.043	65.3	7.43	19.9	305	9:34	17.61
Post-Purge	5.82	0.043	65.2	7.47	19.9	302	9:37	17.61

SAMPLING ACTIVITIES

Sampling Date:	8/2/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
total purge volume ~7 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-7 (d)	PID at wellhead	0
GAUGE DATE:	8/2/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	83.42
B. Depth to Water (ft.):	17.55
C. Liquid Depth(ft.)(A-B):	65.87
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	10.50
F. Three Well Vols [E*3]:	32

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	20 min
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.36	0.091	60.7	3.23	21.01	80	10:07	17.55
Mid-Purge	6.36	0.091	60.7	3.25	21	75	10:10	17.55
Post-Purge	6.36	0.091	60.1	3.29	21	75	10:13	17.55

SAMPLING ACTIVITIES

Sampling Date:	8/2/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
total purge volume ~7 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-8 (I)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.):	NM		
B. Depth to Water (ft.):	NM	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	NM	4-in.	0.65
D. Well Vol./Ft.(see table):	NM	6-in.	1.47
E. Well Volume (gal.) [C*D]:	NM	8-in.	2.61
F. Three Well Vols [E*3]:	NM	12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	4.81	0.046	28.2	9.77	15.67	134	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	IW-8 (D)	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	NM	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	NM
B. Depth to Water (ft.):	NM
C. Liquid Depth(ft.)(A-B):	NM
D. Well Vol./Ft.(see table):	NM
E. Well Volume (gal.) [C*D]:	NM
F. Three Well Vols [E*3]:	NM

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	No purge
Purge Time:	NA
Purge Rate (gpm):	NA

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

NA

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	7.1	0.078	27.3	6.23	15.41	118	NM	NM
Mid-Purge	NM	NM	NM	NM	NM	NM	NM	NM
Post-Purge	NM	NM	NM	NM	NM	NM	NM	NM

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	NA

Description of groundwater:	clear, and sediment free
Comments & Observations:	Horiba U-22

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-C	PID at wellhead	0
GAUGE DATE:	8/3/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	81.75
B. Depth to Water (ft.):	16.3
C. Liquid Depth(ft.)(A-B):	65.45
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	10.40
F. Three Well Vols [E*3]:	31

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	25 min
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.15	0.064	481	7.49	17.28	192	8:15	18.3
Mid-Purge	6.15	0.064	475	7.49	17.29	194	8:18	18.3
Post-Purge	6.15	0.064	470	7.49	17.28	196	8:21	18.3

SAMPLING ACTIVITIES

Sampling Date:	8/3/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~ 9 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-E	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	80.12
B. Depth to Water (ft.):	16.3
C. Liquid Depth(ft.)(A-B):	63.82
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	10.20
F. Three Well Vols [E*3]:	31

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	30 minutes
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.55	0.077	67.5	2.75	18.1	-26	9:21	16.3
Mid-Purge	6.56	0.077	66.9	2.74	18.1	-27	9:24	16.3
Post-Purge	6.56	0.077	65.9	2.74	18.11	-27	9:27	16.3

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~ 10 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-F	PID at wellhead	0
GAUGE DATE:	8/3/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

		D.: Well Vol./Ft.: <u>Well Diameter</u>	<u>Gallon/Ft.</u>
A. Well Depth (ft.):	29		
B. Depth to Water (ft.):	16.2	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	12.8	4-in.	0.65
D. Well Vol./Ft.(see table):	0.16	6-in.	1.47
E. Well Volume (gal.) [C*D]:	2.05	8-in.	2.61
F. Three Well Vols [E*3]:	6	12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grunfos pump
Purge Time: 20 minutes
Purge Rate (gpm): .4 GPM
Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.67	0.091	72.8	3.59	16.27	13	9:00	16.2
Mid-Purge	6.67	0.092	71.5	3.59	16.26	14	9:03	16.2
Post-Purge	6.66	0.092	70.2	3.59	16.27	14	9:06	16.2

SAMPLING ACTIVITIES

Sampling Date: 8/3/2005
Inventory of sample containers: Three 40ml VOAs with HCL
Description of groundwater: clear, and sediment free
Comments & Observations: used grunfos pump and Horiba U-22 meter
Total purge volume ~6 gallons
Name of sampler(s): Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-G	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter

Gallon/Ft.

A. Well Depth (ft.):	80.5		
B. Depth to Water (ft.):	16.5	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	64	4-in.	0.65
D. Well Vol./Ft.(see table):	0.16	6-in.	1.47
E. Well Volume (gal.) [C*D]:	10.20	8-in.	2.61
F. Three Well Vols [E*3]:	31	12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grunfos pump

Purge Time: 25 minutes

Purge Rate (gpm): .4 liters per minute

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.58	0.089	78	2.12	18.2	-96	9:58	16.5
Mid-Purge	6.58	0.089	77	2.11	18.2	-98	10:01	16.5
Post-Purge	6.57	0.089	74	2.09	18.19	-100	10:04	16.5

SAMPLING ACTIVITIES

Sampling Date: 8/4/2005

Inventory of sample containers: Three 40ml VOAs with HCL

Description of groundwater: clear, and sediment free

Comments & Observations: used grunfos pump and Horiba U-22 meter

Total purge volume ~ 8 gallons

Name of sampler(s): Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-H	PID at wellhead	0
GAUGE DATE:	8/3/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	83.17
B. Depth to Water (ft.):	15.3
C. Liquid Depth(ft.)(A-B):	67.87
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	10.80
F. Three Well Vols [E*3]:	33

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	21 minutes
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	5.99	0.067	775	7.43	20.18	182	10:10	15.3
Mid-Purge	5.98	0.067	761	7.43	20.18	189	10:13	15.3
Post-Purge	5.99	0.067	759	7.41	20.21	190	10:16	15.3

SAMPLING ACTIVITIES

Sampling Date:	8/3/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~7 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-2A	PID at wellhead	0
GAUGE DATE:	8/3/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	25.55
B. Depth to Water (ft.):	15.55
C. Liquid Depth(ft.)(A-B):	10
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	1.60
F. Three Well Vols [E*3]:	5

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	40 minutes
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	3.3	0.102	98.8	4.82	18.71	106	13:39	15.55
Mid-Purge	3.29	0.103	95.2	4.79	18.69	105	13:42	15.55
Post-Purge	3.29	0.103	96.7	4.79	18.7	103	13:45	15.55

SAMPLING ACTIVITIES

Sampling Date:	8/3/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~ 13 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-3A	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	27.24
B. Depth to Water (ft.):	15.52
C. Liquid Depth(ft.)(A-B):	11.72
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	1.87
F. Three Well Vols [E*3]:	6

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	35 minutes
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	5.9	0.132	143	5.83	17.85	148	6:54	15.52
Mid-Purge	5.9	0.131	142	5.79	17.85	148	6:57	15.52
Post-Purge	5.9	0.131	142	5.79	17.86	149	7:00	15.52

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total volume purged ~ 12 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-9	PID at wellhead	0
GAUGE DATE:	8/4/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter

Gallon/Ft.

A. Well Depth (ft.):	82.79
B. Depth to Water (ft.):	14.35
C. Liquid Depth(ft.)(A-B):	68.44
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	10.90
F. Three Well Vols [E*3]:	33

2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	21 minutes
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	6.05	0.065	125	5.45	17.46	128	8:00	14.35
Mid-Purge	6.05	0.065	122	5.4	17.48	130	8:03	14.35
Post-Purge	6.05	0.064	122	5.41	17.48	129	8:06	14.35

SAMPLING ACTIVITIES

Sampling Date:	8/4/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~ 7 gallons	

Name of sampler(s):	Rob Szczepanski

FIELD RECORD OF WELL SAMPLING

SITE NAME:	National Heatset	WEATHER:	90s, HHH
SITE NUMBER:		WELL CONDITION:	good
WELL ID:	MW-10	PID at wellhead	0
GAUGE DATE:	8/3/2005	REFERENCE POINT:	TOC
SOUNDING METHOD:	Solinist probe	WELL DIAMETER (IN.):	2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	83.07
B. Depth to Water (ft.):	15.53
C. Liquid Depth(ft.)(A-B):	67.54
D. Well Vol./Ft.(see table):	0.16
E. Well Volume (gal.) [C*D]:	10.80
F. Three Well Vols [E*3]:	33

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method:	Grunfos pump
Purge Time:	40 minutes
Purge Rate (gpm):	.4 GPM

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):
no odor, slightly turbid

WATER QUALITY PARAMETERS

	Ph	cond	turb	DO	Temp	ORP	Time	DTW
Pre-Purge	4.5	0.096	53.2	1.51	18.03	141	11:30	15.53
Mid-Purge	4.49	0.096	54.3	1.51	18.03	141	11:33	15.53
Post-Purge	4.5	0.096	54	1.5	18.04	141	11:36	15.53

SAMPLING ACTIVITIES

Sampling Date:	8/3/2005
Inventory of sample containers:	Three 40ml VOAs with HCL

Description of groundwater:	clear, and sediment free
Comments & Observations:	used grunfos pump and Horiba U-22 meter
Total purge volume ~13 gallons	

Name of sampler(s):	Rob Szczepanski



EnviroTrac's Notes:
 From Met. Heatset sampling
 4/18 - 4/20/06

4/18/06 NATURAL CROSSER
 TOWN OF BASTION

S.S

45° sunny

Groundwater sampling

WSTK: 8:20

EQUIPMENT

2" Grundfos Pump
 Control Box

HOBAS UZZ METER
 Flow Cell

DATA BEGINS ON

FOLLOWING PAGE

Measurements

UNITS

PH

PH

COND

MS/m

TURB

NTU

DO

g/L

TEMP

°C

ORP

mV

DRUMS Blank
 10 SITE

2

W. 76.0

Sept 1470

1445	1455	1505

by

Comp 436, 424, 421

959	959	959

100. 1.35 582 500

Temp	15.9	15.0	15.6

220	309	230	218

257.2

hms Q.

	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531

18	471	2.97	1000
21	1373	1.54	1000

14	14	513	6102
15	15	101	771

2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1799	1798	1797	1796	1795	1794	1793	1792	1791	1790	1789	1788	1787	1786	1785	1784	1783	1782	1781	1780	1779	1778	1777	1776	1775	1774	1773	1772	1771	1770	1769	1768	1767	1766	1765	1764	1763	1762	1761	1760	1759	1758	1757	1756	1755	1754	1753	1752	1751	1750	1749	1748	1747	1746	1745	1744	1743	1742	1741	1740	1739	1738	1737	1736	1735	1734	1733	1732	1731	1730	1729	1728	1727	1726	1725	1724	1723	1722	1721	1720	1719	1718	1717	1716	1715	1714	1713	1712	1711	1710	1709	1708	1707	1706	1705	1704	1703	1702	1701	1700	1699	1698	1697	1696	1695	1694	1693	1692	1691	1690	1689	1688	1687	1686	1685	1684	1683	1682	1681	1680	1679	1678	1677	1676	1675	1674	1673	1672	1671	1670	1669	1668	1667	1666	1665	1664	1663	1662	1661	1660	1659	1658	1657	1656	1655	1654	1653	1652	1651	1650	1649	1648	1647	1646	1645	1644	1643	1642	1641	1640	1639	1638	1637	1636	1635	1634	1633	1632	1631	1630	1629	1628	1627	1626	1625	1624	1623	1622	1621	1620	1619	1618	1617	1616	1615	1614	1613	1612	1611	1610	1609	1608	1607	1606	1605	1604	1603	1602	1601	1600	1599	1598	1597	1596	1595	1594	1593	1592</

0	65	17	13
9	59	17	13

151	5/11	7	20

W	14.0	15.1
DP	5.7	5.3

60

1700	96	1700	96
1700	96	1700	96

17.90	17.90	17.90
5180	5180	5180

15W-6-S

Page 1630

1700	1645	1700	1715	1720

6.9	6.77	6.86	6.78

6.89	70.1	71.1	69.9	68.9

203	999	959	999

02	8.91	3.27	3.11

total	13.2	13.4	14.5	14.8

080	613	637	652	660

5.075

62

15/05/2015

16/9
SANDER

SS Natarua House Day 2

4-15-06

4:00 Sunny

Start = 7 AM

Chlorophylla Synthesis

Iw-6-J Range @ 725

740 755 815

PH 6.77 6.48 6.43

Cond 50.6 46.9 46.4

TURB 999 999 230

DO .18 0 .86

Temp 14.5 14.6 14.7

ORP 666 680 694

Iw-6-J Range @ 825

840 850 920

PH 6.85 6.46 6.33

Cond 24.4 22.4 21.6

TURB 999 465 138

DO 5.60 4.84 4.99

Temp 15.1 14.9 14.8

ORP 612 633 641

MNC - 15.08

MNF - 14.98

24.8

Iw-C Range @ 950

1000 1010 1020

PH 5.83 5.80 5.82

Cond 193 211 227

TURB 999 416 144

DO 5.48 4.82 4.53

Temp 14.3 14.7 14.8

ORP 668 670 681

Iw-F Range @ 1040

1050 1100 1110

PH 5.84 5.77 5.85

Cond 37.6 36.1 34.7

TURB 397 58 10

DO 0 0 0

Temp 13.3 13.4 14.9

ORP 558 440 373

Iw-8-J 18.55 24.62

Iw-8-S 17.71 36.68

Mw-8-D 7.91 79.53

MNC - 15.08

MNF - 14.98

24.8

IN-13-I		Range C, 12:05	
		1245	1300
PH	6.82	5.87	5.84
Cond	19.6	24.7	25.8
TDS	921	416	330
DO	7.57	6.45	6.29
Temp	17.4	14.7	14.9
ORP	516	696	729
IN-13-II		Range C, 13:43 (Duplicate)	
		1405	1420
PH	6.52	6.17	6.33
Cond	34.2	31.9	30.2
TDS	890	835	413
DO	3.91	2.66	2.80
Temp	14.8	14.8	14.8
ORP	680	652	658
IN-13-III		Range C, 14:40	
		1445	1455
PH	6.05	5.72	5.67
Cond	19.3	18.6	18.2
TDS	890	780	89
DO	2.6	6.02	6.03
Temp	14.3	14.3	14.4
ORP	673	693	696

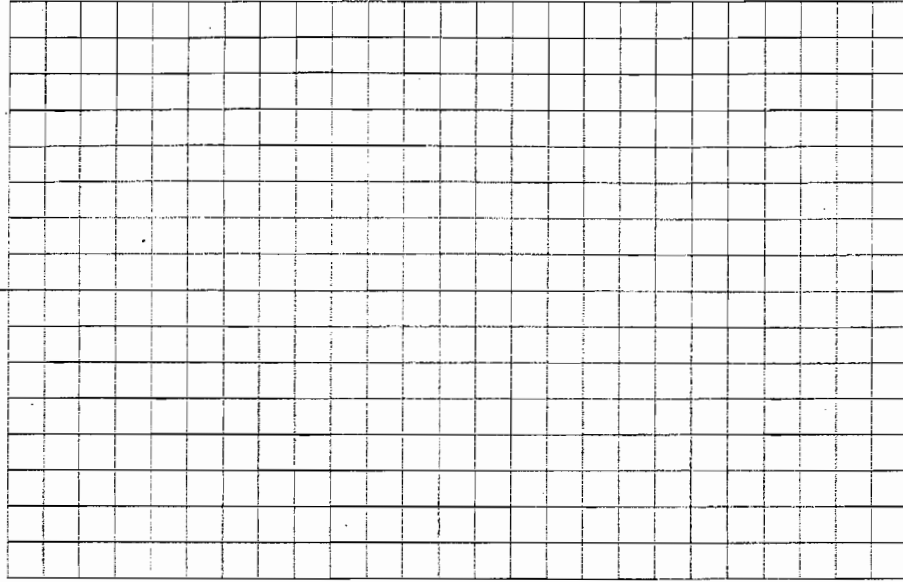
IN-13-IV		Range C, 15:40	
		1505	1555
PH	5.97	5.94	5.91
Cond	28.2	27.8	27.6
TDS	38.8	30	27.4
DO	1.87	2.7	2.8
Temp	15.3	15.4	15.4
ORP	670	699	708
IN-13-V		Range C, 16:30	
		1605	1605
PH	5.97	5.94	5.91
Cond	28.2	27.8	27.6
TDS	38.8	30	27.4
DO	1.87	2.7	2.8
Temp	15.3	15.4	15.4
ORP	670	699	708

NATURAL	Heads	4-20-06
DAY 3	6.6	sample
SOME	7.1	
DTW	DTB	
14.15	84.25	sample
790		838
PH	752 802	825 835
QWD	6.03 5.91	5.96 5.96
TWBS	29.2 32.9	35.3 43.7
D.O	96.0 54.0	44 18.56
Temp	5.34 2.74	2.85 2.78
OLP	14.6 14.8	15.4 16.1
	749 765	765 765
DTW	DTB	
14.15	25.5	sample
790	920	930
PH	6.38 6.21	6.13 6.16
QWD	52.0 52.2	52 51.9
TWBS	90.1 100	157 149
D.O	3.29 1.88	1.64 1.59
Temp	13.8 14.4	14.2 14.1
OLP	66.2 63.2	62.0 61.5

MIN	10	DTW	DTB	sample
14.39	83	1030	1045	1050
PH	6.08	5.80	5.86	5.86
QWD	87.7	66.4	66.4	66.4
TWBS	232	130	142	1050
D.O	0	0	0	0
Temp	15.1	14.3	14.4	14.4
OLP	759	779	784	784
MIN	34	DTW	DTB	sample
14.48	27.4	1448	1450	1450
PH	6.07	5.97	5.99	5.99
QWD	52.7	52.9	53.5	53.5
TWBS	73.9	74.8	77.1	77.1
D.O	1.23	1.15	1.23	1.23
Temp	14.2	14.3	14.4	14.4
OLP	643	628	611	611
MIN	5	DTW	DTB	sample
1310	1320	1312	1310	1310
PH	6.44	6.32	6.33	6.33
QWD	32.4	32.8	34.0	34.0
TWBS	281	162	103	103
D.O	0	0	0	0
Temp	15.0	15.0	15.1	15.1
OLP	571	553	543	543

	OW	PR	PRC
W 6/7	18.31	75	1840
	150	140	
PR	6.56	6.58	6.62
COND	44.5	43.2	43.1
TWZ	174	52.9	31.5
D.C	0	0	0
TEMP	15.0	15.0	15.0
SP	480	463	453

SAVING



CHEMTECH CHAIN OF CUSTODY

Client Info:

EnviroTrac Ltd.
80 B Air Park Drive
Ronkonkoma, NY 11779
(631) 471-1500 fax (631) 471-6363
Contact: Kevin Murphy

Project Info:

National Heatset Printing Site
1 Adams Boulevard
Farmingdale, New York
NYSDEC Site 1-52-140

Chemtech
284 Sheffield Street
Mountainside, New Jersey 07092

Lab ID	Date Sampled	Time Sampled	Sampler Initial	Matrix	No. of Cont.	Presrv.	EnviroTrac Sample ID	Analyses Required	Requested Turnaround
	4/18/2006	12:00	SS	L	3	HCL	MW-A (d)	8260	
	4/18/2006	12:42	SS	L	3	HCL	IW-A (s)	8260	
	4/18/2006	8:20	SS	L	3	HCL	IW-A (i)	8260	
	4/18/2006	15:10	SS	L	3	HCL	MW-7 (d)	8260	
	4/18/2006	16:19	SS	L	3	HCL	IW-7 (s)	8260	
	4/18/2006	13:50	SS	L	3	HCL	IW-7 (i)	8260	
	4/18/2006	17:23	SS	L	3	HCL	IW-6 (s)	8260	
	4/19/2006	8:20	SS	L	3	HCL	IW-6 (d)	8260	
	4/19/2006	9:03	SS	L	3	HCL	IW-6 (i)	8260	
	4/19/2006	10:35	SS	L	3	HCL	MW-C	8260	
	4/19/2006	11:30	SS	L	3	HCL	MW-F	8260	
	4/19/2006	14:32	SS	L	3	HCL	MW-B (d)	8260	

Relinquished by: 	Time/Date: 18:30 4/21/06
Received By:	Time/Date
Relinquished by:	Time/Date
Notes: G.W. = Ground Water PW = Potable Well	

CHEMTECH CHAIN OF CUSTODY

Client Info:

EnviroTrac Ltd.
80 B Air Park Drive
Ronkonkoma, NY 11779
(631) 471-1500 fax (631) 471-6363
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National Heatset Printing Site
1 Adams Boulevard
Farmingdale, New York
NYSDEC Site 1-52-140

Chemtech

284 Sheffield Street
Mountainside, New Jersey 07092

Lab ID	Date Sampled	Time Sampled	Sampler Initial	Matrix	No. of Cont.	Presrv.	EnviroTrac Sample ID	Analyses Required	Requested Turnaround
	4/19/2006	12:05	SS	L	3	HCL	IW-B (f)	8260	
	4/19/2006	14:40	SS	L	3	HCL	IW-B (s)	8260	
	4/19/2006	16:05	SS	L	3	HCL	MW-9	8260	
	4/20/2006	8:38	SS	L	3	HCL	MW-H	8260	
	4/20/2006	8:55	SS	L	3	HCL	MW-2a	8260	
	4/20/2006	10:50	SS	L	3	HCL	MW-10	8260	
	4/20/2006	12:13	SS	L	3	HCL	MW-3a	8260	
	4/20/2006	13:00	SS	L	3	HCL	MW-E	8260	
	4/20/2006	14:13	SS	L	3	HCL	MW-G	8260	
	4/20/2006	14:30	SS	L	3	HCL	Field/Equip Blank	8260	
	4/19/2006	14:32	SS	L	3	HCL	Duplicate	8260	
	4/20/2006	15:00	SS	L	3	HCL	Trip Blank	8260	
Relinquished by:	Time/Date:	Received By: Time/Date							
	10:50 AM 4/21/06								
Relinquished by:	Time/Date:	Received By: Time/Date							
Notes: G.W. = Ground Water PW = Potable Well									

7/18/06
9:55 Sun

Natural Habitat

Vk. on site
4x4

SOL. Low flow sampling

Well	DTL	DTB	Int. col color
MU-AI	17.10	56.53	DK Br
AD	17.19		DK Br
AS	16.95	37.43	DK Br
MU-7D	16.32		Br
7S	16.58		Br
7I	16.5		br.
MU-6I	16.87		DK Br
D	16.92		
S	16.82		

Well	pH	Cond	Turb	DO	Temp	ORP	Time	Gal	Sample
MW-AI	7.16	0.100	7999	9.01	15.09	179	8:55	-	
	5.47	0.067	577	10.02	15.06	232	9:08	5	
	5.12	0.060	342	10.90	15.09	264	9:16	8	X
MW-AS	7.71	.397	7999	14.39	16.02	247	9:40	-	
	6.29	.355	7999	9.40	15.43	205	9:47	5	

Well	pH	Cond	Turb	DO	Temp	ORP	Time	Gal	Sample
MW-AS	5.73	307	7999	11.13	16.73	328	10:00	10	
	5.76	300	798	12.98	16.56	314	10:05	12.5	
	5.86	.297	788	12.41	16.87	326	10:10	13.5	
	6.01	.293	589	12.77	17.10	329	10:15	15	
	6.06	.291	554	13.17	16.96	331	10:21	17	
	6.07	.289	541	13.54	17.37	330	10:28	18.5	
	6.07	.287	522	13.63	17.46	328	10:33	20	
MW-AD	7.31	.165	554	15.54	15.72	281	10:44	-	
	6.88	.185	271	15.45	16.60	205	10:57	5	
	7.13	.203	7991	12.38	16.88	255	11:05	8	
	7.65	.246	7999	13.83	17.21	197	11:16	10	
	6.97	.202	684	15.57	16.48	206	11:28	15	
	6.92	.199	578	15.80	16.50	205	11:35	18	
	6.89	.196	568	15.71	16.68	240	11:40	20	X

well	pH	Cond	turb	DO	Temp	ORP	T _{in}	Gal	Sample
ML-7I	5.86	.055	7999	19.82	16.57	278	11.47	-	
	5.48	.050	171	19.85	16.85	285	12.03	5	
	5.55	.050	87.9	16.11	17.07	330	12.12	8	
	5.59	.050	83.7	16.81	17.07	341	12.20	10	X
ML-7D	7.33	.151	160	13.24	17.69	243	12.28	-	
	6.33	.238	87.8	11.23	17.78	214	12.47	5	
	6.67	.217	61.2	11.90	17.90	193	13.29	10	
	6.58	.211	56.5	11.79	17.80	213	13.20	13	X
ML-7S	6.13	.180	7999	19.00	14.80	269	13.31	-	
	5.43	.175	7999	18.36	14.87	278	13.41	5	
	5.80	.184	300	15.98	15.06	287	13.55	10	
	5.82	.182	266	15.79	15.17	293	14.03	13	X
Field Duplicate 14.05									X

Well	Depth	Core	Temp	DO	Temp	ORP	Time	Gal	Sampled
MW-6T	6.50	107	7999	15.17	15.36	226	14.16	-	
	6.36	079	451	17.52	15.23	219	14.34	5	
	6.30	076	470	17.64	15.25	226	14.46	10	
	6.29	076	463	17.51	15.25	251	14.54	12	X
MW-6D	6.71	230	185	11.55	16.99	222	15.00	-	
	6.45	230	7999	13.10	17.19	183	15.12	5	
	6.38	218	526	12.97	16.78	180	15.25	10	
	6.36	217	489	12.82	16.87	191	15.30	12	X
MW-6S	6.96	513	7999	12.20	15.15	171	15.37	-	
	6.63	460	7999	11.38	15.46	168	15.50	5	
	6.66	456	7999	10.98	15.63	191	16.09	10	
	6.64	449	7999	11.67	15.89	175	16.30	15	X

Equipment Blank 16.45

7/19/08
d. S. S.

National Helix

U.L. on site
-xy
Solid V Sampling
FD Rein on site

Well	NTL	Initial
MW-B I	17.03	DF. BC.
MW-B D	16.90	BC.
MW-B S	16.66	BC.
MW-C	14.04	H. BC.
MW-F	13.94	H. BC.
MW-E	14.05	clear
MW-G	14.24	

Well	pH	Cond	turb	DO	Temp	ORP	Time	Gal	Sampled
MW-B I	6.42	.068	7999	12.95	14.94	402	8:18	-	
	5.23	.059	188	13.35	14.98	417	8:30	5	
	5.30	.056	102	14.63	15.01	397	8:43	10	
	5.40	.055	91.3	14.72	15.07	384	8:51	14	X
MW-B D	7.13	.209	7999	13.12	14.91	316	9:01	-	
	6.85	.133	142	13.95	14.90	313	9:15	5	
	6.84	.125	100	12.19	14.95	337	9:30	10	
	6.79	.123	92.1	12.17	14.98	338	9:36	12.5	X
MW-B S	7.56	.185	7999	17.42	14.55	240	9:44	-	
	7.10	.184	234	18.02	14.61	260	9:56	5	
	7.18	.190	222	19.36	14.78	258	10:09	10	
	7.10	.191	88.9	19.21	14.74	260	10:16	12.5	X

well	pH	cond	turb	DO	temp	ORP	Time	gal	Sampled
MV-C	5.88	.103	4.93	19.99	14.91	323	10:49	-	
	5.52	.111	227	19.60	15.07	3413	10:56	5	
	5.86	.120	112	13.89	15.13	3246	11:22	10	
	6.07	.120	103	15.04	15.09	2288	11:31	14	
	6.09	.119	101	14.91	15.05	317	11:40	16	X
MV-F	6.03	.274	235	15.30	14.99	259	11:51	-	
	6.02	.241	81.1	14.52	15.19	184	12:05	5	
	6.05	.256	83.5	12.78	15.00	165	12:13	8	
	6.08	.256	78.2	12.69	15.11	154	12:18	10	
	6.08	.274	74.3	12.61	14.99	145	12:23	12	X

well	pH	cond	turb	DO	temp	ORP	Time	gal	Sampled
MV-E	5.20	6.299	176	19.99	15.50	285	13:18	-	
	5.75	.131	113	15.09	15.53	235	13:31	5	
	5.86	.141	97.8	12.51	15.55	189	13:45	10	
	5.90	.139	87.3	9.28	15.51	180	13:52	13	
	6.05	.138	80.9	9.21	15.62	170	13:58	15	X
MV-G	6.55	.148	438	12.54	14.99	168	14:07	-	
	6.41	.174	156	9.29	14.92	109	14:16	5	
	6.58	.173	104	7.71	15.24	78	14:24	9	
	6.59	.170	92.6	7.83	15.25	66	14:29	11	X

7/20/06
7th District

Natural Habitat

W. on site
4th on site
SOLID Sampling
ED on site

Well	DTW	Sample Label
ML-2A	13.43	Clear
ML-3A	13.36	Clear
ML-10	13.39	Clear
ML-H	13.16	Purple 11.65. Elliptical slightly purple Elliptical
ML-9	12.18	Clear

Well	pH	Cond	turb	DO	temp	DRP	time	gal	Sampled
ML-2A	6.96	.119	205	7.57	16.27	222	8:14	-	
	5.97	.139	74.2	4.16	16.61	191	8:31	5	
	6.16	.143	66.4	4.08	16.52	174	8:38	7.5	
	6.26	.141	66.6	4.07	16.64	170	8:48	10	X
ML-3A	6.22	.242	138	4.98	15.50	226	8:59	-	
	6.02	.251	67.5	3.51	15.92	255	9:08	5	
	6.06	.252	65.1	3.61	16.03	261	9:25	9	X
ML-10	6.46	.861	307	11.68	15.23	648	9:37	-	
	6.32	.448	249	8.59	15.78	684	9:54	5	
	6.34	.522	192	9.50	15.72	699	10:07	8.5	
	6.33	.621	166	10.31	16.05	708	10:15	10	
	6.31	.643	166	10.40	16.86	714	10:25	12.5	X

well	PH	cond	turb	DO	temp	ORP	flu	gal	Sampled
Mw-11	6.22	105	7999	14.69	15.21	690	11:07	-	
	5.53	116	705	10.66	15.57	729	11:22	5	
	5.54	134	397	10.16	15.46	734	11:30	7.5	
	5.63	156	335	9.28	15.45	736	11:37	10	
	5.70	265	314	9.33	15.34	729	11:44	12	X
Mw-9	6.66	1058	162	11.30	14.92	638	11:57	-	
	6.12	105	140	10.49	15.09	630	12:10	5	
	6.14	113	139	10.35	15.12	620	12:25	10	X
Trip Blank 15:00									

used 5 drums
14 total on site

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Heatset WEATHER: Partly Cloudy 76.5°
SITE NUMBER: _____ WELL CONDITION: _____
WELL ID: 1W-A-(5) GAUGE TIME: 11:48
GAUGE DATE: 10-11-06 REFERENCE POINT: TOC
SOUNDING METHOD: solinst probe WELL DIAMETER (IN.): 2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.): 37.54
B. Depth to Water (ft.): 17.64
C. Liquid Depth(ft.)(A-B): 19.90
D. Well Vol./Ft.(see table): .16
E. Well Volume (gal.) [C*D]: 3.18
F. Three Well Vols [E*3]: 9.55

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 10 mins

Purge Rate (gpm): 0.28 gpm

Description of activity (i.e.-visual observation of water quality, did well pump

pre brown dry, etc): _____

mid light brown _____

post - clear _____

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	<u>11:50</u>	<u>6.39</u>	<u>0.000</u>	<u>16.43</u>	<u>8.70</u>	<u>373</u>	<u>316.0</u>	<u>17.64</u>
Mid-Purge	<u>11:55</u>	<u>6.39</u>	<u>0.000</u>	<u>17.03</u>	<u>8.44</u>	<u>373</u>	<u>320.0</u>	<u>17.64</u>
Post-Purge	<u>12:00</u>	<u>6.30</u>	<u>0.000</u>	<u>17.23</u>	<u>8.40</u>	<u>373</u>	<u>325.0</u>	<u>17.64</u>

SAMPLING ACTIVITIES

Sampling Date: 10-11-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used Horiba U-22, Grundfos pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Heatset WEATHER: Partly Cloudy 65°
SITE NUMBER: _____ WELL CONDITION: 16000
WELL ID: 1N-A(1) GAUGE TIME: 11:15
GAUGE DATE: 10-11-06 REFERENCE POINT: TOC
SOUNDING METHOD: Solinist probe WELL DIAMETER (IN.): 2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter

Gallon/Ft.

A. Well Depth (ft.): 55.40
B. Depth to Water (ft.): 18.00
C. Liquid Depth(ft.)(A-B): 37.40
D. Well Vol./Ft.(see table): 0.16
E. Well Volume (gal.) [C*D]: 5.98
F. Three Well Vols [E*3]: 17.95

2-in. 0.16
4-in. 0.65
6-in. 1.47
8-in. 2.61
12-in. 5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 20 mins
Purge Rate (gpm): 0.37 gpm

Description of activity (i.e.-visual observation of water quality, did well pump

pre dark brown / silty/dry, etc):

med light brown

post light brown

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	11:30	6.38	0.000	15.93	8.95	372	322.0	18.00
Mid-Purge	11:40	6.32	0.000	16.60	8.45	375	330.0	18.00
Post-Purge	11:50	6.31	0.000	16.66	8.23	376	331.0	18.00

SAMPLING ACTIVITIES

Sampling Date: 10-11-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater:

Comments & Observations: used Horiba U-22 meter,
Grundfos pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Heatset WEATHER: Partly Cloudy 65°
SITE NUMBER: _____ WELL CONDITION: _____
WELL ID: 1W-A (d) GAUGE TIME: 10:50
GAUGE DATE: 10-11-06 REFERENCE POINT: TOC
SOUNDING METHOD: salinst probe WELL DIAMETER (IN.): 2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter

Gallon/Ft.

A. Well Depth (ft.): 75.30
B. Depth to Water (ft.): 18.08
C. Liquid Depth(ft.)(A-B): 57.22
D. Well Vol./Ft.(see table): 0.16
E. Well Volume (gal.) [C*D]: 9.15
F. Three Well Vols [E*3]: 27.46

2-in. 0.16
4-in. 0.65
6-in. 1.47
8-in. 2.61
12-in. 5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 15 mins

Purge Rate (gpm): 0.26 gpm

Description of activity (i.e.-visual observation of water quality, did well pump

pre - light brown dry, etc):

mid light brown tint purple.

post dark brown

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	10:55	6.34	0.000	16.72	8.69	376	315.0	18.08
Mid-Purge	11:05	6.34	0.000	16.48	8.63	377	321.0	18.08
Post-Purge	11:10	6.30	0.000	16.12	8.60	378	327.0	

SAMPLING ACTIVITIES

Sampling Date: 10-11-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater:

Comments & Observations: used Horiba U-22 meter,
Grundfos pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Hatset WEATHER: 70' Sunny
SITE NUMBER: _____ WELL CONDITION: _____
WELL ID: 1W-B (S) GAUGE TIME: 10:45
GAUGE DATE: 10-10-06 REFERENCE POINT: TOC
SOUNDING METHOD: probe WELL DIAMETER (IN.): 2'

CALCULATION OF WELL VOLUME

A. Well Depth (ft.): 36.08
B. Depth to Water (ft.): 17.57
C. Liquid Depth(ft.)(A-B): 19.11
D. Well Vol./Ft.(see table): 0.16
E. Well Volume (gal.) [C*D]: 3.05
F. Three Well Vols [E*3]: 9.1

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 20 mins

Purge Rate (gpm): 0.29 gpm

Description of activity (i.e.-visual observation of water quality, did well pump

pre - clear dry, etc): _____

mid clear

post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	10:50	6.15	0.123	19.23	6.21	680	220	
Mid-Purge	10:58	6.28	0.142	18.76	5.78	651	199	
Post-Purge	11:10	6.27	0.143	18.77	5.76	651	198	

SAMPLING ACTIVITIES

Sampling Date: 10-10-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: Horiba U-22, Grundfos pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Hasket WEATHER: Sunny 70
 SITE NUMBER: _____ WELL CONDITION: _____
 WELL ID: 1W-B(1) GAUGE TIME: 11:53
 GAUGE DATE: 10-10-06 REFERENCE POINT: TOC
 SOUNDING METHOD: Solomist probe WELL DIAMETER (IN.): 2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter Gallon/Ft.

A. Well Depth (ft.):	<u>54.62</u>		
B. Depth to Water (ft.):	<u>17.90</u>	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	<u>36.72</u>	4-in.	0.65
D. Well Vol./Ft.(see table):	<u>0.16</u>	6-in.	1.47
E. Well Volume (gal.) [C*D]:	<u>5.87</u>	8-in.	2.61
F. Three Well Vols [E*3]:	<u>17.62</u>	12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 17 min's

Purge Rate (gpm): 0.30 gpm

Description of activity (i.e.-visual observation of water quality, did well pump

pre - light brown dry, etc):

mid light brown

post light brown

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	11:55	7.06	0.069	17.11	4.77	348	36.70	17.90
Mid-Purge	12:05	5.91	0.070	16.61	4.25	425	119.0	17.90
Post-Purge	12:12	5.67	0.070	16.76	4.16	430	77.2	17.90

SAMPLING ACTIVITIES

Sampling Date: 10-10-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater:

Comments & Observations: used Grundfos pump & Horiba
U-22 meter

Name of sampler(s): KC, IB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>70' Sunny</u>
SITE NUMBER: _____	WELL CONDITION: _____
WELL ID: <u>MN-B(D)</u>	GAUGE TIME: _____
GAUGE DATE: <u>10-10-06</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.): <u>79.53</u>	
B. Depth to Water (ft.): <u>17.80</u>	2-in. 0.16
C. Liquid Depth(ft.)[A-B]: <u>61.73</u>	4-in. 0.65
D. Well Vol./Ft.(see table): <u>0.11</u>	6-in. 1.47
E. Well Volume (gal.) [C*D]: <u>9.87</u>	8-in. 2.61
F. Three Well Vols [E*3]: <u>29.6</u>	12-in. 5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 18 mins

Purge Rate (gpm): 0.37

Description of activity (i.e.-visual observation of water quality, did well pump
pre-dark brown-lots dry, etc): sediment
mid brown
post brown

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	11:20	6.70	0.165	19.18	0.00	408	-5.0	17.80
Mid-Purge	11:30	6.46	0.126	16.92	0.00	439	470	17.80
Post-Purge	11:38	6.40	0.108	17.02	0.83	441	426	17.80

SAMPLING ACTIVITIES

Sampling Date: 10-10-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used grundfos pump + Honda
U-22 meter

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Heatset WEATHER: 70° Sunny
 SITE NUMBER: M WELL CONDITION:
 WELL ID: HN-6 (S) GAUGE TIME: 1:15
 GAUGE DATE: 10-10-06 REFERENCE POINT: TOC
 SOUNDING METHOD: solumist probe WELL DIAMETER (IN.): 2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter Gallon/Ft.

A. Well Depth (ft.):	<u>33.38</u>		
B. Depth to Water (ft.):	<u>17.68</u>	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	<u>15.7</u>	4-in.	0.65
D. Well Vol./Ft.(see table):	<u>0.16</u>	6-in.	1.47
E. Well Volume (gal.) [C*D]:	<u>2.51</u>	8-in.	2.61
F. Three Well Vols [E*3]:	<u>7.53</u>	12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
 Purge Time: 18 mins
 Purge Rate (gpm): 0.28 gpm

Description of activity (i.e.-visual observation of water quality, did well pump

pre-thick dark brown dry, etc): Silty
mid dark brown
post light brown

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	1:35	8.21	0.710	20.34	0.00	256	0.0	17.68
Mid-Purge	1:43	8.30	0.426	19.95	0.00	269	5.0	17.68
Post-Purge	1:50	6.38	0.324	19.99	0.00	336	5.0	17.68
	1:53	6.38	0.329	20.02	0.00	340	5.0	17.68

SAMPLING ACTIVITIES

Sampling Date: 10-10-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater:

Comments & Observations: used Horiba U-22 meter,
Grundfos pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Heatset WEATHER: Sunny 70
SITE NUMBER: _____ WELL CONDITION: _____
WELL ID: 1W-6(1) GAUGE TIME: 2:10
GAUGE DATE: 10-10-06 REFERENCE POINT: TOC
SOUNDING METHOD: solinst probe WELL DIAMETER (IN.): 2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.): 53.08
B. Depth to Water (ft.): 17.71
C. Liquid Depth(ft.)(A-B): 35.37
D. Well Vol./Ft.(see table): 0.16
E. Well Volume (gal.) [C*D]: 5.65
F. Three Well Vols [E*3]: 16.97

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 21 mins
Purge Rate (gpm): 0.21 gpm
Description of activity (i.e.-visual observation of water quality, did well pump
pre. dark brown/silty dry, etc):
mid dark brown
post dark brown

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	2:19	6.98	0.083	18.99	2.47	325	-5.0	17.71
Mid-Purge	2:25	6.53	0.087	18.06	3.24	346	-5.0	17.71
Post-Purge	2:40	6.53	0.088	18.20	3.27	339	-5.0	17.71

SAMPLING ACTIVITIES

Sampling Date: 10-10-06
Inventory of sample containers: 3 40ml VOAs w/ HCL
Description of groundwater: _____
Comments & Observations: Grundfos pump, Horiba U-22
Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 70</u>
SITE NUMBER: _____	WELL CONDITION: _____
WELL ID: <u>1W-6 (D)</u>	GAUGE TIME: <u>1:58</u>
GAUGE DATE: <u>10-10-06</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: _____	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.):	<u>99.08</u>
B. Depth to Water (ft.):	<u>17.76</u>
C. Liquid Depth(ft.)[A-B]:	<u>81.32</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>13.01</u>
F. Three Well Vols [E*3]:	<u>39.03</u>

2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 15 mins

Purge Rate (gpm): 0.18 gpm

Description of activity (i.e.-visual observation of water quality, did well pump

are - dark brown - silty, etc):

mid dark brown

post brown

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	2:00	6.86	0.174	19.36	0.82	328	-5.0	17.76
Mid-Purge	2:10	6.42	0.166	20.22	0.00	346	-5.0	17.76
Post-Purge	2:15	6.43	0.159	20.43	0.00	349	487	

SAMPLING ACTIVITIES

Sampling Date: 10-10-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used Hanna U-22, + Grundfos pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>65° Partly Cloudy</u>
SITE NUMBER: _____	WELL CONDITION: _____
WELL ID: <u>1W-7 (S)</u>	GAUGE TIME: <u>9:10</u>
GAUGE DATE: <u>10-11-06</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>36.75</u>
B. Depth to Water (ft.):	<u>17.27</u>
C. Liquid Depth(ft.)(A-B):	<u>19.48</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>3.11</u>
F. Three Well Vols [E*3]:	<u>9.35</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 12 mins
Purge Rate (gpm): 0.37

Description of activity (i.e.-visual observation of water quality, did well pump

pre - dark brown dry, etc): silty
mid brown
post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	9:20	6.47	0.000	16.49	9.40	361	327.0	17.27
Mid-Purge	9:28	6.41	0.000	18.55	8.39	364	334.0	17.27
Post-Purge	9:32	6.35	0.000	18.70	8.36	367	340.0	17.27

SAMPLING ACTIVITIES

Sampling Date: 10-11-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used Horiba U-22, Grundfos pump

Name of sampler(s): KL, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Heatset WEATHER: 65° Partly Cloudy
 SITE NUMBER: _____ WELL CONDITION: _____
 WELL ID: 1W-7(1) GAUGE TIME: 10:15
 GAUGE DATE: 10-11-06 REFERENCE POINT: TOC
 SOUNDING METHOD: Solinist probe WELL DIAMETER (IN.): 2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter

Gallon/Ft.

A. Well Depth (ft.):	<u>55.97</u>		
B. Depth to Water (ft.):	<u>17.42</u>	2-in.	0.16
C. Liquid Depth(ft.)[A-B]:	<u>38.55</u>	4-in.	0.65
D. Well Vol./Ft.(see table):	<u>0.16</u>	6-in.	1.47
E. Well Volume (gal.) [C*D]:	<u>6.16</u>	8-in.	2.61
F. Three Well Vols [E*3]:	<u>18.50</u>	12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 20 mins

Purge Rate (gpm): 0.3 gpm

Description of activity (i.e. visual observation of water quality, did well pump

pre brown dry, etc): _____

mid brown _____

post clear _____

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	10:25	6.33	0.000	17.30	8.73	377	3170	17.42
Mid-Purge	10:35	6.33	0.000	17.64	8.43	376	3240	17.42
Post-Purge	10:45	6.31	0.000	17.65	8.35	377	3260	17.42

SAMPLING ACTIVITIES

Sampling Date: 10-11-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used Hanna U-22 meter,

Grundfos pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Hasket WEATHER: Partly Cloudy 65
SITE NUMBER: _____ WELL CONDITION: _____
WELL ID: MW-7(d) GAUGE TIME: 9:40
GAUGE DATE: 10-11-06 REFERENCE POINT: TOC
SOUNDING METHOD: Solinst probe WELL DIAMETER (IN.): 2"

CALCULATION OF WELL VOLUME

A. Well Depth (ft.): 78.42
B. Depth to Water (ft.): 17.21
C. Liquid Depth(ft.)(A-B): 61.21
D. Well Vol./Ft.(see table): 1.60
E. Well Volume (gal.) [C*D]: 9.79
F. Three Well Vols [E*3]: 29.38

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 18 mins

Purge Rate (gpm): 0.27 gpm

Description of activity (i.e. visual observation of water quality, did well pump

pre. dark brown/silty dry, etc):

mid light brown

post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	10:00	6.37	0.000	16.22	9.23	373	326.0	17.21
Mid-Purge	10:10	6.32	0.000	17.68	8.48	376	330.0	17.21
Post-Purge	10:18	6.28	0.000	18.97	7.90	380	333.0	17.21

SAMPLING ACTIVITIES

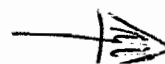
Sampling Date: 10-11-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater:

Comments & Observations: used Horiba U-22 Grundfos
pump

Name of sampler(s): LL, TB



MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Heatsct WEATHER: 75° Sunny
 SITE NUMBER: _____ WELL CONDITION: _____
 WELL ID: MW-C GAUGE TIME: 9:45
 GAUGE DATE: 10-09-06 REFERENCE POINT: TOC
 SOUNDING METHOD: Solinst probe WELL DIAMETER (IN.): 9"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter Gallon/Ft.

A. Well Depth (ft.):	<u>81.75</u>		
B. Depth to Water (ft.):	<u>15.10</u>	2-in.	0.16
C. Liquid Depth(ft.)(A-B):	<u>66.65</u>	4-in.	0.65
D. Well Vol./Ft.(see table):	<u>.16</u>	6-in.	1.47
E. Well Volume (gal.) [C*D]:	<u>10.66</u>	8-in.	2.61
F. Three Well Vols [E*3]:	<u>31.92</u>	12-in.	5.87

PURGING ACTIVITES

Purge Method: Gruntfos Pump

Purge Time: 50 mins

Purge Rate (gpm): 0.38 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

pre - orange
mid orange
post orange

WATER QUALITY PARAMETERS

		m S/cm	°C	g/L	mV	NTU	
	Time	pH	Cond.	Temp.	D.O.	ORP	DTW
Pre-Purge	10:00	6.60	0.129	18.03	3.11	126	-5.0 15.10
Mid-Purge	10:25	6.00	0.103	16.71	2.54	153	-5.0 15.10
Post-Purge	10:50	5.98	0.093	16.65	2.60	161	-5.0 15.10

SAMPLING ACTIVITIES

Sampling Date: 10-09-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater:

Comments & Observations: used gruntfos pump &
Horiba U-22 meter

Name of sampler(s): KC, AW

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Cloudy 65°</u>
SITE NUMBER: _____	WELL CONDITION: _____
WELL ID: <u>MW-E</u>	GAUGE TIME: <u>2:45</u>
GAUGE DATE: <u>10-11-06</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>solinist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>79.05</u>
B. Depth to Water (ft.):	<u>15.90</u>
C. Liquid Depth(ft.)(A-B):	<u>63.15</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>10.10</u>
F. Three Well Vols [E*3]:	<u>30.3</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 10 mins

Purge Rate (gpm): 0.19 gpm

Description of activity (i.e.-visual observation of water quality, did well pump

pre clear dry, etc): _____

mid clear

post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	<u>2:50</u>	<u>6.69</u>	<u>0.107</u>	<u>15.99</u>	<u>2.96</u>	<u>201</u>	<u>246.0</u>	<u>15.90</u>
Mid-Purge	<u>2:00</u>	<u>6.27</u>	<u>0.092</u>	<u>15.89</u>	<u>0.00</u>	<u>234</u>	<u>183.0</u>	<u>15.90</u>
Post-Purge	<u>3:05</u>	<u>6.27</u>	<u>0.093</u>	<u>15.88</u>	<u>0.00</u>	<u>234</u>	<u>183.0</u>	<u>15.90</u>

SAMPLING ACTIVITIES

Sampling Date: 10-11-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used Homba U-22 meter ?

Grundfos pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Heatset WEATHER: 75° Sunny
SITE NUMBER: _____ WELL CONDITION: _____
WELL ID: MW-F GAUGE TIME: 10:50
GAUGE DATE: 10-09-06 REFERENCE POINT: TOC
SOUNDING METHOD: Solinst probe WELL DIAMETER (IN.): 2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter Gallon/Ft.

A. Well Depth (ft.): 24.80
B. Depth to Water (ft.): 14.95
C. Liquid Depth(ft.)[A-B]: 9.85
D. Well Vol./Ft.(see table): ~~1.57~~ 1.16
E. Well Volume (gal.) [C*D]: 1.57
F. Three Well Vols [E*3]: 4.72

2-in. 0.16
4-in. 0.65
6-in. 1.47
8-in. 2.61
12-in. 5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 35 min

Purge Rate (gpm): 0.138 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

pre clear
mid clear
post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	10:55	5.93	0.176	15.16	0.182	113	498	14.95
Mid-Purge	11:10	5.73	0.192	15.01	0.12	52	1630	14.95
Post-Purge	11:30	5.66	0.188	14.99	0.13	55	1650	14.95

SAMPLING ACTIVITIES

Sampling Date: 10-09-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater:

Comments & Observations: Used Honba U-22 meter
Grundfos pump

Name of sampler(s): KC, AJD

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Cloudy 65</u>
SITE NUMBER: _____	WELL CONDITION: _____
WELL ID: <u>MW-6</u>	GAUGE TIME: <u>2:13</u>
GAUGE DATE: <u>10-11-06</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>79.00</u>
B. Depth to Water (ft.):	<u>16.10</u>
C. Liquid Depth (ft.) [A-B]:	<u>62.90</u>
D. Well Vol./Ft. (see table):	<u>.16</u>
E. Well Volume (gal.) [C*D]:	<u>10.06</u>
F. Three Well Vols [E*3]:	<u>30.19</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 25 mins

Purge Rate (gpm): 0.38 gpm

Description of activity (i.e.-visual observation of water quality, did well pump

pre - light brown dry, etc):

mid - light brown

post - light brown

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	<u>2:15</u>	<u>7.10</u>	<u>0.137</u>	<u>16.41</u>	<u>1.207</u>	<u>115</u>	<u>3400</u>	<u>16.10</u>
Mid-Purge	<u>2:30</u>	<u>6.98</u>	<u>0.132</u>	<u>16.48</u>	<u>0.77</u>	<u>137</u>	<u>401</u>	<u>16.10</u>
Post-Purge	<u>2:40</u>	<u>6.97</u>	<u>0.133</u>	<u>16.55</u>	<u>0.75</u>	<u>139</u>	<u>950.0</u>	<u>16.10</u>

SAMPLING ACTIVITIES

Sampling Date: 10-11-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used Harbor U-22
Grundfos pump.

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatsct</u>	WEATHER: <u>Partly Cloudy 65°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>MN-H</u>	GAUGE TIME: <u>1:15</u>
GAUGE DATE: <u>10-11-06</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.):	<u>84.25</u>
B. Depth to Water (ft.):	<u>15.00</u>
C. Liquid Depth(ft.)(A-B):	<u>69.25</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>11.08</u>
F. Three Well Vols [E*3]:	<u>33.24</u>

2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: _____

Purge Rate (gpm): _____

Description of activity (i.e.-visual observation of water quality, did well pump

pre - tint of purple, dry, etc): _____

mid tint of purple _____

post clear cloudy _____

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	1:18	7.26	0.098	15.90	5.54	456	-5.0	15.00
Mid-Purge	1:35	6.89	0.102	14.91	5.36	480	887.0	15.00
Post-Purge	1:41	6.07	0.091	14.32	4.86	479	-5.0	15.00
	1:45	5.99	0.092	14.25	4.80	475	-5.0	15.00

SAMPLING ACTIVITIES

Sampling Date: 10-11-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used Horiba U-22 meter,
Grundfos pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>Hertset</u>	WEATHER: <u>Sunny 70°</u>
SITE NUMBER: _____	WELL CONDITION: _____
WELL ID: <u>MW-2A</u>	GAUGE TIME: <u>8:50</u>
GAUGE DATE: <u>10-10-06</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Schist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>25.50</u>
B. Depth to Water (ft.):	<u>15.17</u>
C. Liquid Depth(ft.)(A-B):	<u>10.33</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>1.65</u>
F. Three Well Vols [E*3]:	<u>4.95</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 13 mins
Purge Rate (gpm): 0.28 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry, etc):

pre clear
mid clear
post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	8:55	6.90	0.000	15.35	3.54	150	634.2	15.17
Mid-Purge	9:03	6.10	0.160	15.58	0.19	139	19.9	15.17
Post-Purge	9:08	6.10	0.159	15.48	0.16	142	20.1	15.17

SAMPLING ACTIVITIES

Sampling Date: 10-10-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater:

Comments & Observations: used Honba U-22 meter & grundfos pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: National Heatset WEATHER: Sunny 70°
SITE NUMBER: _____ WELL CONDITION: _____
WELL ID: MW-3A GAUGE TIME: 10:20
GAUGE DATE: 10-10-06 REFERENCE POINT: TOC
SOUNDING METHOD: Solinist probe WELL DIAMETER (IN.): 2"

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

Well Diameter Gallon/Ft.

A. Well Depth (ft.): 27.80
B. Depth to Water (ft.): 15.10 2-in. 0.16
C. Liquid Depth(ft.)[A-B]: 12.70 4-in. 0.65
D. Well Vol./Ft.(see table): 0.16 6-in. 1.47
E. Well Volume (gal.) [C*D]: 2.03 8-in. 2.61
F. Three Well Vols [E*3]: 6.09 12-in. 5.87

PURGING ACTIVITIES

Purge Method: Whale pump(speed adjusted)

Purge Time: 21 mins

Purge Rate (gpm): _____

Description of activity (i.e.-visual observation of water quality, did well pump

pre-purge dry, etc): _____

mid-purge _____

post-purge _____

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	10:21	5.98	0.197	18.63	4.34	558	140.0	15.10
Mid-Purge	10:33	5.91	0.200	20.25	1.48	621	52.7	15.10
Post-Purge	10:40	5.95	0.191	20.68	1.37	629	31.1	15.10

SAMPLING ACTIVITIES

Sampling Date: 10-10-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used Horiba U-22 meter,
whale pump

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Partly Cloudy</u>
SITE NUMBER: _____	WELL CONDITION: _____
WELL ID: <u>MN-9-</u>	GAUGE TIME: <u>12:18</u>
GAUGE DATE: <u>10-11-06</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>solist probe</u>	WELL DIAMETER (IN.): <u>4 1/2"</u>

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.):	<u>23.00</u>
B. Depth to Water (ft.):	<u>14.04</u>
C. Liquid Depth(ft.)[A-B]:	<u>68.96</u>
D. Well Vol./Ft.(see table):	<u>0.65</u>
E. Well Volume (gal.) [C*D]:	<u>44.82</u>
F. Three Well Vols [E*3]:	<u>134.4</u>

2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: 5 Whale pump
Purge Time: 20 mins
Purge Rate (gpm): 0.29 gpm

Description of activity (i.e.-visual observation of water quality, did well pump

on - clear dry, etc):
mid clear hint of purple
post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	12:20	6.45	0.000	16.16	9.08	367	310.0	14.04
Mid-Purge	12:35	6.85	0.130	15.55	3.85	489	149.0	14.04
Post-Purge	12:40	6.83	0.110	15.43	3.85	491	143.0	14.04

SAMPLING ACTIVITIES

Sampling Date: 10-11-06
Inventory of sample containers: _____

3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used Homba U-22

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>70° Sunny</u>
SITE NUMBER: _____	WELL CONDITION: _____
WELL ID: <u>MW-10</u>	GAUGE TIME: <u>9:25</u>
GAUGE DATE: <u>10-10-06</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>probe</u>	WELL DIAMETER (IN.): <u>4"</u>

CALCULATION OF WELL VOLUME

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>

A. Well Depth (ft.):	<u>83.00</u>
B. Depth to Water (ft.):	<u>15.14</u>
C. Liquid Depth(ft.)[A-B]:	<u>67.86</u>
D. Well Vol./Ft.(see table):	<u>.65</u>
E. Well Volume (gal.) [C*D]:	<u>44.10</u>
F. Three Well Vols [E*3]:	<u>132.3</u>

2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Whale
Grundfos pump

Purge Time: 25 mins

Purge Rate (gpm): 0.4 gpm

Description of activity (i.e.-visual observation of water quality, did well pump
pre - light brown dry, etc):
mid - clear
post - clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	Turb	DTW
Pre-Purge	9:40	6.60	0.112	15.81	0.00	160	23.8	15.14
Mid-Purge	9:55	5.62	0.114	14.36	0.00	198	21.8	15.14
Post-Purge	10:10	5.67	0.116	14.41	0.00	195	21.7	15.14

SAMPLING ACTIVITIES

Sampling Date: 10-10-06

Inventory of sample containers: 3 40ml VOAs w/ HCL

Description of groundwater: _____

Comments & Observations: used Grundfos pump & Honda U-22

Name of sampler(s): KC, TB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>1W-A(5)</u>	GAUGE TIME: <u>14:38</u>
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinst Probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>38.45</u>
B. Depth to Water (ft.):	<u>17.58</u>
C. Liquid Depth(ft.)(A-B):	<u>20.91</u>
D. Well Vol./Ft.(see table):	<u>.16</u>
E. Well Volume (gal.) [C*D]:	<u>3.35</u>
F. Three Well Vols [E*3]:	<u>10.04</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>2-in.</u>	<u>0.16</u>
<u>4-in.</u>	<u>0.65</u>
<u>6-in.</u>	<u>1.47</u>
<u>8-in.</u>	<u>2.61</u>
<u>12-in.</u>	<u>5.87</u>

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 20 mins
Purge Rate (gpm): 0.20 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre-dark brown
mid-cloudy
post slightly cloudy

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB
Pre-Purge	14:39	5.87	0.128	15.91	6.65	322	457.0
Mid-Purge	14:48	5.98	0.113	16.30	7.38	315	121.0
Post-Purge	14:59	5.94	0.113	16.46	7.28	316	123.0

SAMPLING ACTIVITIES

Sampling Date: 1-9-07

Inventory of sample containers: 3 40 mL VOAS w/ HCL

Description of groundwater: PID=000

Comments & Observations: Grundfos pump, Horiba U-22 (Rented from Pine Envo); stabilize readings

Name of sampler(s): KC, JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>NATIONAL HEATSET</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>MW-A(1)</u>	GAUGE TIME: <u>15:22</u>
GAUGE DATE: <u>1-09-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Sol mist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>58.30</u>
B. Depth to Water (ft.):	<u>17.71</u>
C. Liquid Depth(ft.)(A-B):	<u>40.59</u>
D. Well Vol./Ft.(see table):	<u>.16</u>
E. Well Volume (gal.) [C*D]:	<u>6.49</u>
F. Three Well Vols [E*3]:	<u>19.48</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>(2-in.)</u>	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Groutless pump
Purge Time: 25 mins
Purge Rate (gpm): 0.20 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,
Pre - brown
mid Cloudy
post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB
Pre-Purge	15:23	6.87	0.055	15.44	7.75	309	350.2
Mid-Purge	15:38	5.65	0.062	15.38	7.91	328	104.0
Post-Purge	15:48	5.59	0.061	15.47	8.25	336	90.8

SAMPLING ACTIVITIES

Sampling Date: 1-9-07
Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater: PDD=0.0
Comments & Observations: Groutless pump, Horiba U-22 (Rented)
-from Pine Environmental; stabilize Readings

Name of sampler(s): KC + JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 40'</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>MW-A</u>	GAUGE TIME: <u>15:01</u>
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>75.33</u>
B. Depth to Water (ft.):	<u>17.76</u>
C. Liquid Depth(ft.)[A-B]:	<u>57.57</u>
D. Well Vol./Ft.(see table):	<u>.16</u>
E. Well Volume (gal.) [C*D]:	<u>9.21</u>
F. Three Well Vols [E*3]:	<u>27.63</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>2-in.</u>	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grout for pump
Purge Time: 19 mins
Purge Rate (gpm): 0.22 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,

Pre light brown
Mid light brown
Post light brown

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB
Pre-Purge	15:02	6.15	~~3.72~~ 1.88	14.38	0.50	311	146.0
Mid-Purge	15:10	6.40	0.119	~~15.06~~ 14.38	0.60	297	116.0
Post-Purge	15:21	6.41	0.120	15.15	1.21	295	143.0

SAMPLING ACTIVITIES

Sampling Date: 1-09-07

Inventory of sample containers: 3 40 ml vials w/ HCL

Description of groundwater: Field Duplicate

Comments & Observations: Grout for pump, Harbor U-72 (Rented from Pine Enviro) ; Stabilize Readings

Name of sampler(s): ICC + JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Harkset</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: _____
WELL ID: <u>MW-B (S)</u>	GAUGE TIME: <u>9:00</u>
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>36.63</u> ~~37.53~~
B. Depth to Water (ft.):	<u>17.29</u>
C. Liquid Depth(ft.)[A-B]:	<u>19.42</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>3.11</u>
F. Three Well Vols [E*3]:	<u>9.32</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>2-in.</u>	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump - redi-flo
Purge Time: 43 mins
Purge Rate (gpm): _____

Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre-dark brown silty
mid-dark brown silty
post brown-silty

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB
Pre-Purge	9:10	7.71	1.77	15.46	4.77	147	0.0
Mid-Purge	9:19	7.83	1.86	15.43	4.43	140	787.6
Post-Purge	9:53	7.81	0.623	15.41	5.01	199	700.01

SAMPLING ACTIVITIES

Sampling Date: 1-9-07
Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater: PID=0.0
Comments & Observations: Grundfos pump; Horiba U-22
(rented PINE ENVIRO); sample when readings
Stabilize
Name of sampler(s): KC, JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>1W-BI</u>	GAUGE TIME: <u>10:53</u>
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>54.62</u>
B. Depth to Water (ft.):	<u>17.66</u>
C. Liquid Depth(ft.)(A-B):	<u>36.96</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>5.91</u>
F. Three Well Vols [E*3]:	<u>17.74</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>2-in.</u>	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: _____
Purge Rate (gpm): _____

Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre-brown
mid light brown
post " "

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB
Pre-Purge	10:55	5.87	0.143	15.18	7.07	279	89.8
Mid-Purge	11:03	5.40	0.239	15.26	7.01	294	425.0
Post-Purge	11:15	5.44	0.243	15.19	7.59	297	-5.0

SAMPLING ACTIVITIES

Sampling Date: 1-9-07
Inventory of sample containers: 3 40 mL vials w/ HCL pres.

Description of groundwater: _____

Comments & Observations: Grundfos pump, Florba U-22 (rented PINE)
PIP = 0.0; stabilized readings

Name of sampler(s): KC, JIS

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 40</u>
SITE NUMBER: _____	WELL CONDITION: <u>GOOD</u>
WELL ID: <u>MW-B</u>	GAUGE TIME: <u>10:02</u>
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>79.53</u>
B. Depth to Water (ft.):	<u>17.53</u>
C. Liquid Depth(ft.)(A-B):	<u>62</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>9.92</u>
F. Three Well Vols [E*3]:	<u>29.76</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>2-in.</u>	<u>0.16</u>
<u>4-in.</u>	<u>0.65</u>
<u>6-in.</u>	<u>1.47</u>
<u>8-in.</u>	<u>2.61</u>
<u>12-in.</u>	<u>5.87</u>

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 35 mins
Purge Rate (gpm): 0.25 gpm
Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre - brown / purple
mid brown / purple
post brown

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB
Pre-Purge	10:03	6.17	0.964	13.89	3.82	250	895.0
Mid-Purge	10:28	6.10	78.9	14.74	0.43	231	970.0
Post-Purge	10:37	5.98	0.141	15.26	2.19	232	130.0

SAMPLING ACTIVITIES

Sampling Date: 1-9-07
Inventory of sample containers: 3 40 mL vials w/ HCL pres.

Description of groundwater: PID = 0.0
Comments & Observations: Grundfos pump, Horiba-U-22
(rented PINE ENVRD); sample when stabilized
readings
Name of sampler(s): KC, JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>NATIONAL HEATSET</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>(KCH-6(S)) MW-6(S)</u>	GAUGE TIME: <u>11:19</u>
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>32.42</u>
B. Depth to Water (ft.):	<u>17.48</u>
C. Liquid Depth(ft.)(A-B):	<u>14.94</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>2,390.4</u>
F. Three Well Vols [E*3]:	<u>7.17</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>2-in.</u>	<u>0.16</u>
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 14 mins
Purge Rate (gpm): 0.38 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre - light brown
mid - light brown
post - clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	<u>TURB</u>
Pre-Purge	11:19	5.72	3.73	13.99	47.53	314	148.0
Mid-Purge	11:27	6.27	0.555	15.92	0.79	282	9.01
Post-Purge	11:33	6.28	0.525	15.94	0.59	278	77.3

SAMPLING ACTIVITIES

Sampling Date: 1-9-07

Inventory of sample containers: 3 40 ml vials w/ HCL

Description of groundwater: PID = 0.0

Comments & Observations: Grundfos pump, Horiba U-22 (rented, fine HMR); stabilize readings.

Name of sampler(s): KC, JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: <u>GOOD</u>
WELL ID: <u>W-6 (1)</u>	GAUGE TIME: <u>11:50</u>
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>55.57</u>
B. Depth to Water (ft.):	<u>17.04</u>
C. Liquid Depth(ft.)[A-B]:	<u>38.13</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>6.10</u>
F. Three Well Vols [E*3]:	<u>18.3</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>2-in.</u>	<u>0.16</u>
<u>4-in.</u>	<u>0.65</u>
<u>6-in.</u>	<u>1.47</u>
<u>8-in.</u>	<u>2.61</u>
<u>12-in.</u>	<u>5.87</u>

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 33 mins
Purge Rate (gpm): 0.18 gpm
Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre - light brown
mid light brown
post clear to cloudy

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	<u>FURB</u>
Pre-Purge	<u>11:51</u>	<u>6.12</u>	<u>0.114</u>	<u>15.17</u>	<u>4.33</u>	<u>276</u>	<u>210.0</u>
Mid-Purge	<u>12:20</u>	<u>6.13</u>	<u>0.079</u>	<u>15.39</u>	<u>5.75</u>	<u>279</u>	<u>28.4</u>
Post-Purge	<u>12:24</u>	<u>6.11</u>	<u>0.076</u>	<u>15.42</u>	<u>6.07</u>	<u>279</u>	<u>32.7</u>

SAMPLING ACTIVITIES

Sampling Date: 1-9-07
Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater: PID = 0.0
Comments & Observations: Grundfos pump (rented PINE ENVRO);
Honba U-22, stabilized readings

Name of sampler(s): KC, JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>MW-6(S) IW-6(D)</u>	GAUGE TIME: <u>11:35</u>
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>80.84</u>
B. Depth to Water (ft.):	<u>17.53</u>
C. Liquid Depth(ft.)(A-B):	<u>63.31</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>10.13</u>
F. Three Well Vols [E*3]:	<u>30.4</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>2-in.</u>	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump (rented PINE ENVIRONMENTAL)

Purge Time: 13 mins

Purge Rate (gpm): 0.31 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry, ore-clear
mid light brown
post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB
Pre-Purge	11:36	6.37	99.9	13.94	5.40	272	133.0
Mid-Purge	11:45	6.26	75.9	14.81	0.14	268	47.3
Post-Purge	11:49	6.24	68.7	14.84	0.14	269	308.1

SAMPLING ACTIVITIES

Sampling Date: 1-9-07

Inventory of sample containers: 3 40 mL vials with HCL pres.

Description of groundwater: PIA = 0.0

Comments & Observations: used Grundfos pump, red-flu - until stabilized readings, Horiba U-22;

Name of sampler(s): KC, JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>1W-7 (115)</u>	GAUGE TIME: <u>13:29</u>
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

		<u>D.: Well Vol./Ft.:</u>	
		<u>Well Diameter</u>	<u>Gallon/Ft.</u>
A. Well Depth (ft.):	<u>56.88</u> 37.74		
B. Depth to Water (ft.):	<u>17.12</u> 16.98	<u>2-in.</u>	0.16
C. Liquid Depth(ft.)[A-B]:	<u>70.76</u>	4-in.	0.65
D. Well Vol./Ft.(see table):	<u>0.16</u>	6-in.	1.47
E. Well Volume (gal.) [C*D]:	<u>3.32</u>	8-in.	2.61
F. Three Well Vols [E*3]:	<u>9.96</u>	12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 15 mins
Purge Rate (gpm): 0.35 gpm
Description of activity (i.e.-visual observation of water quality, did well pump dry,
PRE- brown tint purple
MID- light brown silt
POST- cloudy → clear silt

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB
Pre-Purge	13:30	6.17	0.90	15.76	6.32	305	379.0
Mid-Purge	13:39	5.84	0.201	16.16	6.46	303	144.0
Post-Purge	13:45	5.83	0.173	16.23	6.43	304	141.0

SAMPLING ACTIVITIES

Sampling Date: 1-9-07
Inventory of sample containers: 3, 40 mL vials w/ HCL PRES.

Description of groundwater: PID=0.0
Comments & Observations: Grundfos pump; Horiba U-22 (rented PINE ENVRO); sampled when readings stabilized.

Name of sampler(s): KC, JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>1W-7 (S)(i)</u>	GAUGE TIME: _____
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>37.74</u> 56.88
B. Depth to Water (ft.):	<u>16.98</u> 17.12
C. Liquid Depth (ft.) [A-B]:	<u>39.76</u>
D. Well Vol./Ft. (see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>6.36</u>
F. Three Well Vols [E*3]:	<u>19.08</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>2-in.</u>	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump

Purge Time: 21 mins

Purge Rate (gpm): 0.32 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,

PRE - brown-dark

MID light brown - still

POST light brown still

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	<u>TURB</u>
Pre-Purge	14:15	6.33	0.068	14.93	4.01	294	447.0
Mid-Purge	14:24	5.91	0.061	15.35	7.16	311	144.0
Post-Purge	14:36	5.81	0.061	15.35	7.77	321	131.0

SAMPLING ACTIVITIES

Sampling Date: 1-9-07

Inventory of sample containers: 3; 40 mL vials w/ HCL

Description of groundwater: PID=0.0

Comments & Observations: Grundfos pump; Horiba U-22 (rented PINE ENVIRO); sampled when readings stabilized.

Name of sampler(s): KC, JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>MW-7</u>	GAUGE TIME: <u>13:46</u>
GAUGE DATE: <u>1-9-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>80.10</u>
B. Depth to Water (ft.):	<u>16.91</u>
C. Liquid Depth(ft.)[A-B]:	<u>63.19</u>
D. Well Vol./Ft.(see table):	<u>.16</u>
E. Well Volume (gal.) [C*D]:	<u>10.11</u>
F. Three Well Vols [E*3]:	<u>30.33</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 22 mins / 16 gallons
Purge Rate (gpm): 0.27 gpm
Description of activity (i.e.-visual observation of water quality, did well pump dry,
PRE - cloudy
MID slightly brown - silty
POST cloudy silty

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB
Pre-Purge	13:46	6.09	85.0	13.90	2.89	302	72.9
Mid-Purge	13:59	6.17	13.4	14.97	0.01	295	265.0
Post-Purge	14:04	6.22	68.3	15.07	0.00	286	129.0

SAMPLING ACTIVITIES

Sampling Date: 1-9-07
Inventory of sample containers: 3, 40 mL vials; w/ HCL
Description of groundwater: PI0=0.0
Comments & Observations: Grundfos pump, Honda U-22, (rented from PINE ENVRO); sampled when readings stabilized.
Name of sampler(s): KC, JB

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heaset</u>	WEATHER: <u>Cold, Sunny 25°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>MW-C</u>	GAUGE TIME: <u>9.04</u>
GAUGE DATE: <u>1-11-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>81.75</u>
B. Depth to Water (ft.):	<u>14.76</u>
C. Liquid Depth (ft.) [A-B]:	<u>66.99</u>
D. Well Vol./Ft. (see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>10.71</u>
F. Three Well Vols [E*3]:	<u>32.15</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 29 mins
Purge Rate (gpm): 0.24 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre cloudy to clear
mid clear
post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	<u>TURB</u>
Pre-Purge	9:04	6.67	0.165	14.07	6.90	244	<u>26.0</u>
Mid-Purge	9:18	5.81	0.086	15.41	6.24	281	<u>57.2</u>
Post-Purge	9:33	5.78	0.088	15.40	6.15	284	<u>35.5</u>

SAMPLING ACTIVITIES

Sampling Date: 1-11-07

Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater: PID=0.0

Comments & Observations: Grundfos pump, Horiba LA-22,
sampled when readings stabilize.

Name of sampler(s): KC, MC

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 35°</u>
SITE NUMBER: _____	WELL CONDITION: <u>GOOD</u>
WELL ID: <u>MW-E</u>	GAUGE TIME: <u>3:18</u>
GAUGE DATE: <u>1-10-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>79.05</u>
B. Depth to Water (ft.):	<u>14.73</u>
C. Liquid Depth(ft.)(A-B):	<u>64.32</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>10.29</u>
F. Three Well Vols [E*3]:	<u>30.87</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 13 mins
Purge Rate (gpm): 0.38 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre - cloudy
mid - clear
post - clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	<u>TURB</u>
Pre-Purge	3:18	7.12	0.073	14.76	2.56	181	47.3
Mid-Purge	3:25	6.36	0.075	15.45	0.00	200	40.1
Post-Purge	3:31	6.07	0.080	15.56	0.00	197	29.1

SAMPLING ACTIVITIES

Sampling Date: 1-10-07

Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater: PID=0.0

Comments & Observations: Grundfos pump, Horiba U-22;
took sample when readings stabilized

Name of sampler(s): KC, JAW

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Cold Sunny 25°</u>
SITE NUMBER: _____	WELL CONDITION: <u>GOOD</u>
WELL ID: <u>MW-F</u>	GAUGE TIME: <u>8:24</u>
GAUGE DATE: <u>1-11-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>24.80</u>
B. Depth to Water (ft.):	<u>14.65</u>
C. Liquid Depth(ft.)(A-B):	<u>10.15</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>1.62</u>
F. Three Well Vols [E*3]:	<u>4.87</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
<u>2-in.</u>	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Gravimetric pump

Purge Time: 23 mins

Purge Rate (gpm): 0.21 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre - cloudy
mid - cloudy
post - clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	<u>TURB</u>
Pre-Purge	<u>8:25</u>	<u>8.53</u>	<u>0.177</u>	<u>15.13</u>	<u>3.13</u>	<u>238</u>	<u>67.0</u>
Mid-Purge	<u>8:37</u>	<u>6.95</u>	<u>0.139</u>	<u>16.33</u>	<u>2.20</u>	<u>184</u>	<u>53.2</u>
Post-Purge	<u>8:48</u>	<u>6.43</u>	<u>0.136</u>	<u>16.40</u>	<u>1.99</u>	<u>152</u>	<u>20.1</u>

SAMPLING ACTIVITIES

Sampling Date: 1-11-07

Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater: PID=0.0

Comments & Observations: Gravimetric pump, Horiba U-22,
sampled when readings stabilize

Name of sampler(s): KC, MC

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heartset</u>	WEATHER: <u>Sunny 35°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>MW-6</u>	GAUGE TIME: <u>2:48</u>
GAUGE DATE: <u>1-10-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>79.00</u>
B. Depth to Water (ft.):	<u>14.92</u>
C. Liquid Depth(ft.)[A-B]:	<u>64.08</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>10.25</u>
F. Three Well Vols [E*3]:	<u>30.75</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 21 mins
Purge Rate (gpm): 0.31 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre-clear
mid clear
post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB	
Pre-Purge	2:49	8.14	0.346	14.32	2.00	141	~~158.0~~	78.7
Mid-Purge	3:01	7.14	0.138	15.47	0.00	106	~~106~~	43.8
Post-Purge	3:10	7.07	0.085	15.50	0.00	93	27.6	

SAMPLING ACTIVITIES

Sampling Date: 1-10-06

Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater: PI0=0.0

Comments & Observations: used Grundfos pump, Florida U-22,
took sample when readings stabilized

Name of sampler(s): KC, JAW

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 35°</u>
SITE NUMBER: _____	WELL CONDITION: <u>Good</u>
WELL ID: <u>MW-H</u>	GAUGE TIME: <u>11:44</u>
GAUGE DATE: <u>1-10-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>solinst pump</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>84.25</u>
B. Depth to Water (ft.):	<u>13.78</u>
C. Liquid Depth(ft.)(A-B):	<u>70.47</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>11.27</u>
F. Three Well Vols [E*3]:	<u>33.8</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump
Purge Time: 22 mins
Purge Rate (gpm): 0.25 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,

pre - purple
mid - brown to light brown
post - light brown to clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP
Pre-Purge	11:45	8.60	4.95	17.47	6.75	455
Mid-Purge	11:57	7.06	0.761	14.97	6.55	420
Post-Purge	12:07	6.96	0.583	5.05	6.72	403

TURB

553.0

313.0

175.0

SAMPLING ACTIVITIES

Sampling Date: 1-10-07

Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater: PI0=D.O

Comments & Observations: used Grundfos pump, Honda U-22,
sampled when readings stabilized

Name of sampler(s): KC, JAW

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 35°</u>
SITE NUMBER: _____	WELL CONDITION: <u>good</u>
WELL ID: <u>MW-3A ZA</u>	GAUGE TIME: <u>10/08</u>
GAUGE DATE: <u>1-10-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>salinity probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>27.80</u> <u>25.50</u>
B. Depth to Water (ft.):	<u>14.05</u>
C. Liquid Depth (ft.) [A-B]:	<u>11.45</u>
D. Well Vol./Ft. (see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>1.83</u>
F. Three Well Vols [E*3]:	<u>5.49</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: whale pump

Purge Time: 19 mins

Purge Rate (gpm): 0.31 gpm

Description of activity (i.e.-visual observation of water quality, did well pump dry,

pre - clear

mid clear

post cloudy

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	TURB
Pre-Purge	10:09	6.44	1.78	16.12	2.00	191	22.2
Mid-Purge	10:21	5.94	0.268	16.94	0.00	150	30.2
Post-Purge	10:28	5.84	0.137	16.68	0.00	142	55.1

SAMPLING ACTIVITIES

Sampling Date: 1-10-07

Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater: P10=0.0

Comments & Observations: whale pump, Horiba U-22, sampled when readings stabilize

Name of sampler(s): KC, JAW

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 35°</u>
SITE NUMBER: <u>10</u>	WELL CONDITION: <u>Good</u>
WELL ID: <u>MW-~~11~~ 3A</u>	GAUGE TIME: <u>8:49</u>
GAUGE DATE: <u>1-10-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>solinst probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>27.50</u> ¹⁰ <u>27.50</u>
B. Depth to Water (ft.):	<u>13.97</u>
C. Liquid Depth(ft.)(A-B):	<u>13.53</u>
D. Well Vol./Ft.(see table):	<u>1.6</u>
E. Well Volume (gal.) [C*D]:	<u>2.21</u>
F. Three Well Vols [E*3]:	<u>6.63</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Grundfos pump / whale pump
Purge Time: 40 mins
Purge Rate (gpm): 0.1 gpm
Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre light brown
mid clear
post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	<u>TURB</u>
Pre-Purge	8:50	6.09	0.275	15.97	2.64	365	63.8
Mid-Purge	9:26	5.93	0.885	16.35	1.94	230	56.1
Post-Purge	9:38	5.99	0.249	16.62	1.32	236	48.4

SAMPLING ACTIVITIES

Sampling Date: 1-10-07
Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater: PIID=0.0
Comments & Observations: Grundfos pump Hummer U-22, sampled
when readings stabilized; 'used' whale pump it wouldn't
work used whale pump Grundfos pump
Name of sampler(s): KC, JAN

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 35°</u>
SITE NUMBER: _____	WELL CONDITION: <u>good</u>
WELL ID: <u>MW-9</u>	GAUGE TIME: <u>20.17</u>
GAUGE DATE: <u>1-10-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solinist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>83.00</u>
B. Depth to Water (ft.):	<u>12.80</u>
C. Liquid Depth(ft.)[A-B]:	<u>70.20</u>
D. Well Vol./Ft.(see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>11.23</u>
F. Three Well Vols [E*3]:	<u>33.69</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Whale pump
Purge Time: 14 mins
Purge Rate (gpm): 0.36 gpm
Description of activity (i.e.-visual observation of water quality, did well pump dry,
pre - cloudy to clear
mid clear
post clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	<u>PURB</u>
Pre-Purge	2:17	7.23	0.158	14.04	5.40	422	19.4
Mid-Purge	2:28	7.50	0.083	13.71	3.39	398	21.1
Post-Purge	2:31	7.49	0.082	13.72	3.42	397	21.2

SAMPLING ACTIVITIES

Sampling Date: 1-10-07
Inventory of sample containers: 3 40 mL vials w/ HCL

Description of groundwater:

Comments & Observations: used G whale pump already in well -
adjusted to rate 0.1 gpm = 0.4 gpm; Honda U-22 -
waited til readings stabilized.

Name of sampler(s): KC, JAW

MONITORING WELL FIELD PARAMETER DATA

SITE NAME: <u>National Heatset</u>	WEATHER: <u>Sunny 40°</u>
SITE NUMBER: _____	WELL CONDITION: <u>GOOD</u>
WELL ID: <u>MW-10</u>	GAUGE TIME: <u>10:34</u>
GAUGE DATE: <u>1-10-07</u>	REFERENCE POINT: <u>TOC</u>
SOUNDING METHOD: <u>Solmist probe</u>	WELL DIAMETER (IN.): <u>2"</u>

CALCULATION OF WELL VOLUME

A. Well Depth (ft.):	<u>83.00</u>
B. Depth to Water (ft.):	<u>14.00</u>
C. Liquid Depth (ft.) [A-B]:	<u>69.00</u>
D. Well Vol./Ft. (see table):	<u>0.16</u>
E. Well Volume (gal.) [C*D]:	<u>11.04</u>
F. Three Well Vols [E*3]:	<u>33.12</u>

D.: Well Vol./Ft.:

<u>Well Diameter</u>	<u>Gallon/Ft.</u>
2-in.	0.16
4-in.	0.65
6-in.	1.47
8-in.	2.61
12-in.	5.87

PURGING ACTIVITIES

Purge Method: Whale pump
Purge Time: 17 mins
Purge Rate (gpm): 0.29 gpm
Description of activity (i.e.-visual observation of water quality, did well pump dry, pre-clear
mid - clear
post - clear

WATER QUALITY PARAMETERS

	Time	pH	Cond.	Temp.	D.O.	ORP	<u>TURB</u>
Pre-Purge	10:35	6.16	0.240	14.27	0.40	46	42.4
Mid-Purge	10:49	6.36	0.222	13.19	0.00	17	12.0
Post-Purge	10:52	6.35	0.218	13.21	0.00	15	11.7

SAMPLING ACTIVITIES

Sampling Date: 1-10-07
Inventory of sample containers: 3 40 mL vials w/ HCL
Description of groundwater: PID=0.0 whale pump in well
Comments & Observations: Groundwater Pump, Horiba U-22, sampled when readings stabilized.
Name of sampler(s): KC, JAW

APPENDIX L

**Permanganate Injection System
Photos**

Permanganate Injection System Photos

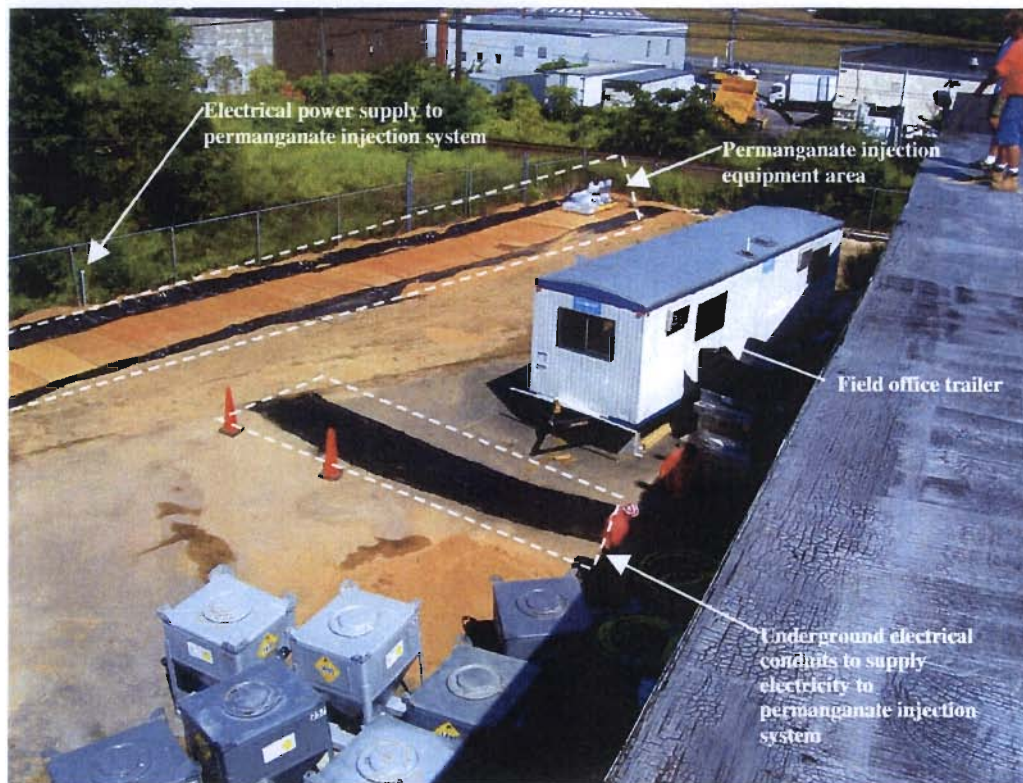


Photo #1: Field office trailer and equipment area for the permanganate injection system.



Photo #2: Totes containing bulk potassium permanganate.

Permanganate Injection System Photos



Photo #3: Potassium permanganate feeder mix unit (left) and permanganate batch mix tank (right).

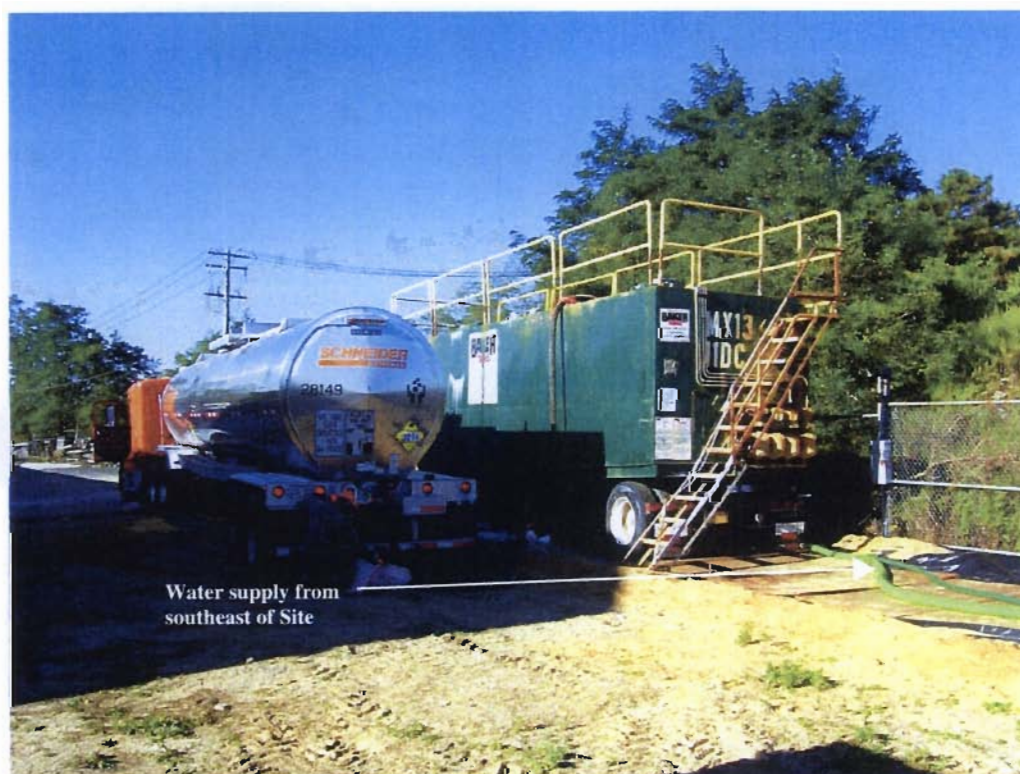


Photo #4: Tanker truck unloading bulk sodium permanganate liquid to batch mix tank.

Permanganate Injection System Photos



Photo #5: Connection pipe from batch mix tank to permanganate injection pumps.

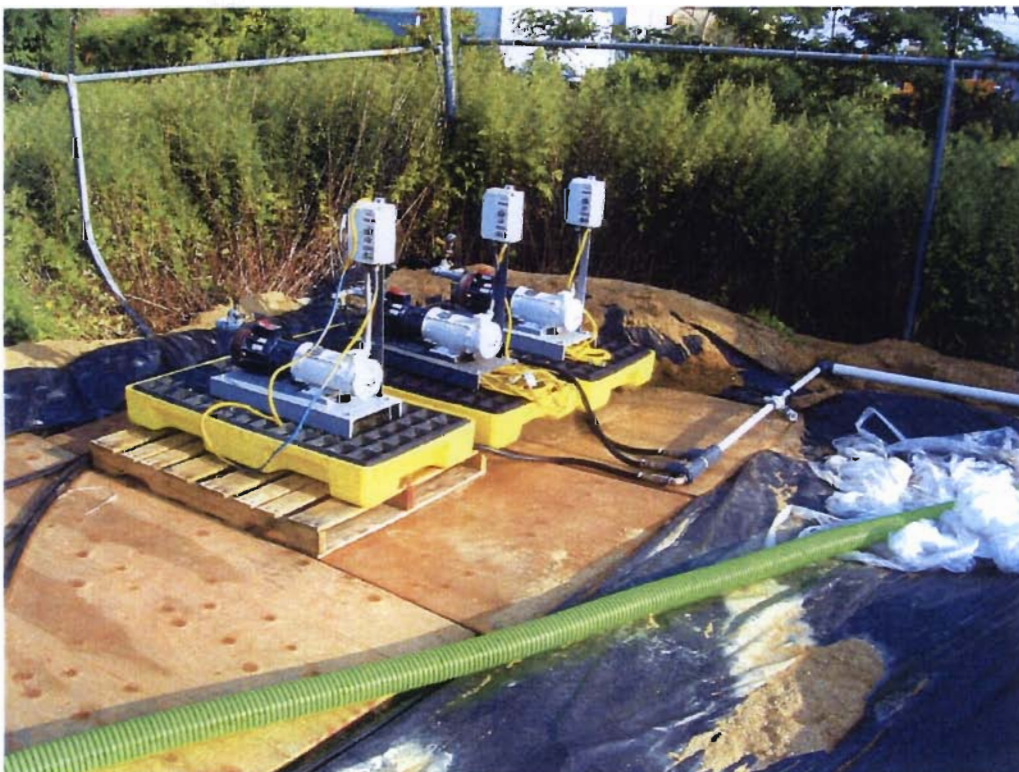


Photo #6: Permanganate injection pumps.



Photo #7: Header pipe (in lined berm) from permanganate injection pumps to injection well manifold legs.

Permanganate Injection System Photos



Photo #8: Permanganate injection wells.



Photo #9: Manifold legs from header pipe to injection wells.

APPENDIX M

Electronic Format of RA Report Files

